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Effects of online instructional conversation on English as a foreign language learners' WebQuest writing performance: a mixed methods study

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Effects of Online Instructional Conversation on English as a Foreign Language Learners’ WebQuest Writing Performance: A Mixed Methods Study

by

Haesong Lee

A dissertation
submitted to the University at Albany, State University of New York
in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy

Department of Educational Theory and Practice
University at Albany, State University of New York
2013
Effects of Online Instructional Conversation on English as a Foreign Language Learners' WebQuest Writing Performance: A Mixed Methods Study

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Abstract

WebQuests, or inquiry-oriented activities in which learners interact with Web-based information (Dodge, 1995, 1996, 2007), have recently been gaining popularity in education in general and in language education in particular. While it has the advantage of fostering higher-level thinking through authentic assignments, a WebQuest can be challenging to second or foreign language learners. In light of this challenge, Instructional Conversation (IC), or discussion-oriented form of teacher-led talk about text (Saunders & Goldenberg, 2007), may provide a solution to foreign/second language learners’ difficulties with comprehension of Web-based information, thereby facilitating their WebQuest task performance. The purpose of this mixed methods study was to investigate the effects of types of post-reading instructional scaffolds on university-level English as a foreign language (EFL) learners’ WebQuest writing performance, as well as to identify aspects and features of IC and IC discourse that might have assisted the learners in their WebQuest writing performance. Using an explanatory sequential design, the first, quantitative phase of the study investigated the effects of three post-reading instructional scaffolds, as provided in EFL WebQuest lessons: (a) online IC, (b) online recitation, and (c) no post-reading instructional scaffold. The second, qualitative phase was conducted as a follow-up to the quantitative phase to help explain the quantitative results. Results from the quantitative phase of the study showed that the online IC group outperformed one or both of the other two groups in overall WebQuest writing performance and in the specific areas of overall writing quality and content. An analysis of qualitative interview data revealed a number of themes that helped to explain the quantitative results. Common themes identified through a cross-case analysis of the
interview data were corroborated by an analysis of online IC discussion texts.

Implications of the study’s results are discussed in both theoretical and practical terms.
Acknowledgments

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CHAPTER 1: INTRODUCTION

Problem Statement

Amid current proliferation of technology in the language classroom, it seems imperative for teachers of a foreign or second language to pursue principled use of technology based upon theoretically sound frameworks drawn from the literature on language learning and teaching in general and on computer-assisted language learning (CALL) in particular, as well as some pertinent literature on education more broadly. This seems to be an important issue for language teachers because adequate provision of assistance in students’ learning of the target language becomes possible only when teachers use technology based upon some sound theoretical principles drawn from the literature. In light of this, a researcher’s theory-based investigation of use of technologies in the context of language teaching and learning is likely to provide a useful insight for foreign and second language teachers.

The history of approaches to CALL has paralleled that of approaches to language learning and teaching in general (Kern & Warschauer, 2000; Warschauer, 2004). The first phase of CALL pedagogy, which Kern and Warschauer (2000) refer to as “structural approaches to CALL,” was congruent with the structural methods of language teaching (Kern & Warschauer, 2000; Warschauer, 2004). In this phase, CALL primarily involved use of drill and practice programs, grammar and vocabulary tutorials, and language testing programs. This reflected structural methodologists’ view of language learning as formation of a set of mechanical habits, a view drawn from behaviorist theory of learning (e.g., Skinner, 1957; Watson, 1924). Then, as behaviorist approaches to language
learning and teaching gave way to cognitive/constructivist approaches, CALL approaches accordingly shifted to “cognitive/constructivist approaches to CALL” (Kern & Warschauer, 2000). In this phase of CALL, language learners engaged in constructing new knowledge primarily through explorations of simulated environments. This was largely a reflection of cognitive/constructivist view of language learning as an active process of constructing knowledge or a second language system. Finally, sociocognitive approaches to CALL, the third and final phase, emerged, and these approaches currently serve as the most popular pedagogical paradigm in CALL.

As Kern and Warschauer (2000) state, sociocognitive approaches to CALL shift the dynamic from learners’ interaction with computers to interaction with other humans (e.g., interlocutors, readers, or writers) via the computer. Sociocognitive perspectives on language learning and teaching, along with the technological development of computer networking, provided the basis for this new approach to CALL. From a sociocognitive perspective, learning was viewed not just in terms of changes in individuals’ cognitive structures but also in terms of the social structure of learners’ discourse and activity. From this perspective, language teaching was viewed not just in terms of providing comprehensive input (the purpose of which was to provide individuals with an opportunity to mentally construct the grammar of a second/foreign language system through exposure to extensive natural data), but rather as “helping students enter into the kinds of authentic social discourse situations and discourse communities that they would later encounter outside the classroom” (Kern & Warschauer, 2000, p. 5). Many saw this to be best achieved through task-based language teaching.
Computer-mediated communication (CMC) and the World Wide Web in the computer networking environment have widely been regarded as excellent tools for sociocognitive language learning and teaching. The World Wide Web offers an extensive array of authentic materials with which students can engage in a variety of authentic language learning activities, while CMC allows languages learners to communicate with other learners, the teacher, or native speakers of the target language either synchronously (i.e., in real time, or simultaneously) or asynchronously (i.e., in delayed time, or not simultaneously). This shows that both CMC and the World Wide Web can serve as ideal tools for “helping students enter into the kinds of authentic social discourse situations and discourse communities that they would later encounter outside the classroom” (Kern & Warschauer, 2000, p. 5), which, as indicated above, is the essence of sociocognitive perspective on language teaching. Then, given that, as stated above, helping language students enter into such kinds of authentic discourse situations and discourse communities is widely seen to be best achieved through task-based language teaching (Kern and Warschauer, 2000), it follows that task-based language teaching with CMC and/or World Wide Web technologies constitutes a crucial area within the currently popular paradigm of sociocognitive approaches to CALL.

Among the lesson formats or activities that involve students’ and the teacher’s use of the World Wide Web is the WebQuest. Since its inception in 1995, the WebQuest has been gaining popularity in education in general and in language education in particular. A WebQuest, or an inquiry-oriented lesson format which involves learners in using Web-based information, is designed to promote learners’ thinking at the levels of analysis, synthesis, and evaluation (Dodge, 2001). Since it is structurally organized around a
meaning-focused, authentic task, a WebQuest, when used in the context of language
teaching and learning, can be viewed as a form of task-based language teaching and
learning, or, more precisely, a lesson format or lesson structure for task-based language
teaching and learning with technology. Given the significant place that task-based
language teaching with World Wide Web technology holds within the current paradigm
of sociocognitive approaches to CALL, it may well be said that the WebQuest deserves
attention in CALL research, as well as second/foreign language education research in
general.

As the developers of the WebQuest model, Bernie Dodge and Tom March, have
stressed, WebQuests have the advantage of fostering higher-level thinking through
authentic assignments that emphasize inquiry-based learning (Dodge, 1995, 2001, 2007;
March, 2003, 2007). Despite this advantage, however, WebQuests can be
overwhelmingly challenging to second and foreign language learners, especially to
foreign languages learners. Since information is presented in the target language, not
their native language, foreign/second language learners often experience difficulties in
comprehending and subsequently transforming the information unless appropriate teacher
scaffolding (or assistance) is provided to them (Pérez Torres, 2006, 2007).

As a way to help foreign/second language learners overcome “difficulties with the
comprehension and coordination of ideas,” Pérez Torres (2006, 2007) proposed a few
scaffolding strategies, including the addition of a phase for background information
activation in WebQuest lessons. However, neither the author’s proposed strategies nor
the strategies offered by the WebQuest model developers (e.g., Dodge, 2001) include a
critical form of scaffolding that has recently received much attention in the field of
education and that is designed not only to allow for a phase for activation of background information but also to promote learners’ understanding of ideas and concepts from written text through discussions about the text – namely, Instructional Conversation. Instructional Conversation, which emerged in reaction to the ubiquity of “recitation” across American classrooms, may provide a solution to foreign/second language learners’ difficulties with comprehension of Web-based information and concepts, thereby enabling them to better perform in WebQuest tasks, which typically entail production of a final product in either written or spoken form. Especially, when Instructional Conversation is incorporated as a post-reading scaffold into a WebQuest lesson where language learners perform a writing task after reading Web-based materials, it is likely to help them better perform the writing task.

Despite the importance of post-reading instructional scaffolds in foreign/second language learners’ WebQuest writing performance, no study to date has investigated the effects of post-reading instructional scaffolds on foreign/second language learners’ WebQuest writing performance. As a result, there has been no study that investigated either the effect of incorporating Instructional Conversation as a post-reading scaffold into a WebQuest lesson or the effects of Instructional Conversation vs. recitation on foreign/second language learners’ WebQuest writing performance. Results obtained from a comprehensive study of the relative effects of Instructional Conversation (IC) vs. no post-reading instructional scaffold vs. recitation on foreign/second language learners’ WebQuest writing performance would inform teachers of English as a foreign/second language whether an IC-supported WebQuest can be used as a critical task-based
language lesson format that serves to improve their students’ writing performance, as well as to promote higher-order thinking and conceptual and language development.

Purpose Statement

The purpose of this mixed methods study was to investigate the effects of types of post-reading instructional scaffolds on university-level English as a foreign language (EFL) learners’ WebQuest writing performance, as well as to identify aspects and features of IC and IC discourse that might have assisted the learners in their WebQuest writing performance. An explanatory sequential design (Creswell & Plano Clark, 2007, 2011) was used, which involved collecting and analyzing quantitative (numeric) data first and then explaining the quantitative results with qualitative (textual) data. In the first, quantitative phase of the study, the effects of three post-reading instructional scaffolds, as provided in EFL WebQuest lessons, were studied: (a) online Instructional Conversation; (b) online recitation; and (c) no post-reading instructional scaffold, which is traditional. The second, qualitative phase was conducted as a follow-up to the quantitative results to help explain the quantitative results.

Research Questions

The following research questions were posed, with the first and second questions consisting of two and three subquestions, respectively:

1. What are the relative effects of online IC vs. online recitation vs. no post-reading instructional scaffold on EFL learners’ WebQuest writing performance?
   (a) What are their relative effects on the overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively, of EFL learners’ WebQuest writing?
(b) What are their relative effects on EFL learners’ overall WebQuest writing performance?

2. What aspects and features of IC and IC discourse may have assisted the EFL learners in the online IC group in their WebQuest writing performance?
(a) What aspects and features of IC and IC discourse may have assisted them in their overall WebQuest writing performance?
(b) What aspects/features of IC and IC discourse may have assisted them in their WebQuest writing performance in the area of content?
(c) What aspects/features of IC and IC discourse may have assisted them in their WebQuest writing performance in the area of overall writing quality?

3. In what ways do the qualitative data help to explain the quantitative results?

As will be explicated in some detail in Chapter 3, due to the nature of the study’s design, the overarching qualitative research question (i.e., question 2) and the mixed methods question (i.e., question 3) were originally posed tentatively and later finalized after quantitative results were obtained. At this point, three qualitative subquestions (i.e., 2(a), 2(b), and 2(c)) were developed based upon the quantitative results and subsumed under the overarching qualitative research question. As for the mixed methods question, while many researchers render it implicit, I included it, following Creswell and Plano Clark’s (2007, 2011) recommendation.

Statement of the Hypotheses

Based upon the extant literature reviewed in Chapter 2, it was hypothesized that types of post-reading instructional scaffolds would impact EFL learners’ overall WebQuest writing performance and, specifically, their performance in the areas of
overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively. More specifically, the following hypotheses were posed.

1. Online Instructional Conversation about WebQuest readings will lead to better overall WebQuest writing performance by EFL students than traditional, no post-reading instructional scaffold. Specifically, online IC will lead to better WebQuest writing performance in the areas of overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively.

2. Online Instructional Conversation about WebQuest readings will lead to better overall WebQuest writing performance than an online recitation review of the readings. Specifically, online IC will lead to better WebQuest writing performance in the areas of overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively.

Definitions of Terms

Terms used in the purpose statement, research questions, and the hypothesis statement were operationally defined as follows:

1. Scaffold: assistance, help, support, or guidance that teachers provide to students.

2. A post-reading instructional scaffold: a scaffold that a teacher provides to students after the students (as well as the teacher) have read the input materials for a WebQuest lesson. This scaffold is intended to assist students in understanding the text of the WebQuest input materials and is provided through a session in which the teacher and students talk about the text. If a brief scaffold designed to be integrated later into the main post-reading instructional scaffold is provided before students read the WebQuest
input materials, the main post-reading scaffold, together with the brief pre-reading scaffold, will also be referred to as a post-reading instructional scaffold.\(^1\)

3. English as a foreign language (EFL): English as learned and/or used in a country where English is not used as the native (or first) language of the people of the country. This definition of EFL contrasts with that of English as a second language (ESL), which refers to English as learned and/or used in a country where English is used as the native language of the people of the country.

4. Online Instructional Conversation: discussion-oriented, teacher-led talk about written text occurring over the Internet on a synchronous (i.e., real time) basis (a) in which the teacher focuses on a substantive theme relevant to the text throughout the talk but yet intentionally relates the theme to the text during the talk and (b) which exhibits the 10 elements of IC presented by Goldenberg (1991, 1992/1993) at least to a moderate extent.\(^2\)

5. Online recitation: a pattern of classroom discourse or mode of teaching occurring over the Internet on a synchronous basis in which the teacher consistently asks known-answer questions (i.e., questions to which the teacher already knows the answer) that require the students to display their mastery of the factual, literal details of written text, the students then respond with their answers, and then, optionally, the teacher evaluates the students’ responses, typically with short remarks of evaluation (e.g., *Good*, *Right*, or *Well done*).

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\(^1\) This applies specifically to Instructional Conversation, which necessarily involves a brief introductory session before students read the text (see the IC element of “activation and use of background knowledge and relevant schemata” in Table 1 in Chapter 2).

\(^2\) The operational definition of online Instructional Conversation, as well as those of online recitation and no post-reading instructional scaffold, will be presented again with further explication in Chapter 3, where treatment is discussed.
6. No post-reading instructional scaffold: a session which involves no talk about written text between the teacher and students or among students either over the internet or face to face and in which students engage in continuing to read the text.

7. WebQuest: an inquiry-oriented lesson format or activity in which learners are given a task that involves them in interacting with information from the World Wide Web.

8. WebQuest writing performance: scores on essays completed as an end product for a WebQuest task or performance in the writing of essays completed as an end product for a WebQuest task.

9. Overall WebQuest writing performance: composite score consisting of the sum of percentage scores on these five variables: (a) overall writing quality, (b) fluency, (c) syntactic complexity, (d) lexical complexity, and (e) content.

10. Overall writing quality: holistic score on content, organization, and grammatical accuracy of an essay.

11. Fluency: the total number words in an essay.

12. Syntactic complexity: the mean length of T-units in an essay, as determined by dividing the total number of words by the number of T-units. A T-unit (or a “terminable unit”) is “a main clause plus all subordinate clauses and non-clausal structures attached to it” (Hunt, 1970, p. 4)

13. Lexical complexity: the Type-Token Ratio in an essay, as determined by the number of different words divided by the total number words.

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1 The operational definitions of the dependent variables (9-14) will be presented again in the “instruments” section in Chapter 3.
14. Content: score on accuracy, thoroughness, and completeness of the content of an essay, as the content is generated in compliance with the task instructions given in the prompt of the test, i.e., to compare and contrast certain aspect(s) in the source materials that students have read.

Summary

This chapter began with a problem statement. I first addressed the need for language teachers to pursue principled use of technology based upon theoretically sound frameworks drawn from the literature. Then, after situating task-based language teaching with World Wide Web and CMC technologies within the paradigm of sociocognitive approaches to CALL, I briefly introduced a view of a WebQuest as a lesson format for task-based language teaching with World Wide Web technology. Following this, I indicated the difficulties that foreign/second language learners often experience in comprehending the ideas and concepts represented in WebQuest readings and subsequently addressed the point that Instructional Conversation may provide a solution to such difficulties, thereby enabling the language learners to better perform in WebQuest writing tasks. This was followed by the statement of the central focus of the study, i.e., the relative effects of Instructional Conversation (IC) vs. no post-reading instructional scaffold vs. recitation on foreign language learners’ WebQuest writing performance. In presenting this statement, I provided the need or rationale for studying the problem by articulating a knowledge void in the extant literature and alluded briefly to the study’s practical significance.⁴

⁴ I followed Hernon and Schwartz’ (2007) suggestion that the problem statement in a research report include four components: (a) a background section (i.e., lead-in); (b) declaration of originality (e.g., mentioning a knowledge void); (c) indication of the central focus of the study; and (d) the study’s significance. Hernon and Schwartz further suggest that (b), (c), and (d) be addressed together in an
The problem statement was followed by a purpose statement. In the purpose statement, I included a brief mention of some basic elements of the study’s method. Following this, I presented the research questions for this study, which consisted of quantitative, qualitative, and mixed methods questions. Finally, I presented a statement of the hypotheses and subsequently provided operational definitions of terms.

In the next chapter, I will review the extant literature related to the above-stated research questions. I will begin with a review of the conceptual literature that provided a theoretical foundation for this study. I will then steer the literature review increasingly more closely toward the research questions. Upon completion of the literature review, I will restate the educational problem and the central focus of the study in connection with the literature reviewed.

[Interlocking manner, rather than separately. The authors’ suggestion is largely congruent with Creswell’s (2007) suggestion regarding a problem statement.]
CHAPTER 2: LITERATURE REVIEW

Theoretical Underpinnings

Tharp and Gallimore’s (1988, 1990, 1991) theory of teaching as assisting performance and their conceptualization of Instructional Conversation as the critical form of assisting performance, and the culminating model of IC developed by Goldenberg (1991, 1992/1993) provided a theoretical foundation for this study. Since they all draw on, among others, Vygotsky’s sociohistorical theory, particularly the general genetic law of cultural development and the notion of the zone of proximal development, I will first review these elements of Vygotskian theory. I will then review Tharp and Gallimore’s teaching theory and their conceptualization of IC. This will be followed by presentation of the IC model.

The General Genetic Law of Cultural Development and the Zone of Proximal Development

Influenced by Marxist theory (e.g., Marx, 1959), Vygotsky (1981) advanced a general statement about the social origins of individual mental functioning, which he referred to as “the general genetic law of cultural development”:

Any function in the child’s cultural development appears twice, or on two planes. First, it appears on the social plane, and then on the psychological plane. First, it appears between people as an interpsychological category, and then within the child as an intrapsychological category. This is equally true with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition. (p. 163)

In short, Vygotsky claims that higher mental functioning in the individual is rooted in social life. According to this view, in order to understand mental functioning in the
individual, we must examine intermental (or interpsychological) functioning, which is the precursor to intramental (or intrapsychological) functioning (Wertsch, 1991). Referring to the process by which the social becomes the psychological as “internalization,” Vygotsky (1978) states that internalization involves the “transformation” of an interpersonal process into an intrapersonal one. He further states that the internalization of socially rooted and historically developed activities is the distinguishing feature of human psychology.

Vygotsky’s (1981) general claim about the social origins of individual mental functioning, i.e., the general genetic law of cultural development, connects to his notion of the zone of proximal development. The zone of proximal development (ZPD) refers to “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p. 86, italics in original). As Vygotsky explicates, the actual developmental level represents a child’s current level of development, which can be assessed by the child’s ability to solve problems without assistance, whereas the potential developmental level is a higher level of development that the child can attain only with the assistance of more capable others. Cazden (2001) succinctly describes the ZPD as “a shifting zone of competence within which a learner, with help, can accomplish what later can be accomplished alone” (p. 63).

As Cazden (2001) noted, the metaphorical term “scaffold” or “scaffolding” has become a common caption for the kind of help or assistance within the ZPD. For example, Branford, Brown, and Cocking (1999), among others, used these terms to
address the point that more capable others provide scaffolds (or scaffolding) so that the learner can accomplish tasks that he or she otherwise could not. However, when Wood, Bruner, and Ross (1976) first used the term scaffold(ing), they did not use it in connection with Vygotsky’s construct of the ZPD; that is, they did not make any connection between their analysis of tutoring and the ZPD. This may account for the reason why the term is also commonly used to refer to just help, assistance, or support that teachers (sometimes, other more capable people) provide to students irrespective of the ZPD.

A Theory of Teaching as Assisting Performance

Tharp and Gallimore’s (1988, 1990, 1991) theory of teaching as assisting performance is based upon a union of neo-Vygotskian and behavioral/cognitive scientific principles. While the cornerstone of the theory is Vygotsky’s concept of the zone of proximal development, it has incorporated the achievements of Western behavioral and cognitive science to detail the processes by which assistance is achieved, because neither Vygotsky nor his followers have adequately attended to such processes (Tharp & Gallimore, 1988, 1990). The Western scientific achievements that Tharp and Gallimore brought into conjunction with neo-Vygotskian understandings in constructing their theory were six means of assisting performance, which will be presented later in this section.

Teaching as Assisting Performance through the Zone of Proximal Development

The zone of proximal development is a crucial concept in Tharp and Gallimore’s (1988, 1990, 1991) teaching theory. To help the reader better understand the logic underlying their conceptualization of teaching, I have reproduced the definition of the ZPD presented above and have also added another important quote:
the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. …

The zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state. (Vygotsky, 1978, p. 86, italics in original)

According to Tharp and Gallimore (1988, 1991), the actual developmental level of a child, or what they call the developmental level of a child, is identified by what the child can do alone, i.e., without assistance. What the child can do with the assistance of more capable others, including adults, defines the zone of proximal development (Tharp & Gallimore, 1991). Given these, “[d]istinguishing the proximal zone from the developmental level by contrasting assisted performance versus unassisted performance have profound implications for educational practice, It is in the proximal zone that teaching may be defined” (Tharp & Gallimore, 1988, p. 31, italics in original). They then quote a crucial point from Vygotsky’s work: “In Vygotskian terms, teaching is good only when ‘it awakens and rouses to life those functions which are in a state of maturing, which lie in the zone of proximal development’ (Vygotsky, 1956, p. 278, quoted in Wertsch & Stone, 1985; italics in original)” (Tharp & Gallimore, 1988, p. 31).

Based upon this series of presentations, Tharp and Gallimore (1988) present their general definition of teaching: “Teaching consists of assisting performance through the ZPD. Teaching can be said to occur when assistance is offered at points in the ZPD at which performance requires assistance” (Tharp & Gallimore, 1988, p. 31, italics in original).
A Model of Four Stages of the ZPD

Tharp and Gallimore’s (1988) definition of teaching, presented above, implies that until internalization occurs, performance must be assisted by more capable others. This “other-assistance” constitutes the first stage of the ZPD in their four-stage model of the ZPD. In addition to this stage, Tharp and Gallimore include “self-assistance” as the second stage of the ZPD. These two stages constitute the ZPD, and the second, self-assistance stage serves as a transitional stage between the other-assistance stage and the third stage of internalization (or automation). The model further addresses de-automation/recursion as the final, fourth stage. This model, according to Tharp and Gallimore, is intended to portray progress through the ZPD – from assisted performance to unassisted, self-regulated performance – and beyond. This four-stage model is represented in a diagram in Figure 1.

*Figure 1*. Genesis of performance capacity: Progression through the ZPD and beyond

(from Tharp and Gallimore, 1988, p. 35)
**Stage I: Where performance is assisted by more capable others.** This is the first stage in the ZPD, where more capable others, including adults, assist children in their task performance. The assumption is that before children can function as independent agents, they must rely on adults or more capable peers for other-regulation of task performance. The amount and kind of other-regulation that a child needs depend on the nature of the task, as well as the child’s age. Depending on the child’s level of competence in performing a task at hand, the parent, teacher, expert, or more capable peer assists the child, using the appropriate means of assistance, such as modeling, directing, questioning, or cognitive structuring, to name a few.

Here, “task” is not limited to the “problem-solving” task as addressed in Vygotsky’s (e.g., 1978) definition of the ZPD. As Tharp and Gallimore (1988) make clear elsewhere in the book, in contemporary neo-Vygotskian discussions, the concept of the ZPD has been extended to a more general statement, in which problem solving, as addressed in Vygotsky’s definition of the ZPD, is understood to mean performance in other domains of competence or skills as well. Also, although Vygotsky’s available work principally concerns children, the notion of ZPD is applicable not only to children but also to adults, because “identical processes of self- and other-assistance in the ZPD can be seen operating in the learning adult” (Tharp and Gallimore, 1990, p. 186). Given these, a “task,” as discussed in Tharp and Gallimore’s (1988, 1990) four-stage ZPD model, should be understood as not only a problem-solving task but also a variety of other types of tasks, while their discussion of assisting a child through the ZPD can equally apply to a learning adult.
In this first stage, as the child’s comprehension and skill increase, the amount of adult assistance becomes lessened gradually. Thus, in terms of relative responsibility associated with the task at hand, we see a steadily declining plane of adult responsibility for task performance and a reciprocal increase in the learner’s proportion of responsibility. The developmental task of Stage I is to transit from other-regulation to self-regulation, which is represented by Stage II. The task of Stage I is accomplished when the responsibility for tailoring the assistance and performing the task has been effectively handed over to the learner. This achievement is gradual, as indicated by dots around the line between Stage I and Stage II in Figure 1.

Stage II: Where performance is assisted by the self. In this stage, which constitutes the second, and final, stage in the ZPD, the child performs a task without assistance from others. But “this does not mean that the performance is fully developed or automated [i.e., internalized]” (Tharp & Gallimore, 1988, p. 36, italics in original). This point can be seen most clearly at the level of ontogenesis (i.e., individual development), but it can also be seen at the level of microgenesis (e.g., the development of a particular performance capacity), which this ZPD model is intended to address. Regulation has passed from the adult to the child, but the control function remains with the overt verbalization in the form of self-directed speech. Children employ self-directed speech (i.e., taking to themselves) to assist their own performance of a task. Thus, for children, a major function of self-directed speech is self-guidance. The use of self-speech at the microgenetic level is not limited to children. Adults also sometimes use self-directed speech; they talk to themselves and indeed assist themselves in carrying out a task.

5 In presenting this ZPD model, Tharp and Gallimore (1988, 1990) address ontogenesis (or the development of the individual) to some extent.
Although Tharp and Gallimore (1988, 1990) consistently use the term “self-directed speech,” it in fact refers to what Vygotsky (1987, as cited in Lantolf, 2003) called “private speech.” Private speech contrasts with “inner speech” in that whereas the former is audible speech to oneself, the latter is silent speech for oneself (Lantolf, 2003). Tharp and Gallimore (1988), though not using those terms, clearly distinguish the two concepts. They further describe how private speech, which has its origin in the interpsychological plane, is internalized into inner speech by stating that “[w]hat is spoken to a child is later said by the child to the self, and later is abbreviated and transformed into the silent speech of the child’s thought” (Tharp & Gallimore, 1988, p. 44).

**Stage III: Where performance is developed, automatized, and fossilized.** Once all evidence of self-regulation, involving use of self-directed speech, has vanished, the child has emerged from the ZPD for the task. Now, task performance has been internalized and automatized. Hence, assistance from more capable others or the self is no longer needed; it could be even “disruptive and irritating” (Tharp & Gallimore, 1988, p. 38). This is a stage beyond self-control and social control. Since performance has already been developed and thus is no longer developing, this fixed, internalized performance can be described as the “fruits” of development (see Vygoysky, 1978).

**Stage IV: Where de-automatization of performance leads to recursion back through the ZPD.** According to Tharp and Gallimore (1988), de-automatization and recursion occur so regularly that they constitute a distinct stage in this model. De-automatization occurs in situations where one can no longer do what he or she formerly could do. De-automatization may be due to slight environmental changes or individual stress, among many others. In those situations, one retreats (or recurs) either to the immediately prior
self-regulating phase or further to the other-assistance (or other-regulation) phase. For example, quite competent adults may sometimes have difficulty recalling a certain thing, and in this situation, they attempt to recall it by talking to themselves (recursion to the self-regulation phase). When a student can no longer do what he or she used to do in some earlier class and the teacher assists the student, the student is recurring to the other-assistance phase. In either case, the goal is to re-proceed through the ZPD and again into a new automatization.

Responsive Assistance

As mentioned above in the section on Stage I of the ZPD model, as the child’s comprehension and skill increase, adults lessen their help. During the early periods in Stage I, assistance may be frequent and elaborate, but, later it occurs less often and is truncated. If truncated guidance fails, the adult may provide additional assistance. In other words, in Stage I of the ZPD model, adult assistance is contingent upon and responsive to the child’s level of performance.

The continual adjustments of the levels and amounts of adult assistance are “responsive to the child’s level of performance and perceived need” (Tharp & Gallimore, 1988, p. 40, italics in original). It is for this reason that the general definition of teaching as assisting performance through the ZPD, presented earlier, emphasizes that “Teaching can be said to occur when assistance is offered at points in the ZPD at which performance requires assistance” (Tharp & Gallimore, 1988, p. 31, italics in original). Thus, careful and continuous assessment of the child’s current abilities, relative to the ZPD and the developmental level, is a requirement for the teacher. This notion of
responsive teaching is relevant only to Stage I of the ZPD model, as the other stages do not involve assistance by more capable others on the social plane.

Means of Assisting Performance

As noted earlier, although the cornerstone of this theory of teaching as assisting performance is Vygotsky’s concept of the ZPD (Tharp & Gallimore, 1990), it has also incorporated the achievements of Western behavioral and cognitive science. Specifically, these achievements are means by which assistance is provided: modeling, contingency management, feeding-back, instructing, questioning, and cognitive structuring. In proposing these six means of assistance, Tharp and Gallimore (1988, 1990) make it clear that “the list is surely not final” (Tharp & Gallimore, 1990, p. 178), thus allowing room for addition of other means of assistance as they are identified or emerge in the future. The purpose of their proposing these means of assistance, according to Tharp and Gallimore (1990), is to “provide a more differentiated analysis of performance assistance and move teaching/learning analysis closer to a scientific base of understanding [by using these concepts]” (p. 183).

In their 1991 national center research report, Tharp and Gallimore present seven means of assistance by adding another means, “task structuring,” to the list of the six means. Here, the earlier term “instructing” was replaced by “directing” without a change in its concept, while the term “cognitive structuring” was replaced by “explaining” without a change in its scope of meaning. Since then, neither Tharp and Gallimore nor other key IC theorists, such as Claude Goldenberg, have touched upon means of assistance performance. Also, to the best of my knowledge, no researchers -- or at most only a few researchers -- seem to have investigated IC in terms of these means of
performance assistance except for Tharp and Gallimore (1988) themselves (see Chapter 7).

In view of the aforementioned points (a) that Tharp and Gallimore (1988, 1990) make clear that in their theory, the key concept is the ZPD and that the list of the six (or later seven) means of assisting performance is not final, (b) that neither Tharp and Gallimore nor other key IC theorists have addressed the means of assistance proposed by Tharp and Gallimore since their writings on these means, and (c) that studies which investigated IC in terms of these means of performance assistance are scarce, it may be that this set of means of assistance does not occupy a significant place in Tharp and Gallimore’s theory of teaching, at least as it is compared to the conceptualization of teaching, the ZPD model, and responsive teaching as an interrelated whole. Assuming that this conjecture is justifiable, I will simply present verbatim the description of the seven means of assistance presented in Tharp and Gallimore’s 1991 research report, rather than elaborating on each of them. The seven means of performance assistance presented in this 1991 research report encompass the six means of performance assistance proffered previously by Tharp and Gallimore (1988, 1990).

1. Modeling: offering behavior for imitation. Modeling assists by giving the learner information and a remembered image that can serve as a performance standard.

2. Feeding back: providing information on a performance as it compares to a standard. This allows the learners to compare their performance to the standard, and thus allows self-correction.

3. Contingency managing: applying the principles of reinforcement and punishment.

In this means of assisting performance, rewards and punishment are arranged to
follow on behavior, depending on whether or not the behavior is desired.

4. Directing: requesting specific action. Directing assists by specifying the correct response, providing clarify and information, and promoting decision-making.

5. Questioning: producing a mental operation that the learner cannot or would not produce alone. This interaction assists further by giving the assistor information about the learner’s developing understanding.

6. Explaining: providing explanatory and belief structure. This assists learners in organizing and justifying new learning and perceptions.

7. Task structuring: chunking, segregating, sequencing, or otherwise structuring a task into or from components. This modification assists by better fitting the task itself into the zone of proximal development. (Tharp & Gallimore, 1991, pp. 4-5)

*Instructional Conversation as the Critical Form of Assisting Performance*

In their 1991 national center research report, Tharp and Gallimore articulate Instructional Conversation as the critical form of assisting performance through the ZPD. As a background leading to the point, they describe and criticize the century-long ubiquity of recitation across American classrooms. In recitation, i.e., a form of teaching “consist[ing] of the teacher assigning a text (in the form of a textbook or a lecture) followed by a series of teacher questions that require students to display their mastery of the material through convergent factual answers” (Tharp & Gallimore, 1991, p. 2), teacher questions seek predictable, correct answers, and only rarely are the questions responsive to student productions (Tharp and Gallimore, 1991). Thus, “only rarely are they used to assist students to develop more complete or elaborate ideas” (p. 2).
After providing this significant background, they briefly address their theory of teaching (Tharp & Gallimore, 1988, 1990), a review of which was provided in fuller detail in the preceding section. Here, they reiterate their general definition of teaching: “Teaching consists of assisting performance through a child’s zone of proximal development (ZPD). *Teaching must be redefined as assisted performance; teaching occurs when performance is achieved with assistance*” (Tharp & Gallimore, 1991, p. 3, italics in original). This definition is essentially the same as the earlier one (Tharp & Gallimore, 1988) presented in the preceding section, with some minor differences in phrasing. What is a critically important part of their paper in relation to this study comes next.

After briefly describing seven means of assisting performance, Tharp and Gallimore (1991) explicitly state the following:

Many properly conducted classroom activities provide assistance: lectures, demonstrations, cooperative learning, exercises/activities, and textbook reading can all assist learning, and even recitation and assessment (used judiciously) are necessary elements of the assisting classroom. But … the critical form of assisting learners is *dialogue* – the questioning and sharing of ideas and knowledge that happen in conversation. Conversation that assists performance appears in several guises. … Its generic name is the “instructional conversation.” (p. 4, italics in original)

In other words, as stated in the abstract of the report, “assistance [in the ZPD] is best provided through the instructional conversation, a dialogue between teacher and learners in which the teacher listens carefully to grasp the students’ communicative intent, and tailors the dialogue to meet the emerging understanding of the learners” (p. 1; italics
The notion (or definition, as some might call it) of IC included in this statement coincides with that which is described in the body text of the report: “[T]o grasp the communicative intent of the child, adults need to listen carefully, to make guesses about the meaning of the intended communication (based on the context and on knowledge of the child’s interests and experiences), and to adjust their responses to assist the child’s efforts in other words, to engage in conversation” (p. 4).

In this seminal article on Instructional Conversation, Tharp and Gallimore (1991) do not explicate in sufficient detail why they claim that IC is the critical form of assisting performance through the ZPD over others. They present their general definition of teaching, based upon Vygotsky’s concept of the ZPD, and then immediately address such a claim, and the rest of the article is devoted to activity settings for assisting performance largely in the context of the entire school, as well as to the persistence of recitation in schools. Despite this, however, the ground for their claim can be explicated in terms of responsive assistance and internalization.

As noted in the preceding section, in Stage 1 of the ZPD, adult assistance is contingent upon and responsive to the child’s level of performance, and hence, in this stage, the continual adjustments of the levels and amounts of adult assistance are “responsive to the child’s level of performance and perceived need” (Tharp & Gallimore, 1988, p. 40, italics in original). Thus, during the early periods in Stage I, assistance may be frequent and elaborate, but, later it occurs less often and is truncated. If truncated

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6 This is apparently because their theory of teaching, and hence IC, is part of their larger theory of education, which consists of theories of teaching, schooling, and literacy. What should be noted, however, is that the theory of teaching is the core component of the larger education theory in that the teaching theory, particularly the notion of assisting performance in the theory, provides a basis for the other components of the education theory.
guidance fails, the adult may provide additional assistance. In this type of teaching, careful and continuous assessments of the child’s current abilities, relative to the ZPD and the developmental level, is a requirement for the teacher since only based upon such assessments, can the teacher provide responsive assistance appropriate to each individual student’s level of competence within the ZPD. Through this responsive interaction, skills and functions become internalized; that is, what was first social becomes psychological in the higher cognitive processes of each individual.

In view of this, it seems certain that what Tharp and Gallimore claim in their 1991 article is that because IC is considered to be the best means for providing responsive assistance through learners’ ZPDs, it is the critical form of assisting performance through the ZPD. In other words, while other forms of teaching, such as lectures and recitation, cannot effectively enable the teacher to provide assistance that is responsive to individual learners’ levels of performance and perceived needs in their ZPDs, IC can do so effectively, thereby facilitating the learners’ internalizations of skills and functions; hence, IC is the critical form of assisting performance through the learners’ ZPDs.

What needs be noted at the same time is that Tharp and Gallimore do not completely negate the assisting role of recitation and didactic teaching (e.g., lecturing) through the ZPD. As quoted above, they acknowledge that even lectures and recitation, among others, “are necessary elements of the assisting classroom” (Tharp & Gallimore, p. 4), although the critical form of assisting learners is Instructional Conversation. This point, also mentioned in Tharp & Gallimore (1988), provides a rationale for including in this study
an investigation of the relative effects of recitation vs. IC, both as types of “instructional scaffolds.”

The Instructional Conversation Model

While it was Tharp and Gallimore (1988, 1990, 1991) who first proffered Instructional Conversation within their larger theory of teaching (as well as within their theories of schooling and literacy; see Tharp & Gallimore, 1988), it was Claude Goldenberg who further developed the major concepts and principles of the originally proffered IC and finally completed the Instructional Conversation model. The so-called “instructional conversation model” is simply a presentation of 10 elements of IC, of which five are instructional elements and five are conversational elements. However, it faithfully reflects the theoretical concepts/principles and goals of the IC originally proffered by Tharp and Gallimore and hence reflects Vygotsky’s view of learning and development in the ZPD.

Tharp and Gallimore (1988) objects to using the term “scaffolding” on the ground that scaffolding suggests that the principal variations in adult actions are matters of quantity, rather than quality. They state that while the metaphor is appealing and has been of unusual importance to the study of child development, “the field has advanced to the point that a more differentiated concept can be developed” (p. 33). This apparently accounts for their consistent use of the term “assistance” in lieu of scaffolding. In this study, however, the term “scaffolding” or “scaffold” will be used, especially when referring to experimental and control treatments, i.e., IC, recitation, and traditional. These will be referred to as types of instructional scaffolds, more specifically, as types of post-reading instructional scaffolds. This is because the term scaffold[ing] has become a widely used term -- both in the literature and in the teaching profession -- to refer to assistance, help, or guidance in relation to the ZPD, as well as without regard to the ZPD (see Cazden, 2001).

Recently, Claude Goldenberg has tended to capitalize the initials in the phrase “instructional conversation,” thus rendering it “Instructional Conversation” (e.g., Saunders & Goldenberg, 2007). In this paper, I am following this new convention. Given that quite a number of researchers have used the term “instructional conversation” with lower-case “i” and “c” to refer informally to any kind of conversation-like or discussion/conversation-based form/type of teaching, it seems appropriate to capitalize the initials and hence to make it a proper noun phrase when the intention is to refer specifically to Tharp and Gallimore’s (1988, 1990, 1991) and Goldenberg’s (1991, 1992/1993) major, theoretically based line of instructional conversation.
For example, before presenting the model, Goldenberg (1991, 1992/1993) makes clear that the two broad goals of IC is conceptual and linguistic development. This coincides with what Tharp and Gallimore indicated as the two goals of IC (see Tharp & Gallimore, 1988). Also, we can see that the notions of responsive assistance and Vygotsky’s ZPD are well represented in the IC elements presented in the model. In fact, Goldenberg explicitly addresses Vygotsky’s ZPD after presenting the 10 IC elements.

Further, we can also see that the weaving metaphor, which Tharp and Gallimore (1988) used to introduce the notion of IC, is reflected in the model. The weaving metaphor, which portrays IC as “[d]iscourse, in which teacher and students weave together spoken and written language with previous understanding” (Tharp & Gallimore, 1988, p. 111) is also briefly touched upon by Goldenberg before presenting the 10 elements.

As a final, and important, example, Goldenberg, before presenting the model, further elaborates on Tharp and Gallimore’s (1991) previous explication of the seeming paradox involved in the term “instructional conversation”:

The concept itself may be a paradox; Instruction and conversation may appear contrary, the former implying authority and planning, the latter equality and responsiveness. The task of teaching is to resolve this paradox. To truly teach, one must converse; to truly converse is to teach. (Tharp & Gallimore, 1991, p. 4; see also Tharp & Gallimore, 1988, p. 111)

In relation to this paradox, Goldenberg (1991) states that “instructional conversations are instructional in intent” on the one hand – i.e., “they are designed to promote learning” – and “conversational in quality on the other hand” – i.e., “they appear to be natural and
spontaneous language interactions, free from the didactic characteristics normally associated with formal teaching” (p. 3).

All these examples illustrate that the IC model developed by Goldenberg (1991, 1992/1993) is a reflection of the overall construct of the IC originally proffered by Tharp and Gallimore (1988, 1990, 1991) and hence also a reflection of Vygotsky’s view of learning and development in the ZPD, upon which Tharp and Gallimore’s IC construct is based. Now, given both the instructional and conversational aspects of IC, what would be the specific elements that constitute IC? Before providing the elements, it is necessary to provide a general description of IC as described by Goldenberg (1991, 1992/1993). This is important because it offers an overall description of the IC elements, thus enabling us to gain an understanding of the elements as a whole. Goldenberg provides a general description (or the general characteristics) of IC as follows:

On the surface, an instructional conversation is simply an excellent discussion by a teacher and a group of students. … [Such a discussion] is, first, interesting and engaging. It is about an idea or a concept that has meaning and relevance for students. It has a focus that, while it might shift as the discussion evolves, remains discernible throughout. There is a high level of participation, without undue domination by any one individual, particularly the teacher. Students engage in extended discussions – conversations—with the teacher and among themselves. Teachers and students are responsive to what others say, so that each statement or contribution builds upon, challenges, or extends a previous one. Topics are picked up, developed, elaborated.

9 Goldenberg (1991) acknowledges that the model also draws on schema theory and research on reading comprehension instruction. However, the model is largely, and essentially, a reflection of the IC construct previously offered by Tharp and Gallimore (1988, 1990, 1991) and hence also a reflection of Vygotsky’s view of learning and development in the ZPD.
Both teacher and students present provocative ideas or experiences, to which others respond. Strategically, the teacher (or discussion leader) questions, prods, challenges, coaxes – or keeps quiet. He or she clarifies and instructs when necessary, but does so efficiently, without wasting time or words. The teacher assures that the discussion proceeds at an appropriate pace – neither too fast to prohibit the development of ideas, not too slowly to maintain interest and momentum. The teacher knows when to bear down to draw out a student’s ideas and when to ease up, allowing thought and reflection to take over. Perhaps most important, the teacher manages to keep everyone engaged in a substantive and extended conversation, weaving individual participants’ comments into a larger tapestry of meaning. (Goldenberg, 1991, pp. 3-4; Goldenberg, 1992/1993, p. 318)

Moving beyond the general description of IC provided above, Goldenberg (1991) presents ten constituent elements of IC. Table 1, from Goldenberg (1991), shows the list of IC elements and their brief descriptions, which Goldenberg refers to as the “instructional conversation model” or “IC model.”

*Table 1. Elements of Instructional Conversation*

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<thead>
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<th>ELEMENTS OF INSTRUCTIONAL CONVERSATION</th>
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<tr>
<td><strong>INSTRUCTIONAL ELEMENTS</strong></td>
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<tr>
<td>1. <strong>Thematic Focus.</strong> The teacher selects a theme or idea to serve as a starting point to focus the discussion and has a general plan for how the theme will unfold, including how to “chunk” the text to permit optimal exploration of the theme.</td>
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<tr>
<td>2. <strong>Activation and use of background and relevant schemata.</strong> The teacher either “hooks into” or provides students with pertinent background knowledge and relevant schemata necessary for understanding a text. Background knowledge and schemata are then woven into the discussion that follows.</td>
</tr>
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3. **Direct Teaching.** When necessary, the teacher provides direct teaching of a skill or concept.

4. **Promotion of more complex language and expression.** The teacher elicits more extended student contributions by using a variety of elicitation techniques, for example, invitations to expand (“Tell me more about ____”), questions (“What do you mean by ____?”), restatements (“In other words, ____”), and pauses.

5. **Promotion of bases for statements or positions.** The teacher promotes students’ use of text, pictures, and reasoning to support an argument or position. Without overwhelming students, the teacher probes for the bases of students’ statements: “How do you know?” “What makes you think that?” “Show us where it says __.”

**CONVERSATIONAL ELEMENTS**

6. **Few “known-answer” questions.** Much of the discussion centers on questions and answers for which there might be more than one correct answer.

7. **Responsiveness to student contributions.** While having an initial plan and maintaining the focus and coherence of the discussion, the teacher is also responsive to students’ statements and the opportunities they provide.

8. **Connected discourse.** The discussion is characterized by multiple, interactive, connected turns; succeeding utterances build upon and extend previous ones.

9. **A challenging, but non-threatening atmosphere.** The teacher creates a “zone of proximal development,” where a challenging atmosphere is balanced by a positive affective climate. The teacher is more collaborator than evaluator and creates an atmosphere that challenges students and allows them to negotiate and construct the meaning of the text.

10. **General participation, including self-selected turns.** The teacher encourages general participation among students. The teacher does not hold exclusive right to determine who talks, and students are encouraged to volunteer or otherwise influence the selection of speaking turns.

(from Goldenberg, 1991, pp. 6-7)
Sociocognitive Approaches to CALL and Task-based Language Teaching

In this section, an attempt will be made to situate task-based language teaching within the most recent paradigm of sociocognitive approaches to CALL. The purpose of such an attempt is to address the WebQuest as a task-based language teaching/lesson format within this sociocognitive CALL paradigm. This will be the focus of the next section. In this section, I will first provide a brief overview of the history of shifting perspectives on language learning and teaching in general and on CALL in particular. This review will provide a basis for situating task-based language teaching within the sociocognitive CALL paradigm in the subsequent subsection.

The Histories of Approaches to Language Learning and Teaching and to CALL

The history of approaches to computer-assisted language learning (CALL) has paralleled that of approaches to language learning and teaching in general (Kern & Warschauer, 2000; Warschauer, 2004). For the first half of the twentieth century, various structural methods of language teaching were developed, culminating in the audiolingual method, which was dominant in the United States from the 1940s through the 1960s and is still used for second and foreign language teaching around the world (Celce-Murcia, 2001; Kern & Warschauer, 2000; Williams & Burden, 1997). Drawing on behaviorist theory of learning (Skinner, 1957; Watson, 1924), structural methodologists viewed language learning as formation of a set of mechanical habits and thus saturated language learners with pattern drills/practice, dialogues, and choral repetitions designed to condition them to produce correct responses to linguistic stimuli (Ellis, 1985; Kern & Warschauer, 2000; Williams & Burden, 1997). In the early 1960s, behaviorist view of language learning, and hence the structural, audiolingual method, was harshly attacked by
Noam Chomsky, who asserted that the behaviorist notion of language learning as habit formation through stimulus-response or stimulus-response-reinforcement cannot account for the creative use of language by individuals and that the development of an individual’s grammatical system is guided by innate cognitive structures (Ellis, 1985). Based upon his theoretical assertions, language learning came to be viewed as an active process of constructing knowledge, and this view represented a cognitive/constructivist perspective on language learning (Kern & Warschauer, 2000). In the language teaching world, following Chomsky’s (1957, 1959, 1965) theory, there was a shift in emphasis toward fostering learners’ mental construction of a second language system.

In reaction to Chomsky’s (1965) mentalistic characterization of linguistic competence, Hymes (1971) proposed the term “communicative competence” to emphasize the use of language in social context, or the observance of the social appropriateness of language use (Savignon, 2001). Hymes, as well as the British linguist Michael Halliday, whose notion of “meaning potential” (Halliday, 1978) may be seen as the equivalent of that of Hymes’s communicative competence, viewed language not just as a private, “in the head” affair but rather as a socially constructed phenomenon (Kern & Warschauer, 2000). During the 1980s, the notion of communicative competence advanced by Hymes (1971, 1972) exerted a significant influence on the language teaching profession. What needed to be taught was no longer just linguistic competence but also sociolinguistic competence, discourse competence, and strategic competence (Canale & Swain, 1980; Canale, 1983, as cited in Kern & Warschauer, 2000). From a sociocognitive perspective, learning was viewed not just in terms of changes in individuals’ cognitive structures but also in terms of the social structure of learners’
discourse and activity; that is, “cognitive and social dimensions overlap in a dialectal, co-
constitutive relationship” (Kern & Warschauer, 2000, p. 5). From this perspective, 
language teaching was viewed not just in terms of providing comprehensive input (the 
purpose of which was to provide individuals with an opportunity to mentally construct 
the grammar of a second/foreign language system through exposure to extensive natural 
data), but rather as “helping students enter into the kinds of authentic social discourse 
situations and discourse communities that they would later encounter outside the 
classroom” (Kern & Warschauer, 2000, p. 5). Many saw this to be best achieved through 
task-based language teaching, while others emphasized content-based instruction (Kern 
& Warschauer, 2000).

These shifting perspectives on language learning and teaching, i.e., from structural to 
cognitive/constructivist to sociocognitive perspectives, have been well reflected in 
approaches to CALL. The first phase of CALL pedagogy, which Kern and Warschauer 
(2000) refer to as “structural approaches to CALL,” was congruent with the structural 
methods of language teaching (Kern & Warschauer, 2000; Warschauer, 2004). In this 
phase, CALL primarily involved use of drill and practice programs, grammar and 
vocabulary tutorials, and language testing programs. However, as behaviorist approaches 
to language learning and teaching gave way to cognitive/constructivist approaches, 
CALL approaches accordingly shifted to “cognitive/constructivist approaches to CALL” 
(Kern & Warschauer, 2000). In this phase of CALL, language learners engaged in 
constructing new knowledge primarily through explorations of simulated environments. 
Finally, sociocognitive approaches to CALL, the third and final phase, emerged, and 
these approaches currently serve as the most popular pedagogical paradigm in CALL. As
Kern and Warschauer (2000) state, sociocognitive approaches to CALL shift the dynamic from learners’ interaction *with* computers to interaction with other humans (e.g., interlocutors, readers, or writers) *via* the computer. Sociocognitive perspectives on language learning and teaching, along with the technological development of computer networking, provided the basis for this new approach to CALL.

_Situating Task-based Language Teaching within the Paradigm of Sociocognitive Approaches to CALL_

In this last, and current, era of CALL, computer-mediated communication (CMC) and the World Wide Web in the computer networking environment have widely been considered to be excellent tools for sociocognitive language learning and teaching. The World Wide Web offers an extensive array of authentic materials with which students can engage in a variety of authentic language learning activities, while CMC allows languages learners to communicate with other learners, the teacher, or native speakers of the target language either synchronously (i.e., in real time, or simultaneously) or asynchronously (i.e., in delayed time, or not simultaneously).

This shows that both CMC and the World Wide Web can serve as ideal tools for “helping students enter into the kinds of authentic social discourse situations and discourse communities that they would later encounter outside the classroom” (Kern & Warschauer, 2000, p. 5), which, as indicated earlier, is the essence of sociocognitive perspective on language teaching. Then, given that, as indicated earlier, helping language students enter into such kinds of authentic discourse situations and discourse communities is widely seen to be best achieved through task-based language teaching (Kern and Warschauer, 2000), it follows that task-based language teaching with CMC
and/or World Wide Web technologies constitutes a crucial area within the currently popular paradigm of sociocognitive approaches to CALL.

Also, when viewed in connection with communicative language teaching (CLT), task-based language teaching can clearly be situated within the sociocognitive paradigm. As will be discussed in a later section, task-based language teaching constitutes CLT, more precisely, a strong version of CLT (Ellis, 2003). Since CLT draws on Halliday’s functional model of language and Hymes’ theory of communicative competence (see Ellis, 2003; Savignon, 2001), it can be seen as belonging to the sociocognitive approaches to language learning and teaching as addressed by Kern and Warschauer (2000). In fact, although Kern and Warschauer did not use the name “CLT” in their account of the sociocognitive approaches, they clearly mentioned the components of communicative competence, such as sociolinguistic competence, discourse competence, and strategic competence, which have been advanced by CLT theorists in relation to language teaching (and learning) (see, for example, Savignon, 2001). Then, given that CLT belongs to the category of the sociocognitive approaches, it follows that task-based language teaching, which is a type of CLT, can clearly be situated within the paradigm of sociocognitive language teaching and learning. Therefore, when task-based language teaching involves use of computer networking (e.g. use of CMC or World Wide Web technology), it can be located within the sociocognitive CALL paradigm.

Finally, above all, the key ground for situating task-based language teaching within the sociocognitive CALL paradigm is the authenticity of all tasks used in task-based language teaching. As Ellis (2003) noted, authenticity is an essential, critical feature of a task in task-based language teaching. Thus, a task in task-based language teaching
manifests at least “some sort of relationship to the real world” and it “involves real-world processes of language use” (Ellis, 2003, p. 9). This precisely reflects the sociocognitive view of language teaching as “helping students enter into the kinds of authentic social discourse situations and discourse communities that they would later encounter outside the classroom” (Kern & Warschauer, 2000, p. 5). In light of this, the illustration above of CMC and the World Wide Web serving as excellent tools for sociocognitive language learning and teaching can be construed as an illustration of authentic learning opportunities that those most recent technologies provide.

A WebQuest as a Lesson Format for Task-based Language Teaching within the Sociocognitive CALL Paradigm

Now, through a review of the relevant literature and discussion in the preceding section, I have situated task-based language teaching within the paradigm of sociocognitive approaches to CALL. Building upon this, in this section, I will develop a view of a WebQuest as a lesson format for task-based language teaching within the sociocognitive CALL paradigm. To this end, I will first review some conceptual literatures on WebQuests and task-based language teaching. This review will provide a basis for developing a view of a WebQuest as a lesson format for task-based language teaching within the sociocognitive CALL paradigm.

What is a WebQuest?

Critical Features, Components, and Scaffolding

Bernie Dodge, who developed the WebQuest model with Tom March in 1995, initially defined a WebQuest as “an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet” (Dodge,
1995, p. 10). Then, a year later, Dodge (1996), referring to a WebQuest as a lesson format, offered a slightly modified definition: A WebQuest is a “lesson format … [or] an activity of guided inquiry in which learners are given a task that requires Internet access to complete” (p. 233). Most recently, on his WebQuest organization Website, Dodge (2007) provides this definition: “A WebQuest is an inquiry-oriented lesson format in which most or all of the information that learners work with comes from the web” (para. 3). Given all these, a WebQuest can be understood as an inquiry-oriented lesson format or activity in which learners are given a task that involves them in interacting with information (textual or nontextual) on the World Wide Web.

In addressing the higher level thinking involved in a WebQuest, Dodge (2001) emphasizes that “WebQuests are designed … to support learners’ thinking at the levels of analysis, synthesis, and evaluation” (p. 7). Learners’ engagement in this process of higher level thinking, often referred to as “transformation of information,” is the main critical feature of a WebQuest (Dodge, 2001; March, 2003). According to March (2003), in a WebQuest, newly acquired information (input) must undergo a transformation into new understanding (outcomes). Dodge (2001) also stresses the importance of transformation processes in WebQuest lessons, such as comparing and contrasting.

As a “structured” lesson format, a WebQuest has its own required components. Dodge (1995, 1996) presents the six essential components, or what he calls the “critical attributes,” of a WebQuest: (a) an introduction, (b) a task, (c) a set of information sources, (d) a description of the process for accomplishing the task, (d) guidance, or learning advice, and (e) a conclusion. In practice, information sources and guidance are usually embedded in the process section of WebQuest sites on the Web, rendering the sequence
of a typical WebQuest lesson introduction – task – process – conclusion (see sample WebQuests in Dodge, 2007).

While all of these are integral parts of a WebQuest, guidance, or scaffolding, is considered to be at the heart of the WebQuest model (March, 2003). Scaffolds are “temporary frameworks to support student performance beyond their capacities” (Cho & Jonassen, as cited in March, 2003, p. 42). Dodge (2001) stresses that a great WebQuest builds scaffolding into its process so that the level of what students can produce can be raised. He then presents three types of scaffolds associated with WebQuests: reception scaffolds, transformation scaffolds, and production scaffolds. A reception scaffold, according to Dodge, is help provided to assist learners in garnering information from given sources. A transformation scaffold, on the other hand, helps learners “transform what they read into some new form” (Dodge, 2001, p. 58). And a production scaffold is intended to assist learners in creating things, i.e., producing outputs (Dodge, 2001).

Dodge (2001) provides examples of reception and production scaffolds: Examples of reception scaffolds include observation guides, tips on how to conduct interviews, and online glossaries and dictionaries, while examples of production scaffolds include templates, prompted writing guides, and multimedia elements and structures. As for transformation scaffolds, however, he does not give its examples and simply state that “[learners] might benefit by explicit help on such processes as comparing and contrasting, finding patterns among a number of similar objects of study, brainstorming, inductive reasoning, and decision making” (p. 58). The processes enumerated here are all higher-level thinking processes. Since, as mentioned earlier, transformation of information involves learners’ engagement in the process of higher level thinking, it follows that
transformation scaffolds involves providing help with such higher level thinking processes as those enumerated above. While Dodge does not provide examples of transformation scaffolds, transformation, as indicated earlier, is the main critical feature of a WebQuest (Dodge, 2001; March, 2003). Hence, all WebQuest tasks require higher level thinking on the part of learners, as we will see next.

Tasks in WebQuests

The task is the single most important part of a WebQuest (Dodge, 2001, 2002, 2007). As Dodge (2007) makes clear, a real WebQuest is wrapped around a doable and interesting task and requires higher level thinking, such as analysis, synthesis, and evaluation. From this, it follows that the task in a WebQuest should be doable and interesting, and should engage learners in higher level thinking (Dodge, 2001). A doable and interesting task is “ideally a scaled down version of things that adults do as citizens or workers” (Dodge, 2007, para.2); that is, it is what March (2003) calls an “authentic task.” An engaging task is a task that that goes beyond retelling and engages learners in higher level thinking (Dodge, 2001). In short, the task in a real WebQuest is authentic and requires higher level thinking on the part of learners.

Dodge (2002) provides a taxonomy of WebQuest tasks called “WebQuest taskonomy.” The taxonomy categorizes and describes common WebQuest task formats used by teachers. Before presenting those categories of WebQuest tasks, Dodge stresses that “[a] well designed task is doable and engaging, and elicits thinking in learners that goes beyond rote comprehension” (para. 1). This, as discussed in the preceding paragraph, is the key feature of a real WebQuest task. He then presents the following categories of WebQuest tasks: (a) retelling tasks, (b) compilation tasks, (c) mystery tasks,
(d) journalistic tasks, (e) design tasks, (f) creative product tasks, (g) consensus building tasks, (h) persuasion tasks, (i) self-knowledge tasks, (j) analytical tasks, (k) judgment tasks, and (l) scientific tasks.

These categories, according to Dodge (2002), have been presented in no particular order other than the placement of retelling tasks first because of their simplicity and borderline status as the foundation of a real WebQuest. He further states that the task in a given WebQuest can possibly combine elements of two or more of these task categories. Finally, and importantly, he strongly recommends that WebQuest designers go beyond the retelling task, as it does not engage learners in higher level thinking.

What is Task-based Language Learning and Teaching?

Tasks in Task-based Language Learning and Teaching

Tasks hold a central place in both current second/foreign language acquisition research and language pedagogy (Ellis, 2003). Many of the publications relating to task-based language learning and teaching have been devoted at least partly to an attempt at defining a “task” (e.g., Breen, 1989; Bygate, Skehan, & Swain, 2001; Ellis, 2000, 2003; Long, 1985; Prabhu, 1987; Nunan, 1989, 2006; Oxford, 2006; Skehan, 1996). Apparently, a proper understanding of the notion of task-based language learning and teaching presupposes a clear understanding of what exactly a task is.

The existence of a plethora of definitions of a task has made it difficult for the fields of both second/foreign language acquisition research and language pedagogy to reach complete agreement as to what constitutes a task. Amid the lack of complete consensus, Ellis (2003) proposed a comprehensive, coherent definition of a task, which is now most widely cited in the literature. Given that Ellis’ definition of a task is a result of a
synthesis of several critical features of a task identified from a wide range of definitions in both the second/foreign language acquisition research and language pedagogy literatures, a review of those features should help the reader to better understand what constitutes a task in task-based language learning and teaching as well as Ellis’ definition of a task per se.

The critical features of a task, as presented by Ellis (2003), are as follows:

1. A task is a workplan.
2. A task involves a primary focus on meaning.
3. A task involves real-world processes of language use.
4. A task can involve any of the four language skills.
5. A task engages cognitive processes.
6. A task has a clearly defined communicative outcome. (pp. 9-10)

Ellis notes that in judging whether or not an activity is a task, some of these criteria are more important than others. According to him, the key criterion is 2 (i.e., a primary focus on meaning), and also important are 3 and 6 (i.e., real-world processes of language use and a clearly defined communicative outcome, respectively). He states that in contrast to these criteria, 1, 5, and 6 seem to apply to all kinds of teaching materials, including exercises. Despite these differences in importance, however, all these six constitute the critical features of a task.

Ellis (2003) identified these features based upon six dimensions addressed by a range of definitions in the literature. The six dimensions were (a) the scope of a task, (b) the perspective from which a task is viewed, (c) the authenticity of a task, (d) the language skills required to perform a task, (e) the psychological processes involved in task
performance, and (f) the outcome of a task. The three most important features (or criteria) mentioned in the preceding paragraph, 2, 3, and 6, relate to the dimensions of the (a) scope, (c) authenticity, and (f) outcome of a task, respectively. The rest of the features, 1, 4, and 5, relate to the (b) perspective, (d) language skills, and (e) psychological processes. I will review in some detail Ellis’s discussion of the three dimensions relating to the three most important features and then review his discussion of the rest as briefly as possible.

In his discussion of the scope of a task, Ellis (2003) first makes it clear that “there seems little sense in extending the term to include language-free activities” (p. 2), thereby rejecting Long’s inclusion in his definition of the kinds of tasks that can be performed without using language, e.g., painting a fence, and favoring instead Richards, Platt, and Weber’s (1985) and Nunan’s (1985) definitions of a task as an activity that necessarily involves language. This is grounded in his belief that the overall goal of tasks, in both research and teaching, is to elicit language use. Then, Ellis addresses a more central issue pertaining to the scope of a task, i.e., the issue of whether the term ‘task’ should be restricted to activities where the learners’ attention is primarily focused on meaning or should include any kind of language activity including those designed to get learners to display their knowledge of what is correct usage. Regarding this issue, Ellis agrees to Long’s (1985), Richard, Platt, and Weber’s (1985), Nunan’s (1989), and Skehan’s (1996) narrower definitions of task which restrict the use of the term to activities where meaning is primary, hence rejecting Breen’s (1989) adoption of a broader definition that incorporates any kind of language activity, including “exercisers.” Ellis stresses that “‘[t]asks’ are activities that call for primarily meaning-focused language use, [whereas]
‘exercises’ are activities that call for primarily form-focused language use” (p. 3).

Following this, he addresses another key difference between a task and an exercise that the distinction between “meaning-focused” and “form-focused” is also intended to capture. Since his statement regarding this difference is important for a proper understanding of the relationship between CLT and task-based language teaching, which will be discussed in the next section, I have quoted the key part of his statement about the difference as follows:

A ‘task’ requires the participants to function primarily as ‘language users’ in the sense that they must employ the same kinds of communicative processes as those involved in real world activities. Thus, any learning that takes place is incidental. In contrast, an ‘exercise’ requires the participants to function primarily as ‘learners’; here learning is intentional” (p. 3).

Authenticity, a key dimension that relates to one of the three most important features of a task, concerns whether a task needs to correspond to some real-world activity. Regarding this dimension, Ellis (2003) views tasks that manifest some sort of relationship to the real world as authentic tasks, so long as the processes of language use that result from performing such tasks reflect those that occur in real-world communication. In other words, he regards as authentic tasks not only real-world tasks, such as making an airline reservation or filling out a form, but also artificial tasks that have some sort of relationship to the real world, such as determining whether two pictures are the same or different, if the processes of language use that arise from performing such tasks, e.g., asking and answering questions or dealing with misunderstandings, reflect those that occur in real-world communication. Communication, while it is often associated with
dialogic language use, can also involve monologic language use, as long as its focus is on meaning conveyance or interpretation; for example, in the course of writing, the writer engages in communication with the potential reader. Ellis’s view of task authenticity is congruent with that held by Skehan (1996).

Outcome is another key dimension addressed by many of the definitions in the literature. Outcome refers to what the learners arrive at when they have completed the task. Most of the definitions that Ellis (2003) reviewed concur that tasks result in some clear outcome, other than simply the use of language; that is, “the outcome of a task can be judged in terms of content” (p. 8, italics added). Thus, as Ellis exemplifies, a narrative task based on pictures can be judged according to whether the learner have told the story successfully, and, likewise, a spot-the-difference task involving pictures can be evaluated according to whether the learners have successfully identified all the differences. In these examples, the outcomes would be the story and the list of differences; in other works, an outcome is the product that results from completing the task. In a writing task, the outcome would be the written work/piece produced as a result of completing the task.

Perspective refers to “whether a task is seen from the task designer’s or the participants’ point of view” (Ellis, 2003, p. 5). From the task designer’s perspective, a task is seen a workplan, whereas from the participants’ perspective, a task is seen as a process. This leads to the distinction between “task-as-workplan” and “task-as-process” (Breen, 1989, as cited in Ellis, 2003). The task-as-work-plan may or may not match the task-as-process, or the learner’s actual performance of the task. If a task is successful, it actually results in meaning-focused language, as intended by the workplan. Ellis adopts
the task designer’s perspective, following the trend identified in most of the definitions in the literature.

Since most of the definitions that Ellis (2003) reviewed did not explicitly address what language skills are involved in performing tasks, Ellis, based upon his inference from a number of definitions and their examples, concludes that “task” refers to activities involving any of the four language skills. In addition, he indicates that “[a] task may require dialogic or monologic language use” (p. 10). Thus, speaking, listening, reading or writing activities, whether they are designed to be performed individually or in groups/pairs, all constitute “tasks.”

Tasks clearly involve cognitive processes. Among the cognitive processes that Ellis (2003) identified from the definitions that he reviewed are selecting, reasoning, classifying, sequencing information, and transforming information. Ellis states that one of the limitations of both second language acquisition research and language pedagogy is that insufficient attention has been paid to the cognitive dimension of tasks, even though these cognitive processes do influence (though not determine) the choice of language.

These six dimensions served as a framework for Ellis’s (2003) identification of the six critical features of a task presented earlier. Ellis incorporated all of these six features into the following definition of a task:

A task is a workplan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed. To this end, it requires them to give primary attention to meaning and to make use of their own linguistic resources, although the design of the task may predispose them to choose particular forms. A
task is intended to result in language use that bears resemblance, direct or indirect, to the way language is used in the real world. Like other language activities, a task can engage productive or receptive, and oral or written skills, and also various cognitive processes (p. 16).

*Task-based Language Teaching and Communicative Language Teaching*

Ellis (2003) notes that task-based language teaching constitutes a strong version of communicative language teaching (CLT). A number of other influential scholars in task-based language teaching and learning also view task-based language teaching as a version or form of CLT. For example, Skehan (1996) describes it as “a current vogue in communicative language teaching” (p. 58). Nunan (1989, 2006) also discusses task-based language teaching in the context of CLT.

Now, granting that task-based language teaching constitutes a strong version of CLT, how would CLT be viewed by Rod Ellis, the key figure in task-based language teaching? In his discussion of CLT, Ellis (2003) first states that “CLT aims to develop the ability of learners to use language in real communication” (p. 27). Following this, he describes CLT in comparison with earlier methods, such as the audiolingual method:

[W]hereas the earlier methods were based on a view of language as a set of linguistic systems (phonological, lexical, and grammatical), CLT drew on a functional model of language (Halliday’s) and a theory of communicative competence (Hymes’). To adopt Widdowson’s (1978) terms, whereas structural approaches to teaching focus on *usage*, i.e., the ability to use language correctly, communicative language teaching is directed at *use*, i.e., the ability to use language meaningfully and appropriately in the construction of discourse” (pp. 27-28, italics in original).
This is an important statement in two respects. First, it accurately captures the fundamental differences between traditional methods and CLT, as have been addressed by key CLT theorists, such as Savignon (2001). Second, importantly to this study, the first half of the statement, particularly, the statement that “CLT drew on a functional model of language (Halliday’s) and a theory of communicative competence (Hymes’)” provides an important ground for this study’s attempt to situate task-based language teaching within the paradigm of sociocognitive approaches to CALL.

Ellis (2003) distinguishes a “weak” and a “strong” version of CLT, based upon Howatt’s (1984) work. In a weak version of CLT, instead of the structural properties of language, learners are taught how to realize specific general notions, such as “duration” and possibility, and language functions, such as “inviting” and “apologizing.” Then, this essentially means that in the weak version, language learners are taught with notional/functional syllabuses proposed by Wilkins (1976). This discussion of a weak version of CLT by Ellis is congruent with Savignon’s (2001) discussion, although she did not use the term “weak version.” However, Ellis additionally addresses the point that the weak version does not involve a radical departure from earlier methods in that it is based upon the assumption that the components of communicative competence can be identified and systematically taught.

In contrast to the weak version, a strong version of CLT claims that “language is acquired through communication” (Howatt, 1984, p. 279, as cited in Ellis, 2003). That is, “learners … discover the [structural] system [of a language] in the process of learning how to communicate” (Ellis, 2003, p. 28). Thus, “the strong version of CLT … involves providing learners with opportunities to experience how language used in
communication” (Ellis, 2003, p. 28). Here, we see a crucial commonality shared by the strong version of CLT and task-based language teaching. While discussing the scope of a task in task-based language learning and teaching in the preceding section, I highlighted a key difference between a task and an exercise in terms of “meaning-focused” and “form-focused” by quoting the following from Ellis (2003):

A ‘task’ requires the participants to function primarily as ‘language users’ in the sense that they must employ the same kinds of communicative processes as those involved in real world activities. Thus, any learning that takes place is incidental. (p. 3)

From this statement about task-based teaching/learning and the above statement about the strong version of CLT, we can see that CLT and task-based language teaching/learning emphasize the same, that is, meaningful use of language through communication, with learning taking place as a result of it. Now it becomes quite clear why Ellis (2003), among others, view task-based language teaching as a type of the strong version CLT.

Related to the distinction between a weak and a strong version of CLT is the distinction between task-supported language teaching and task-based language teaching (Ellis, 2003). In contrast to task-based language teaching, where tasks are treated as units of teaching in their own right and whole courses are designed around them, task-supported language teaching involves tasks being simply incorporated into traditional language-based approaches to teaching. According to Ellis, approaches to language teaching have traditionally involved the instructional sequence of so-called PPP, i.e., “present,” “practice,” and “production.” (see also Oxford, 2006). That is, a language item is first presented to the learners by means of exercise, this item is then practiced in a controlled manner using exercises, and, finally, opportunities for using the item in free
language production are provided. In this final “production” stage, tasks have been employed.

Ellis (2003) sees a weak version of CLT (as well as structural methods of teaching) as a type of task-supported language learning, not task-based language learning. This is because while its syllabus may be communicative, i.e., a list of notions and functions, its methodology is traditional and non-communicative, i.e., PPP. Unlike the weak version of CLT, in task-based language teaching, which is a type of strong version of CLT, both the syllabus and the methodology are communicative. I will now turn to a discussion of the syllabus and methodology of task-based language teaching.

Syllabus and Methodology in Task-based Language Teaching

In their discussion of task-based language teaching, Levy and Stockwell (2006) referred to task-based language teaching as a teaching theory and centered their discussion on the methodological aspects of this approach. Many influential scholars in the area of task-based language teaching (e.g., Ellis, 2000, 2003; Nunan, 1989; Skehan, 1996), however, view task-based language teaching as encompassing not only methodology but also syllabus. Given the extensive discussion of “tasks” per se in the task-based language teaching literature, the syllabus dimension of the approach may be at least as important as its methodological dimension.

Ellis (2003) states that the task-based approach to teaching appears to blur the traditional distinction between syllabus and methodology. As Nunan (1989) indicated, a task-based curriculum involves an integrated set of processes involving, among others, the specification of both what to teach (i.e., the syllabus or content) and how to teach (i.e., methodology). Granting this, it could be argued, as Kumaravadivelu (1993, as cited in
Ellis, 2003) did, that methodology becomes central since no attempt is made to specify what the learners will learn. In response to a number of arguments regarding this issue, Ellis clearly states that he draws a distinction between the design of the syllabus and the choice of methodology in task-based language teaching, as Skehan (1996) does. What needs to be clarified at this point is that both Ellis and Nunan use the term “curriculum” to include both syllabus and methodology. They often refer to task-based language teaching as a curriculum. To them, curriculum is not just content or what is taught (i.e., not just what they call syllabus), but rather it includes both content and methodology. Then, to use an expression often used outside the area of task-based language teaching, task-based language teaching is both curriculum and instructional concepts.\(^{10}\)

**Task-based language syllabuses.** A task-based syllabus contrasts with what Ellis (2003) calls a linguistic syllabus. A linguistic syllabus, which is traditional, consists of a graded list of linguistic items, particularly grammatical structures. This corresponds to what Wilkins (1976) called a “synthetic syllabus.” Notional/functional syllabus is an alternative approach to syllabus design proposed by Wilkins (1976), as discussed in the preceding section when discussing a weak version of CLT. Ellis, however, considers this to be essentially a linguistic syllabus as it still involves specifying the linguistic content to be taught. Thus, according to him, the shift from structural (or linguistic) to notional/functional syllabuses did not involve any radical rethinking about the basic type of syllabus.

Reappraisal of linguistic syllabuses arose for a number of reasons. Among the reasons were (a) that language learners were seen as improving little in their ability to

\(^{10}\) In fact, a number of curriculum specialists use the term “curriculum” to mean just what is taught or content, depending on their perspectives on curriculum. For space considerations, I am not going further.
communicate in an L2 despite years of instruction based on such syllabuses and (b) that research demonstrated that irrespective of what they were taught, learners followed their own mentally “built-in syllabus.” Proposals for task-based syllabuses, according to Ellis, ultimately arise out of the recognition that it was not possible to specify what a learner would learn in linguistic terms. Thus, as Prabhu (1987, as cited in Ellis, 2003) argued, “it was necessary to abandon the pre-selection of linguistic items in any form and instead specify the content of teaching in terms of holistic units of communication, i.e., tasks” (Ellis, 2003, p. 208). Given this statement, task-based syllabuses would then consist of tasks, and only tasks, without any specification of linguistic content for learners to learn. Indeed, Prabhu’s procedural syllabus, for example, which was the first task-based syllabus, consisted of a set of tasks, sequenced according to difficulty. In short, task-based syllabuses consist entirely of tasks, without a specification of linguistic content for students to learn.

A syllabus provides a blueprint for the development of the actual tasks to be used in the classroom. Thus, after a task-based syllabus is designed and subsequently constructed, individual tasks need to be designed so that they can be implemented in the classroom. In designing individual tasks for classroom use, as well as the larger syllabus, it is useful to be aware of the design features of a task offered by Ellis (2003). Also called a “framework for describing tasks,” the set of task design features is comprised of (a) goal, (b) input, (c) conditions, (d) procedures, and (e) predicted outcomes (product/process). Let us now turn to how individual tasks, or workplans, can be implemented in the classroom.
The Methodology of Task-based Language Teaching

Once a set of tasks have been sequenced and appropriate workplans for each task have been prepared, the next step is to make decisions regarding the methodological procedures for implementing the workplans (or tasks) in the classroom. Ellis (2003) discussed two types of procedures under the headings of lesson design and participatory structure.

Lesson design. A number of scholars have proposed a three-phase task-based teaching cycle which oppose the traditional presentation-practice-production (PPP) cycle (e.g., Prabhu, 1987; Skehan, 1996; Willis, 1996). While there are some variations in the titles of the three phases depending on individual scholars, all the three-phase models have a task (or main task) as its principal component, which is preceded by the pre-task phase and followed by the post-task phase. In brief, it is composed of pre-task – during task – post-task (see Ellis, 2003). As Ellis make clear, only the “during task” phase is obligatory in task-based teaching. Thus, a task-based lesson can consist of the students just performing a task. The pre-task or the post-task phase is non-obligatory. The scholars have proposed the three-phase cycle in an attempt to render the task performance maximally effective for language development.

As Ellis (2003) notes, in designing a task-based lesson, teachers can use the “pre-task – during task (i.e., task) – post-task” framework in a variety of ways. Minimally, the format of the lesson will consist of the during-task phase, that is, the task only, but it can also include either a pre-task or a post-task, or both of these. Once the basic structure of the lesson has been decided, specific options to be included in each phase of the lesson
can be decided. Ellis discusses a variety of options available to teachers for each phase (see Chapter 8).

**Participatory structure.** The participatory structure of a lesson refers to “the procedures that govern how the teacher’s and students’ contributions to the performance of the task are organized” (Ellis, 2003, p. 263). Broadly viewed, the types of participatory structure in a task-based lesson are either “individual,” i.e., each student works by him- or herself, or “social,” i.e., interaction occurs between the participants. In the case of the “social” participatory structure, a number of options are possible: (a) The teacher can conduct an activity with the whole class (teacher-whole class), (b) a student can take on the role of ‘teacher’ and perform the task with the rest of the class (student-teacher/other students), (c) or the students can interact among themselves in pairs or small groups (student-student).

Ellis points out an erroneous assumption associated with the participatory structure of a task-based lesson/teaching which has been held by a number of scholars and offers a clarification. Since this is an important point in relation to both this study and our understanding of the participatory structure of CLT lessons, I have quoted his statement as follows:

However, discussions of task-based teaching are often based on the assumption that the main task will be performed in pairs or small groups. For example, … However, this assumption is not justified. First, as we saw in Chapter 2, not all tasks are interactive; non-reciprocal tasks by definition do not require interaction between the task participants. Many reading and writing tasks, for example, need to be performed by the students working individually (Ellis, 2003, p. 263).
In fact, I briefly addressed this point in a different way while discussing the critical features of a task, specifically, when discussing the dimension of language skills, although I did not address it in terms of the participatory structure of a task lesson, but rather in terms of the critical features of a task. Ellis’s point is also important to our understanding of CLT. In her account of what CLT “is” and “is not,” Savignon (2001) clearly pointed out that CLT does not require pair or group work. Considering that task-based-language teaching constitutes a strong version of CLT, it is no wonder that task-based language teaching and CLT are congruent in this methodological aspect.

_Toward a View of a WebQuest as a Lesson Format for Task-based Language Teaching within the Sociocognitive CALL Paradigm_

In a previous section, I situated task-based language teaching within the paradigm of sociocognitive approaches to CALL. In this section, I will develop a view of a WebQuest as a lesson format for task-based language teaching with the sociocognitive CALL paradigm. The rationale for this endeavor stems from current lack of conceptual research on WebQuests in relation to language teaching approaches. The WebQuest, as developed by Bernie Dodge and Tom March, was designed to be used for content-area teaching, not language teaching. Therefore, if its use in language teaching is to be justified, it needs to find a place in the literature on language teaching. Although the TelenQuest (or LanguageQuest in English) project in Europe led to a development of the LQuest model (see Koenraad & Westhoff, 2003), the model is grounded on a synthesis of various concepts and principles from second language acquisition theories and cognitive psychology and hence does not address any particular teaching theory or approach. More importantly, from my view, an LQuest is not a true WebQuest because in that model, the
essence of a WebQuest, higher level thinking, is lost in favor of form-focused use of language, e.g., through the teacher’s or a communication partner’s elicitation of pushed output from students. Given this current situation, a framework is needed for this study to address true WebQuests in the context of language teaching. Thus, this section aims to develop a view of a WebQuest in relation to a language teaching approach.

**A WebQuest as a Task-based Lesson Format**

Whether used in the context of content-area teaching or language teaching, a WebQuest can clearly be seen as a lesson format. This is manifested in Dodge’s (1996, 2007) definitions of a WebQuest, as presented earlier in the section entitled “What is a WebQuest?” Further, a WebQuest is a lesson format in which learners are “given a task”; that is, as Dodge (1996) defines it, a WebQuest is “a lesson format … in which learners are given a task that requires Internet access to complete.” (p. 233). To underscore the task-based nature of a WebQuest, Dodge (2007) uses this expression: “A real WebQuest is *wrapped around a doable and interesting task*” (para. 2; italics added).

As Dodge’s (1996) definition of a WebQuest quoted above shows, the task in a WebQuest requires learners’ access to the Internet in order to complete the task. In relation to this, Dodge’s earliest and latest definitions of a WebQuest indicate that learners in a WebQuest access the Internet to interact or work with information on the World Wide Web: “A WebQuest is an inquiry-oriented lesson format in which most or all of the information that learners work with comes from the web” (Dodge, 2007, para.3). Or a WebQuest is “an inquiry-oriented activity in which some or all of the information

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11 To be precise, in an LQuest, attention to both form and meaning is emphasized. What needs to be noted, however, is that an LQuest activity does not involve transformation of input; thus, it does not address higher-level thinking.
that learners interact with comes from resources on the Internet” (Dodge, 1995, p. 10). In a WebQuest, this information that learners interact or work with serves as an “input” (March, 2003; Dodge, 1996). The input is transformed into an outcome through learners’ performance of a task.

Then, a WebQuest is a lesson format which involves a task, input, transformation, and outcome. Considering that the “task” in a WebQuest involves learners’ engagement in higher-level thinking, i.e., “transformation,” the essential process (or features) of a WebQuest can be visually represented as follows:

*Figure 2. Essential process/features of a WebQuest*

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Input  ⟷ Transformation (task)  ⟷ Outcome
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The box in the graphic is where newly acquired information (i.e., input) undergoes a transformation into a new understanding. The task in a WebQuest requires learners’ transformation of the input. This “transformation,” as noted earlier, is the main critical feature of a WebQuest (Dodge, 2001; March, 2003). The visual representation is intended to facilitate the reader’s understanding of the discussion that ensues in this section.

So far, it has been established that a WebQuest is a lesson format which involves a task, with the essential process/features of input, transformation, and outcome. Now we will see how a WebQuest can serve as a lesson format for task-based language teaching by comparing the characteristics of tasks in WebQuests with those in task-based language teaching and subsequently examining how a WebQuest can serve appropriately as a
lesson format for task-based language teaching in terms of lesson design and participatory structure.

Tasks in WebQuests and Task-based Language Teaching

The characteristics of a task in WebQuests well reflect the six critical features (or characteristics) of a task in task-based language teaching as presented by Ellis (2003). I will present each of the six features of a task in task-based language teaching and show how tasks in WebQuests and those in task-based language teaching share each of these features. As much of the discussion that ensues will be based on what was already presented in the preceding subsections, the reader is recommended to refer to those subsections for further details.

1. A task is a workplan. As Dodge (2001) noted, a task in WebQuests is “what we ask learners to do with information” (p. 9). This demonstrates that as in task-based language teaching, a task in WebQuests is “a plan for activity” (Ellis, 2003, p. 9). In other words, as in task-based language teaching, a task in WebQuests is seen from the task designer’s perspective, leading to the notion of task-as-workplan, rather than task-as-process. Additionally, considering that the design features of a task as offered by Ellis and a number of other scholars in task-based language teaching (e.g., Nunan, 1989; Wright, 1987) include “input” (or information) as an essential task design feature, WebQuests and task-based language teaching tasks also share the characteristic of use of “input” in task execution and performance.

2. A task involves a primary focus on meaning. This is one of the three most important critical features of a task in task-based language teaching (Ellis, 2003). The term “task” in task-based language teaching is restricted to activities where learners’
attention is primarily focused on meaning, and thus, a task does not include activities
designed to get learners to display their knowledge of what is correct usage. “Tasks”
contrast with “exercises” in that whereas the former call for primarily meaning-focused
language use, the latter call for primarily form-focused language use. Since a task in
task-based language teaching requires the participants to function primarily as language
users, any learning (of language forms) that takes place is incidental. This meaning-
focused nature of a task in task-based language teaching, addressed by Ellis, is in
congruence with the meaning-focused nature of a WebQuest task. Instead of engaging
learners in exercise-type activities, a task in WebQuests is designed to engage learners in
analyzing, synthesizing, and evaluating Web-based content into a new understanding. To
put it differently, a WebQuest task asks learners to interact with Web-based information
to meaningfully transform that information into a new form which is substantially
different from the original information (or input) that they accessed. A WebQuest task is
certainly not designed to get learners to display of their knowledge; any task designed in
such a way is not a WebQuest task. Indeed, Dodge (2001) asserts that a WebQuest is not
the vehicle for memorizing factual information for regurgitation purposes, because,
unlike in an earlier era, content is not stable in the current information era.

3. A task involves real-world processes of language use. This feature, which pertains
to the authenticity of a task, is also is one of the three most important critical features of a
 task in task-based language teaching (Ellis, 2003). In task-based language teaching, not
only real-world tasks (e.g., tasks that people carry out in day-to-day living) but also tasks
that manifest some sort of relationship to the real world are considered to be authentic, so
long as the processes of language use that arise from performing such tasks reflect those
that occur in real-world communication. In fact, the latter are more commonly used in
task-based language teaching, as well as task-based content-area teaching. Here,
communication can involve monologic language use, such as individual oral or written
performance, as in solo speaking or writing activities, as long as its focus is on meaning
conveyance or interpretation. WebQuest tasks presumably best reflect this particular
feature (i.e., authenticity) of a task of all the six features of a task in task-based language
teaching that Ellis presented. As Dodge (2007) asserted, a WebQuest is “wrapped around
a doable and interesting task that is ideally a scaled down version of things that adults do
as citizens or workers” (para. 2). Here, Dodge underscores that a WebQuest task engages
learners in doing the kinds of things that people outside the classroom, i.e., in the real
world, actually do. March (2003) also discusses the authenticity of a task as a critical
feature of a WebQuest. In WebQuests, the use of authentic materials (i.e., authentic
information or input) from the World Wide Web serves to facilitate the use of authentic
tasks. With authentic materials from the Web, learners engage in real-world or real-
world-like activities. In WebQuests, the processes of language use that arise from
performing tasks also reflect well those that occur in real-world communication. The
kind of language behavior that WebQuest tasks elicit corresponds to the kind of
communicative behavior that occurs in the real world. The various types of WebQuest
tasks from Dodge’ (2002) “WebQuest taskonomy” which I provided in a previous section
are all designed to engage learners in the kinds of activities that would actually do in the
real world, using communication processes that would actually occur in the real world, as
well as in higher-level thinking.
4. A task can involve any of the four language skills. Just like a task in task-based language teaching, a task in WebQuests involves any of the four language skills – i.e., speaking, listening, reading, and writing. In addition, a task in WebQuests, as in task-based language teaching, requires either dialogic or monologic language use.

5. A task engages cognitive processes. Ellis (2003) provides examples of the kinds of cognitive processes that tasks in task-based language teaching involve: “selecting, reasoning, classifying, sequencing information, and transforming information” (p. 7). WebQuest tasks can also engage learners in these cognitive processes, with the possible exception of “sequencing information,” depending on how learners sequence the information. If “transforming information” (which actually encompasses the preceding items except sequencing) is meant to involve all higher-level cognitive processes, such as analysis, synthesis, evaluation, and creativity, a task in task-based language teaching can be said to be congruent with a task in WebQuests in terms of this feature.

6. A task has a clearly defined communicative outcome. As represented in Figure 1, outcome is an essential feature of a WebQuest. A task in WebQuests requires learners to transform newly acquired information (i.e., input) into an outcome. Therefore, WebQuest tasks result in some clear outcome just as tasks in task-based language teaching do. As in task-based teaching, this outcome can be evaluated in terms of “content” (as opposed to language); in fact, it is normally evaluated with a primary focus on content. Examples of outcomes of WebQuest tasks include oral presentations, written reports, videoconferencing, and web publishing, to name just a few (see Dodge, 1996). Outcomes in WebQuests can also be a story or a list of differences, as Ellis exemplified for a task in task-based language teaching, as long as they are the result of transformation.
of the input. In short, as in task-based teaching, outcome – i.e., the product resulting from completing a task -- is a critical feature of a task in WebQuests.

*Lesson Format and Participatory Structure in WebQuest and Task-based language Lessons*

In a preceding subsection, I indicated that a WebQuest by definition is “a lesson format.” However, I did not address how it can adequately serve as a lesson format for task-based language teaching. In this section, I will discuss how well a WebQuest can fit into task-based language teaching as its lesson format.

As noted earlier, while discussing the design of a task-based language lesson, the lesson format in task-based language teaching consists minimally of the task, with the option of using the pre-task or the post-task phase, or both. In other words, as long as a lesson has a task as defined by Ellis as its component, it is considered to be a task-based lesson (Ellis, 2003). While the use of the pre-task and/or post-task phase may be effective for students’ language learning, it is often the case that teachers in a task-based language lesson use only a single task phase, i.e., only “the task,” without either the pre-task or post-task phase. When only the task is used without either the pre-task or the post-task phase in a task-based language lesson, its lesson format is identical with that of a WebQuest. In view of this, it can be stated that a WebQuest can serve adequately as a lesson format for task-based language teaching.

In terms of participatory structure, as in a task-based language lesson, the participatory structure in a WebQuest lesson can also be either “social” or “individual.” While in many WebQuest lessons students interact with each other to perform a task, it is not always the case. We can encounter discussions of so-called a “solo quest,” in which a
learner performs a WebQuest task by him- or herself (e.g., Dodge, 1995) Thus, just as students in a task-based language lesson often perform reading and writing tasks individually (see Ellis, 2003), so too, students in a WebQuest lesson often perform such tasks individually.

This discussion of lesson format and participatory structure in WebQuests and task-based language teaching demonstrates that a WebQuest can fit appropriately into task-based language teaching as its lesson format. To put it differently, the discussion shows that a WebQuest can legitimately find a place within the area of task-based language teaching as its lesson format. Since a WebQuest is not a teaching method (but a lesson format or activity), I did not go further into the methodological procedures/details associated with lesson design and participatory structure. The purpose of the discussion was to demonstrate how a WebQuest can appropriately fit into task-based language teaching and thereby to assert the legitimacy of a WebQuest having a place in task-based language teaching.

**Putting It Together: A View of a WebQuest as a Lesson Format for Task-based Language Teaching within the Sociocognitive CALL Paradigm**

As the series of discussions in this section has shown, a WebQuest can serve appropriately as a lesson format for task-based language teaching. Hence, in the context of language teaching, a WebQuest can be viewed or defined as an appropriate lesson format for task-based language teaching. In the early part of the discussion, I showed that a WebQuest by definition is a lesson format, more specifically, a task-based lesson format. Then, I demonstrated that the characteristics (or features) of tasks as used in task-based language teaching are largely congruent with the characteristics of WebQuest
tasks; that is, commonalities are pervasive in task characteristics, while divergencies are rare. This congruence in task characteristics provided a sound basis for the potential of a WebQuest being used as a lesson format for task-based language teaching. Given this sound basis, I examined how a WebQuest could appropriately fit into task-based language teaching as its lesson format. The basic lesson format as used in task-based lessons was found to be identical with the lesson format of a WebQuest. This revealed that a WebQuest can serve appropriately as a lesson format for task-based language teaching. Given this, the participatory structures of task-based lessons and WebQuest lessons were compared. No divergencies were found; that is, they were in agreement in terms of participatory structure.

This series of literature-based demonstrations offers a ground upon which one can claim that in the context of language teaching, a WebQuest can be defined and viewed as an appropriate lesson format for task-based language teaching. Further, since I have already situated task-based language teaching within the sociocognitive CALL paradigm in a previous section, an extended claim can be established that in the context of language teaching, a WebQuest can be defined and viewed as an appropriate lesson format for task-based language teaching within the sociocognitive CALL paradigm. What merits attention is that unlike in the LQuest model, it has been found that a WebQuest can usefully and legitimately be used as a lesson format in task-based language teaching without distorting its key essential feature, i.e., learners’ engagement in higher-level thinking. Given that second/foreign language learners have traditionally been deprived of opportunities to engage in activities involving higher-level thinking (see Saunders & Goldenberg, 2007), a framework involving use of the WebQuest in its intact state (i.e., in
its originally developed design) in language teaching will have profound implications for second/foreign language learners, as well as teachers. It is especially so, considering that this emphasis on higher-level thinking in “real” WebQuests also matches well with Instructional Conversation’s major goal of conceptual development. Finally, in discussing findings for this study, I will rely, among others, on this newly developed view of a WebQuest as a lesson format for task-based language teaching within the sociocognitive CALL paradigm.

Instructional Conversation, Recitation, and Their Comparison

Recitation

What is Recitation?

Recitation consists of “the teacher assigning a text (in the form of a textbook or a lecture) followed by a series of teacher questions that require students to display their mastery of the material through convergent factual answers” (Tharp & Gallimore, 1991, p. 2). According to Mehan (1991), when the recitation script is enacted, the teacher first assigns a text, in either oral or written form, and then the student absorbs the text and recites it. After the student’s recitation, the teacher assesses the student’s performance. A three-part sequence called IRE (Initiation, Response, and Evaluation) has been widely described in the literature as what constitutes recitation. (e.g., Cazden, 2001; Gutierrez, 1994; Mehan, 1991). The following excerpts exemplify the IRE sequence:

Excerpt (1)
(I) Teacher: What’s the capital of New York?
(R) Student: Albany.
(E) Teacher: Good.
(From Larson & Marsh, 2005, p. 13)
Excerpt (2)

(I) Teacher: Where were you born, Prenda?

(R) Pupil: San Diego

(E) Teacher: You were born in San Diego, all right.

Excerpt (3)

(I) Teacher: Um, can you come up and find San Diego on the map?

(R) Pupil: (Goes to board and points.)

(E) Teacher: Right there, O.K.

(Excerpts (2) and (3) from Mehan, 1991, p. 7)

Note: (I) Initiation; (R) Response; (E) Evaluation

As seen above, a teacher’s initiation induces a student’s response, which in turn invokes a teacher’s evaluation. As Mehan (1991) indicates, teachers’ questions often test students on what they have been taught rather than ask them to share what they know. These “known-answer” questions (i.e., questions to which the teacher already knows the answer) seem to inevitably lead to the teacher’s evaluation act. Also, in the examples above, one may notice that the teacher’s initiation act not only specifies an action to be taken (answering the question), it also identifies the person who is to take the action. That is, the initiation act serves the function of allocating speech turns. Unlike in the above examples, questions like “Raise your hand if you know the answer” make students select themselves as the next speaker. On the other hand, questions like “What’s the answer to this?” call for a group response. This illustrates that the teacher unilaterally allocate discourse turns in the classroom (Mehan, 1991).
A Brief Chronological Review of the Literature on Recitation

Hoetker and Ahlbrand (1969) review a range of classroom observational studies conducted from the late 1880s to 1950 which dealt with teacher verbal behavior, especially recitation. They describe most of these studies in some detail. Two of them will be summarized here, and for the rest of the studies, references will be provided. Following this, several more recitation studies conducted since the 1960s will be reviewed.

In an informal observational study, Rice (1893, as cited in Hoetker & Ahlbrand, 1969) used both the terms “recitation” and “oral examination” to refer to the classroom interaction that he had observed. This interaction is characterized as “teacher and textbook-dominated, fact-centered, and rapidly paced” (Hoetker & Ahlbrand, 1969, p. 149). Hoetker and Ahlbrand (1969) cite Rice (1893) as reporting that “[i]n several instances, when a pupil stopped for a moment’s reflection, the teacher remarked abruptly, ‘Don’t stop to think, but tell me what you know,’” (p. 149). According to the authors, the oral examination in the 1890s differed from the recitation in the 1960s only in that in Rice’s day, pupils were often called upon for fairly lengthy memorized responses.

Hoetker and Ahlbrand (1969) then describe the first major systematic study of classroom behavior conducted in the 20th century. In 1912, Romiett Stevens published a report on a four-year study in which she had observed a number of secondary school classrooms and analyzed stenographic records of the verbal behavior identified in the classrooms (Stevens, 1912, as cited in Hoetker & Ahlbrand, 1969). Stevens reported that she had found the following to be true of the classrooms she observed:

On the average, teachers talked 64 percent of the time; there was little difference
between teachers in this regard, no matter what the subject or grade level; about 80 percent of the classroom talk was devoted to asking, answering, or reacting to questions; rarely did a teacher’s question call for anything besides rote memory or superficial comprehension; the rate of teacher question-asking ranged from one to four questions per minute, with the average being about two per minute. (Hoetker & Ahlbrand, 1969, p. 151)

While commenting on the large number of questions asked of students by teachers across all the different subject area classrooms observed, Stevens indicates that it suggests that teachers are making the classroom the place for displaying knowledge instead of a laboratory for getting and using it, and that in actual practice there is very little effort put forth to teach students to be self-reliant, independent mental workers. In her report, Stevens showed that “the question-answer recitation … was the dominant method of teaching in the schools she observed” (Hoetker & Ahlbrand, 1969, p. 153).

After describing Stevens’ report, Hoetker and Ahlbrand (1969) introduce a number of studies stimulated by Stevens’ work: Colvin (1919); Miller (1922); Monroe and Carter (1923); Pepoon (1926); Barr (1929); DeLong & Smith (1931); Bagley (1931); Briggs (1935); Corey (1940); Jayne (1945); Spears (1950), etc. Most of these studies were partial replications of Stevens’ observations, and they generally confirm that what Stevens observed is very close to the typical situation. Hoetker and Ahlbrand indicate that the authors of the methods and supervision textbooks of the following two decades agreed that the teacher behavior Stevens had observed was undesirable and should be changed.
In the 1960s, Bellack and his colleagues (Bellack, Kliebard, Hyman, & Smith, 1966) presented a verbal behavioral sequence equivalent to IRE which they had identified in the course of observing teacher-pupil interactions in fifteen high school classrooms. While providing an elaborate description of the verbal behavior of teachers and students during four class periods in each of fifteen eleventh-grade social studies classrooms in the New York City area, the authors stress that the core of the teaching sequence observed across the classrooms was a teacher’s solicitation (questioning), a student’s response, and the teacher’s reaction to that response. They note that all the teachers, despite differences in the sizes, ability levels, and backgrounds of their classes, acted very much like one another: They talked between two-thirds and three-quarters of the time, and their major activity was asking and reacting to questions that called for factual answers from students. According to these researchers, “most of the … unit was devoted to stating facts and explaining principles …, while considerably less of the discourse was concerned … with expressing and justifying opinions” (Bellack et al., 1966, p. 85-86). While the authors refer to the sequence as “solicitation-response-reaction” (or, sometimes, “question-response-reaction”) rather than IRE, they essentially mean the same with both representing the recitation form of teaching.

In 1981, Stodolsky and her colleagues examined differences in recitation as a function of the subject matter (mathematics or social studies) and as a function of the socio-economic level of elementary school children (Stodolsky, Ferguson, & Wimpelberg, 1981). Over a two-year period, they observed 58 classrooms in 22 school districts in the Chicago region. Although the purpose of their study was not to find out which was the most frequent format of instruction in the elementary classrooms,
recitation was found to be the most dominant instructional format after all. As for differences in recitation as a function of the subject matter, it was found that recitation occurred proportionately more frequently in the mathematics classes than in the social studies classes. Results also indicated that recitation occurred proportionately more frequently in the lower socio-economic status (SES) schools than in the upper SES schools. While the category “expected cognitive level of tasks” was not a primary area of concern to the researchers, results showed that the dominant goal for recitation segments in both mathematics and social studies classes was either “receiving information” or “learning concepts/skills” (lower mental processes). A very low percentage of recitation segments (12% for social studies classes and 10% for math classes) was aimed at either “application of concepts or skills” or other higher mental process goals.

A decade after Stodolsky et al.’s (1981) study, Nystrand and Gamoran (1991) presented a distinction between “substantive engagement” and “procedural engagement.” These researchers point out that the engagement of students who participate in recitation is procedural in that the topics covered are entirely at the hands of teachers and that the teachers rarely interact with the substance of students’ answers except to evaluate them. On the other hand, substantive engagement, they emphasize, involves “student-teacher and peer interactions where the conversants clearly work in terms of each other, e.g., where the teacher picks up on the substance of a student’s response and where, consequently, the topic is sustained across conversation turns” (Nystrand & Gamoran, 1991, p. 266). While discussing the results of their previous investigation that revealed a strong, positive effect of substantive engagement on secondary school English students’ academic achievement, but only an attenuated effect of procedural engagement on the
students’ achievement, these researchers claim that teachers’ use of authentic questions as opposed to “test” questions, which are typical of recitation, as well as their use of uptake questions (i.e., follow-up questions that incorporate students’ previous answers) and time devoted to discussion, enhances students’ substantive engagement, thereby contributing to their academic achievement.

In their 2001 report, Nystrand and colleagues offered a reconceptualization of the classroom learning environment in response to the persistent preponderance of recitation in American classrooms (Nystrand, Wu, Gamoran, Zeiser, & Long, 2001). Drawing upon Russian scholar Mikhail Bakhtin’s epistemological distinctions between “monologic” and “dialogic” discourse, they viewed classroom discourse as monologic “to the extent that the main speaker, typically the teacher, operates from a predetermined ‘script’” and as dialogic “to the extent that the participants expand or modify the contributions of the others as one voice ‘refracts’ another” (p. 2). Viewing the IRE sequence in recitation as a typical example of monologic discourse, Nystrand and colleagues argued the need for teachers to use authentic questions rather than test questions to make the classroom discourse dialogic, thereby to improve students’ academic achievement.

Most recently, Wells and Arauz (2006) report the results of an action research project in which teachers attempted to create the conditions for students’ active involvement in the dialogic coconstruction of meaning about topics of significance to them. The teachers sought to generate such conditions by adopting an inquiry approach to the curriculum. A quantitative comparison between observations made early and late in the teachers’ involvement in the project showed a number of significant changes in the characteristics
of teacher-whole-class discourse, with a shift toward a more dialogic mode of interaction. Nevertheless, it was found that the initiation-response-evaluation (IRE) genre continued to be pervasive. This finding shows that recitation is still the predominant form of classroom discourse/interaction or instruction.

Pros and Cons

The literature on both classroom discourse/interaction in general and recitation in particular is full of criticisms about, or objections to, the question-response-evaluation pattern of instruction, and it is difficult to find any researchers advocating recitation as an instructional method. On the other hand, Stodolsky et al. (1981) suggest that if it is conducted well, recitation may be pedagogically sound. Hoetker & Ahlbrand (1969) indicate that given its singular success in the evolutionary struggle with other, more highly recommended, methods, more research is needed to better capture the nature of the method rather than simply criticizing it. However, even these researchers -- those who do not explicitly provide negative comments on recitation -- still make it clear that they do not advocate the recitation form of teaching. Given this, it seems that there are “cons,” but no “pros” in general.

While criticizing the prevalent recitation method, Wilen (1994) points out that the major problem with recitation is that it results in limited opportunities for students to think, explore ideas in depth, express feelings, and most importantly for language classrooms, to use language. He further adds that a steady stream of teachers’ low level questions, for which they already know the answers, and students’ often one-to-two word responses results in a highly controlled, anti-intellectual, and anti-expressive classroom atmosphere. Another problem, he indicates by citing Wilen and White (1991), is that
ethnographic research has shown that culturally different students from the majority culture sometimes have difficulty in participating in the teacher initiation-student response-teacher evaluation pattern of interaction.

Other researchers criticized recitation from the following points of view: first, it provides no bridge from everyday registers to those in which disciplinary knowledge is constructed (Lemke, 1990, as cited in Well & Arauz, 2006); second, it provides little or no opportunity for students to voice their own ideas or comment on those of others (Wood, 1992, as cited in Well & Arauz, 2006); third, teacher questions in recitation are rarely used to assist students to develop more complete or elaborated ideas (Tharp & Gallimore, 1991); fourth, a teacher’s question in recitation rarely calls for anything besides rote memory or superficial comprehension (Stevens, 1912); fifth, a considerably greater amount of talking is done by the teacher, and considerably less of student discourse is devoted to expressing and justifying opinions than to stating facts (Bellack et al., 1966); sixth, the large number of questions by the teacher mean that students are not given time for thinking (Miller, 1922, as cited in Hoetker and Ahlbrand, 1969); seventh, the main theme of the material at hand is lost sight of through overemphasis on facts or details (Colvin, 1931, as cited in Hoetker & Ahlbrand, 1969); and finally, recitation does not allow for the exploration and development of ideas and is unlikely to yield much conceptual change on the part of learners (Saunders & Goldenberg, 2007).

In their discussion of the results of their study, Stodolsky et al. (1981) state that recitation may serve some pedagogical purposes, particularly for topics which are algorithmic and factual. They present their findings that children’s attention is relatively high during recitations and that a number of teacher purposes can be served in a recitation
format. They add that “particularly in a skill oriented subject like fifth-grade mathematics, public practice, review and checking work may facilitate learning as well or better than, for example, seat-work sessions in which the teacher can only interact with a limited number of children” (p. 129). Although they conclude that recitation may be useful when used in conjunction with other instructional formats, they stress that their conclusion does not mean that they are advocating recitation as a preferred method of teaching.

**Instructional Conversation**

In reaction to the ubiquity of recitation across North American classrooms, Tharp and Gallimore (1988, 1989, 1991) proffered Instructional Conversation, in which the teacher and students engage in conversations with one another in a natural, spontaneous way, yet with clear instructional intent in the teacher’s mind. Redefining teaching as assisting performance through what Russian psychologist Lev Vygotsky called a child’s “zone of proximal development” (ZPD), Tharp and Gallimore (1991) asserted that Instructional Conversation is the most critical form of assisting learners in developing through their ZPDs. As Tharp and Gallimore and their colleagues indicate, the theoretical roots for Instructional Conversation are found in Vygotsky’s theory and subsequent socio-historical accounts of learning and development by Neo-Vygotskian theorists (see Rueda, Goldenberg, & Gallimore, 1992; Tharp & Gallimore, 1991).

Drawing on Vygotsky’s concept of “word meaning,” which encompasses both the lexical meaning of words and the meaning of larger discourse, Tharp and Gallimore (1988) originally conceptualized Instructional Conversation as “discourse, in which teacher and students weave together spoken and written language with previous
understanding” (p. 111). This broad -- or “generic,” as they call it -- conceptualization of IC was intended to address IC as a means for bridging (or weaving) new, schooled concepts (which are learned primarily through written symbols) with everyday concepts (which are learned primarily through speech). Since then, Tharp and Gallimore, as well as other IC scholars, have developed this broad conceptualization into more concrete construct definitions.

Instructional Conversation (IC) has been defined in a number of ways. IC is “a dialogue between teacher and learners in which the teacher listens carefully to grasp the students’ communicative intent and tailors the dialogue to meet the emerging understanding of the learners” (Tharp & Gallimore, 1991, p. 1). IC is simply “good classroom discussions” or “an excellent discussion conducted by a teacher and a group of students” (Goldenberg, 1991, p. 3). Or IC is a “discussion-based lessons geared toward creating richly textured opportunities for students’ conceptual development (Goldenberg, 1992/1993, p. 317). IC is “a dialog between teacher and learner in which prior knowledge and experiences are woven together with new material to build higher understanding” (Tharp & Yamaguchi, 1994, p. 1). Finally, “IC is a theme-focused, discussion-oriented form of teacher-led talk about text” (Saunders & Goldenberg, 2004, p. 1).

Viewing IC not just as a type of classroom discourse but also as an instructional approach, Goldenberg (1991) presents a comparison of IC and direct instruction (DI). In explaining the point that “the two approaches proceed from substantially different assumptions about teaching and learning,” he states that whereas DI “assume[s] that what is to be learned by the student is already in the head of the teacher …, and teaching
essentially consists of having students acquire this knowledge or skill through the teachers’ skillful use of, for example, modeling, step-by-step instructions, practice opportunities, and checking for understanding.” IC “assume[s] that students themselves must play an important role in constructing new knowledge and in acquiring new understandings about the world” (p. 5). The teacher in IC lessons, he adds, thus plays the role of facilitator rather than that of “transmitter” of knowledge. As in DI, teachers in IC lessons plan and organize instruction, but unlike in DI, the IC teachers’ emphasis “is less on delivery of instruction and more on facilitating and guiding student understanding in the course of extended verbal interactions” (p. 5).

In accounting for the seemingly paradoxical concepts of “instruction” and “conversation” represented in the term “Instructional Conversation,” Tharp and Gallimore (1991) assert that “the task of teaching is to resolve this paradox,” adding that “to truly teach, one must converse; to truly converse is to teach” (p. 4). In relation to this paradox, Goldenberg (1991) states that “instructional conversations are *instructional* in intent on the one hand” -- i.e., they are designed to promote learning -- and “*conversational* in quality” on the other hand – i.e., “they appear to be natural and spontaneous language interactions, free from the didactic characteristics normally associated with formal teaching” (p. 3). The “instructional” aspect of IC is further addressed by Tharp and Gallimore (1991). They stress that in contrast to IC used in parenting situations outside of school, “[a]ssisting performance through conversation [in teaching situations] requires a quite deliberate and self-controlled agenda in the mind of the teacher, who has specific curricular, cognitive, and conceptual goals” (p. 4). Then they state that IC is pointed toward learning objectives by the teachers’ intention, but that
“even the most sophisticated learners may lose consciousness of the guiding goal as they become absorbed in joint activity with the mentor” (p. 5).

Now, given both these instructional and conversational aspects of IC, what would be the specific elements that constitute IC? The constituent elements of IC are clearly presented in what is called the “IC model.” The IC model, which was developed by Goldenberg (1991, 1992/1993), is simply a presentation of 10 elements of IC, of which five are instructional element and five are conversational elements. Since the 10 elements of IC, along with their accompanying descriptions, were already presented in a table in an earlier section (see the section entitled “The Instructional Conversation Model”), I present the elements without the descriptions:

INSTRUCTIONAL ELEMENTS

1. Thematic focus. …
2. Activation and use of background and relevant schemata. …
3. Direct teaching. …
4. Promotion of more complex language and expression. …
5. Promotion of bases for statement or positions. …

CONVERSATIONAL ELEMENTS

6. Few “known-answer” questions. …
7. Responsiveness to student contributions. …
8. Connected discourse. …
9. A challenging, but non-threatening atmosphere. …
This model well reflects the theoretical concepts/principles and goals of the IC originally proffered by Tharp and Gallimore (1988). First of all, Goldenberg (1991, 1992/1993), in presenting the model, clearly states that the goals of IC are conceptual and linguistic development. This suggests that the same goals of IC that were originally presented by Tharp and Gallimore (1988) are reflected in the model. It indeed seems so in general. However, in thinking about this issue, one would need to consider the following: From Vygotsky’s (1978) view, language learning, like all other learning, occurs in interaction with more competent others. At the same time, from his view, language plays a central role in conceptual (or cognitive) development; briefly put, “what is spoken to a child … is later abbreviated and transformed into the silent speech of the child’s thought” (Tharp and Gallimore, 1988, p. 44). Considering these Vygotskian views, upon which Tharp and Gallimore drew in conceiving of IC for use in teaching, one would need to examine the IC elements presented in the model from these two Vygotskian views, which address language learning and conceptual development.

Second, the weaving metaphor, which Tharp and Gallimore (1988) employed in conceptualizing IC, is well reflected in the model, especially in the second element, “activation and use of background and relevant schemata.” As discussed above, the metaphor was intended to conceptualize IC as a means to bridge schooled concepts with everyday concepts. Later, Tharp, with his colleague, elaborated further on this metaphor and defined IC as “a dialog between teacher and learner in which prior knowledge and experiences are woven together with new material to build higher understanding” (Tharp...}

12 Unlike Noam Chomsky, who argued for the existence of the language acquisition device (LAD), separately from the general cognitive mechanism, Vygotsky, like Western cognitive psychologists, held that language learning is governed by the general cognitive system. Thus, for him, language learning is not different from content-area learning.
& Yamaguchi, 1994, p. 1). This is well reflected in #2. That is, before students read the text, “the teacher either ‘hooks into’ or provides with pertinent background knowledge and relevant schemata necessary for understanding the text” (Goldenberg, 1991, p. 6). Since the weaving metaphor, thus the notion of IC, was developed in the context of reading lessons (see Tharp & Gallimore, 1988), IC serves primarily as a post-reading activity; that is, the teacher and students talks about the written text that students have read. Before students read the text, however, the teacher weaves new, schooled concepts with students’ everyday concepts by “activating and using background and relevant schemata.”

Third, from #9, “a challenging, but non-threatening atmosphere,” we can see that the IC model draws on Vygotsky’s notion of the ZPD. The notion is addressed in the accompanying description that “[t]he teacher creates a zone of proximal development, where a challenging atmosphere is balanced by a positive affective climate. …” (Goldenberg, 1991, p. 7). Vygotsky’s notion of the ZPD in fact spans over a number of other elements; for example, # 7, which represents responsive assistance, draws on the notion of the ZPD, although the accompanying description does not include an explicit mention of the ZPD. Fourth, and finally, “thematic focus,” which Tharp and Gallimore addressed as an important feature of IC is also included in the model (see #1).

There are two things that need to be clarified with regard to the IC model. The first is that the term “text” as used in the descriptions of the IC elements should be interpreted as written text, not spoken text, although the model can also be usefully used for the latter. This caveat is grounded on the fact that Goldenberg’s discussions of the IC model concern only teacher-led talk about “written text” (e.g., Goldenberg, 1991, 1992/1993;
Sauders & Goldenberg, 2007). This focus on written text in the IC model is a reflection of Tharp and Gallimore’s (1988) original conceptualization of IC, which was based upon their classroom observations of small-group reading lessons. As Tharp and Gallimore made clear, “[m]ost often, [IC] involves reading some text, although this text can be presented orally. … *The essential feature of the activity is … to read the text and talk together about it*” (Tharp & Gallimore, 1988, p. 134, italics for emphasis). In short, just as Tharp and Gallimore (1988) focused on written text, Goldenberg’s discussions of the IC model are centered around talk about written text. The second, which is related to the first, pertains to the goals of IC, i.e., conceptual and language development. In their account of conceptual development as a goal of IC, Tharp and Gallimore (1988) discuss conceptual development largely in terms of comprehension or understanding of text (i.e., written text). They sometimes even use the two phrases “the … goal of understanding text “(p. 120) and “the goal of conceptual development” interchangeably. Goldenberg also addresses conceptual development in terms of comprehension of text, but, on the other hand, he further clarifies the concept by using the phrase “deep understanding” of concepts from text (see Goldenberg, 1991, 1992/1993; Sauders & Goldenberg, 2007). In short, it seems apparent that both Tharp and Gallimore (1988) and Goldenberg (1991, 1992/1993, 2004) address conceptual development in terms of understanding or, more precisely, “deep understanding” of concepts.

*A Comparison of Instructional Conversation and Recitation*

Since IC was offered as a direct response to recitation, they largely contrast with each other, with similarities hard to find. Therefore, the comparison of the two here will focus on their differences. The differences will first be described in terms of the IC
elements provided in the preceding section, as well as in Table 1 in the section entitled “The Instructional Conversation Model.” Then a summarized version of the differences will be presented in a table, together with additional differences identified in terms of some other key IC characteristics seen in the general description of IC by Goldenberg (1991, 1992/1993). Features of recitation to be used for the comparison will be derived from the literature overviewed in a preceding section as much as possible, and the citations will be provided again.

(1) *Thematic Focus*: Whereas the teacher in IC selects a theme and maintains a focus on the theme throughout the discussion, in recitation, the main theme of the material at hand is lost sight of through overemphasis on facts or details (Covin, 1931, as cited in Hoetker & Ahlbrand, 1969).

(2) *Activation and use of background knowledge and relevant schemata*: In recitation, background knowledge and relevant schemata are not important. Recall and subsequent recitation of only the knowledge (usually factual knowledge) called for by the teacher is necessary. Therefore, activation and use of background knowledge and relevant schemata are redundant.

(3) *Direct Teaching*: In IC, the teacher provides direct teaching only when necessary. Furthermore, it is done not with the intent of imparting decontextualized knowledge and skills, but within the context of, and directly related to, understanding the larger lesson (Goldenberg, 1991). By contrast, evaluation acts in recitation are designed largely to confirm or provide exact, specific answers without regard to students’ understanding of the larger lesson, thus having the characteristic of imparting decontextualized knowledge.
in a consistent way. Evaluation acts by the teacher are intended to ensure that the student has the correct knowledge, and in this respect, recitation is similar to direct teaching.

(4) *Promotion of more complex language and expression:* The teacher’s evaluation of a student’s answer in recitation is typically a perfunctory “Right” or “Wrong,” a “Good” or an “Okay,” sometimes merely a nod, or sometimes nothing (Nystrand & Gamoran, 1991). Thus, teachers in recitation do not incorporate students’ answers into the fabric of an unfolding exchange, and even when these answers modify the topic or affect the course of discussion in some way, the teachers do not certify these contributions and modifications. This contrasts sharply with IC teachers’ constant attempts to elicit more extended student contributions by using a variety of elicitation techniques. In recitation, the teacher’s evaluation act terminates a cycle of IRE, and therefore, there is no follow-up on the student’s response.

(5) *Promotion of bases for statements or positions:* Given the lack of teachers’ follow-up on students’ answers in recitation, it follows that there is no promotion of students’ provision of bases for their arguments or positions in recitation. Not only is there no uptake – i.e., a teacher’s follow-up question that incorporates a student’s previous answer (Nystrand & Gamoran, 1991; Nystrand et al., 2001) – but there is no follow-up in either statement or command form (e.g., “Tell me why you think so). This lack of “promotion of bases for statements or positions” in recitation stems from the lack of teachers’ follow-up on students’ responses in the evaluation phase of the IRE sequence. In relation to this, Nystrand and Gamoran (1991) suggest as an alternative teachers’ use of “high-level evaluation,” in which the evaluative remark used in recitation is followed immediately by the teacher’ follow-up, such as “How do you know that?”
(6) *Few “known-answer” questions:* Unlike in IC, questions asked by teachers in recitation are typically those to which the teachers already know the answer, or “known-answer” questions (Mehan, 1991). These known-answer questions seem to inevitably lead to teachers’ evaluation act. Since they are used largely to test students on what they have been taught -- through textbooks or lectures, for example – they are often referred to as “test questions” (Mehan, 1991; Nystrand & Gamoran, 1991). Nystrand and Gamoran (1991) call these known-answer questions “inauthentic questions” as opposed to “authentic questions,” for which the teacher avoids prespecifying (or predetermining) answers. Unlike in recitation, in IC, these authentic questions are predominantly used, while “known-answer” questions are rarely asked.

(7) *Responsiveness to student contributions:* It was indicated in (4) and (5) above that in recitation, there is no follow-up by the teacher on students’ answers because the teacher’s evaluation act (or remark) terminates the IRE sequence. This lack of teacher follow-up in the evaluation stage of recitation accounts well for the difference between recitation and IC in terms of “responsiveness to student contributions.” Teachers in recitation, as Nystrand and Gamoran (1991) indicate, rarely interact with the substance of students’ answers except to evaluate them. To put it another way, they do not follow up on students’ contributions. Teachers’ evaluative remark ends the recitation sequence, without incorporating students’ answers into the fabric of an unfolding exchange. When students’ answers modify the topic or affect the course of discussion in some way, teachers do not certify these contributions and modifications and terminate the sequence with an evaluation.
(8) *Connected discourse:* In recitation, repeated cycles of IRE make it impossible for utterances to build upon and extend previous ones. Multiples turns cannot be realized because the teacher’s initiation act identifies the specific person (or group) who is to answer, resulting in the teacher allocating discourse turns (Mehan, 1991). Nor can interactive turns be realized because of the teacher’s allocation of discourse turns and the repetitions of the IRE sequence without teacher follow-ups on student answers.

(9) *A challenging, but non-threatening atmosphere:* The zone of proximal development, in which IC takes place as a critical form of assistance, is a zone where children are encouraged to construct – with the assistance of the teacher-- understandings of important ideas, concepts, and texts that they would otherwise not understand on their own. In this respect, the climate of IC lessons is fundamentally challenging to children. However, this challenging atmosphere is balanced by a positive affective climate where students feel comfortable to contribute and participate and where risky, speculative answers are acceptable. By contrast, recitation lessons are generally not challenging to students because teacher questions call for students’ mere recall and regurgitation (or recitation) of the knowledge -- mostly factual knowledge -- that they absorbed from textbooks or lectures and because no questions or statements designed to foster students’ construction of understandings follow teachers’ evaluations of student answers. As Tharp and Gallimore (1991) pointed out, teacher questions in recitation are rarely used to assist students to develop more complete or elaborated ideas. Furthermore, the climate of recitation is largely threatening to students because the teacher strictly controls classroom interactions and discourse and expects only correct answers from students. As stated above, the teacher’s initiation act not only specifies an action to be taken by the student
(answering the question) but also identifies the person who is to take the action. This, along with the teacher’s “pressure” on students to produce correct answers, creates a threatening atmosphere.

(10) General participation, including self-selected turns: Unlike in IC, in recitation, the teacher dominates participation. As Ballack et al. (1966) noted, “teachers are considerably more active in the amount of verbal activity [than students]” (p. 84); they talked between two-thirds and three-quarters of the time, with their major activity being asking and reacting to questions that called for factual answers from students. Also, in recitation -- unlike in IC -- selection of speech turns is under the control of the teacher. It is the teacher, not students, who selects (or allocates) discourse turns in the classroom (Mehan, 1991). By contrast, IC lessons are characterized by the teacher’s encouragement of participation by all students and of their self-selection of speech turns as in natural conversational settings.

The following table summarizes the comparison of IC and recitation presented thus far and also provides an additional comparison in terms of some other key IC characteristics found in the general description of IC by Goldenberg (1991, 1992/1993).

Table 2. A Comparison of Instructional Conversation and Recitation

<table>
<thead>
<tr>
<th>Instructional Conversation</th>
<th>Recitation Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Thematic Focus</td>
<td>1. The main theme of the material at hand is lost sight of through overemphasis on facts or details.</td>
</tr>
<tr>
<td>2. Activation and use of background knowledge and relevant schemata</td>
<td>2. Activation and use of background knowledge and relevant schemata are redundant; only recall and subsequent recitation of the specific knowledge (usually factual knowledge) called for by the teacher is necessary.</td>
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</tr>
<tr>
<td>3. Direct teaching when necessary</td>
<td>3. Has the characteristic of consistently imparting knowledge and skills; similar to direct teaching.</td>
</tr>
<tr>
<td>4. Promotion of more complex language and expression</td>
<td>4. The teacher’s evaluation act terminates a cycle of IRE, and therefore, there is no follow-up on the student’s response: (a) Teachers do not incorporate students’ answers into the fabric of an unfolding exchange. (b) Teachers do not certify students’ contributions and modifications.</td>
</tr>
<tr>
<td>5. Promotion of bases for statements or positions</td>
<td>5. Lack of teachers’ follow-up on students’ responses in the evaluation phase of IRE makes it unfeasible for teachers to elicit students’ reasoning behind, or defense of, their</td>
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</tr>
<tr>
<td>6. Few “known-answer” questions</td>
<td>6. Questions asked by teachers are typically those to which the teachers already know the answer, or “known-answer” questions.</td>
</tr>
<tr>
<td>7. Responsiveness to student contributions</td>
<td>7. Teachers rarely interact with the substance of students’ answers except to evaluate them; they do not follow up on students’ contributions.</td>
</tr>
<tr>
<td>8. Connected discourse</td>
<td>8. Repeated cycles of IRE make it impossible for utterances to build upon and extend previous ones.</td>
</tr>
<tr>
<td>9. A challenging, but non-threatening atmosphere</td>
<td>9. Recitation lessons are generally not challenging to students (a) because teacher questions call for students’ mere recall and regurgitation (or recitation) of the knowledge -- mostly factual knowledge -- that they have absorbed from textbooks or lectures and (b) because questions or statements designed to foster students’ construction of understandings</td>
</tr>
</tbody>
</table>
10. General participation, including self-selected turns

Other (from Goldenberg, 1991; Goldenberg, 1992/1993)

- IC is about an idea or concept that has meaning.

- Recitation does not allow for the exploration and development of ideas and is unlikely to yield much conceptual change on the part of learners (Saunders & Goldenberg, 2007).

do not follow teachers’ evaluations of student answers.

- The climate of recitation is largely threatening to students because the teacher strictly controls classroom interactions and discourse and expects (and often “pressures” students into producing) only correct answers.

10. The teacher dominates participation.

Selection of speech turns is under the control of the teacher; it is the teacher, not students, who selects discourse turns.
• Both teacher and students present provocative ideas or experiences, to which others respond.

• The teacher assures that the discussion proceeds at an appropriate pace – neither too fast to prohibit the development of ideas, not too slowly to maintain interest and momentum.

• The teacher knows when to ease up, allowing thought and reflection to take over.

• Teachers’ questions rarely call for anything besides rote memory or superficial comprehension. Classrooms are the place for displaying knowledge (Hoetker & Ahlbrand, 1969).

• Interaction in recitation classrooms is characterized as “rapidly paced” (Hoetker & Ahlbrand, 1969).

• The “fast-paced” nature of interaction does not allow for students’ thinking and reflection; “when a pupil stopped for a moment’s reflection, the teacher remarked abruptly, ‘Don’t stop to think, but tell me what you know’” (Rice, 1893, as cited in Hoetker & Ahlbrand, 1969, p. 149). There is very little effort put forth to teach students to be self-reliant, independent mental workers (Hoetker & Ahlbrand, 1969).
Instructional Conversation as a Means to Scaffold Reading Comprehension

As noted in the preceding section, in presenting the IC model, Goldenberg (1991, 1992/1993) addressed conceptual development as a major goal of IC in terms of students’ “deep understanding” of concepts in written text. In this section, I will first elaborate a bit further on this point and then review empirical studies on the effects of IC on ESL learners’ reading comprehension. I will then conclude the section by addressing IC as a means to scaffold reading comprehension, based upon the results of the empirical studies reviewed. The reason for addressing IC as a means for scaffolding reading comprehension is to develop in the next section the point that enhanced reading comprehension gained through participation in IC will lead to better writing.

The IC Model and Reading Comprehension

In presenting the IC model, Goldenberg (1991, 1992/1993) underscores that IC promotes learners’ deep understanding of concepts and ideas represented in written texts. As stated above, he emphasizes this point in his discussions of conceptual development as a goal of IC, thereby suggesting that, like Tharp and Gallimore (1988), he views learners’ conceptual development as occurring through their engagement in the process of developing deep understandings of concepts and ideas in written texts. As he makes clear, IC “promotes comprehension of ideas and concepts” (Goldenberg, 1992/1993, p. 324), or more precisely, “helps learners broaden and deepen their understanding of important ideas” (Goldenberg, 1991, p. 8), or “promotes higher level understanding of significant concepts” (Saunders & Goldenberg, 2007, p. 248). He holds that “true
education – real teaching – involves helping students think, reason, comprehend, and understand important ideas” (Goldenberg, 1992/1993, p. 316).

To put all these in another way, Goldenberg (1991, 1992/1993) has been emphasizing the role of IC as a means to help students’ deep comprehension of text, or deep reading comprehension. His emphasis on IC as a means to help students’ reading comprehension is manifested in several parts of his writings where the IC model is presented. Above all, his 1992/1993 article is entitled “Instructional Conversation: Promoting Comprehension through Discussion” with the purpose of addressing IC as a means to help students’ reading comprehension. In the body text of the article, he indicates that “ICs have been used primarily to guide reading comprehension lessons” (Goldenberg, 1992/1993, p. 324). In his 1991 national center research report, he also stresses that IC is particularly suited to the educational goal of “helping students comprehend texts” (Goldenberg, 1991, p. 15; see also Goldenberg, 1992/1993, p. 324). Here, reading comprehension is construed as meaning “deep” (or “deeper”) reading comprehension.

By all the above-quoted statements, as we will see soon in the ensuing section, Goldenberg (1991, 1992/1993) has essentially been addressing the point that IC promotes deep comprehension of reading “content,” where “content” is viewed as encompassing not just literal details revealed in texts but also complex concepts and ideas represented in the texts. Thus, in short, he has been addressing “deep” comprehension (as as opposed to superficial comprehension) of such reading content. This will become apparent as we review the empirical studies by him and one of his colleagues in the section that ensues.
Effects of Instructional Conversation on Reading Comprehension

In the extant literature, only two experimental studies are to be found that investigated the effects of IC on reading comprehension. The investigators of both of these studies also acknowledge current lack of studies on the effects of IC on students’ reading comprehension (see also a recent meta-analytic study of research on the effects of classroom discussion on reading comprehension by Murphy, Wilkinson, Soter, & Hennessey, 2009). Both of these studies were conducted by the same researchers, including Claude Goldenberg, the developer of the IC model. As the studies are important to this current study, I will review them in a little more detail than other studies.

The first study, conducted by Saunders and Goldenberg (1999), investigated the effects of IC and literature logs on limited- and fluent-English-proficient students’ reading comprehension. 116 fourth and fifth graders enrolled in a Spanish-to-English language arts transitional bilingual program at an urban K-5 elementary school participated in the study. The students were randomly assigned within classes to one of four treatment conditions: literature logs only, IC only, literature logs + IC, and control. Over the period of approximately two weeks, the literature logs group wrote individually about their personal experiences related to a story in their literature logs and then participated in teacher-led discussions. Over the same period, the IC group participated in IC sessions conducted by their teachers, in which the teachers attempted through discussion to clarify the factual content of the story and develop students’ understandings of the more sophisticated concept of a theme of the story. Students in the control group did not participate in small group discussions with their teachers and only worked independently on reading and writing activities over the same period. Results indicated
that students in the IC and literature logs + IC groups outperformed the control group on the posttests of story comprehension (i.e., factual and interpretive comprehension). Results also revealed that students in all the three experimental groups were significantly more likely to demonstrate an understanding of the story themes than students in the control group. Moreover, the effects of IC were found to be stronger than the effects of literature logs on factual and interpretive comprehension for both limited- and fluent-English-proficient students.

After this study, Saunders and Goldenberg (2007) investigated the effects of IC on English language learners’ reading comprehension. 27 fourth-grade students enrolled in a Spanish bilingual program at an urban K-5 elementary school participated in the study. The students, who were from the same class, were randomly assigned to one of two treatment conditions: IC and recitation (i.e., control). They were then divided into 2 IC subgroups and 2 control subgroups. Prior to the experiment, the students were pretested on their understanding of the concept of friendship by an essay writing test about friendship. In both conditions, the students first read a short story (in English) about two mischievous friends. Following this, in the IC condition, the teacher conducted IC lessons in which she focused on problematic (hence, more differentiated) aspects of a story-related theme of “friendship.” In the control condition, the same teacher conducted conventional recitation (or “basal-like”) lessons in which she reviewed the literal details of the story with students. After the experiment, the students were posttested on their understanding of the concept of friendship by an essay writing test about friendship, where the same prompt as in the pretest was presented. A 10-item short-answer posttest on the students’ literal comprehension of the story was also administered. Results
indicated that students in the IC group understood the literal details of the story as well or better than students in the control group and that most of the IC students displayed a more complex and differentiated conceptualization of friendship in their essays. The authors conclude that IC promotes higher level understanding of significant concepts without sacrificing literal comprehension.

Research Supporting Instructional Conversation as a Means for Promoting High-level Reading Comprehension

In a meta-analytic study of research on the effects of classroom discussion on students’ reading comprehension, Murphy, Wilkinson, Soter, and Hennesey (2009) identified Instructional Conversation as one of major approaches to conducting intellectually stimulating discussions that are effective in promoting high-level comprehension of text in school settings. Among other approaches that they identified are Collaborative Reasoning, Philosophy for Children, Questioning the Author, Book Club, and Literature Circles. The authors classified these discussion approaches into three categories by the stance that they take: critical-analytic, efferent, and aesthetic. They included IC and Questioning the Author within the efferent stance. The authors define an efferent stance as a text-focused response in which discussion gives prominence to reading to acquire content. According to them, in this stance, the focus is on “the ideas, information, directions, and conclusions to be retained, used or acted on after the reading event” (Rosenblatt, 1978, p. 27, as cited in Murphy et al., 2009). They note, however, that despite differences in focus, all of these discussion approaches have potential to promote students’ high-level thinking and comprehension of text.
Shen (2005), in his review of research on the effects of classroom discussion on English language learners’ reading comprehension, notes that among many approaches to classroom discussion, Book Clubs, Literature Circles, and IC are consistently applied to developing ESL readers’ comprehension. In discussing the implications of his study after presenting a review of the three discussion approaches, he maintains that the IC approach is more practicable for secondary ESL students than Book Clubs and Literature Circles because it is content-based. This content-oriented discussion helps English language learners to overcome two major challenges that confront them, i.e., high academic/cognitive demands and second language proficiency (Gracia, 2003; Faltis & Wolfe, 1999, as cited in Shen, 2005). That is, according to Shen, through IC, not only do English language learners gain opportunities to sharpen their second language communicative skills by interacting with their native English-speaking teacher and peers in subject-area classes, they can also develop their content knowledge and academic cognitive abilities. Here, he is in fact loosely addressing the two major goals of IC discussed earlier in this paper, i.e., conceptual and language development.

**Instructional Conversation as a Means to Scaffold Reading Comprehension**

The results of the two experimental studies reviewed above suggest that instructional conversation can serve as a crucial means to assist English as a second or foreign language learners in their comprehension of reading content, as “content” is defined as encompassing not only literal details but also complex concepts and ideas from text. As we have seen in Saunders and Goldenberg’ (2007) study, students who talked with their teacher about their reading through Instructional Conversation sessions exhibited a deeper, more complex understanding of the reading text than did other students who
reviewed the literal details of the text with the teacher. Further, the IC students also showed a higher or equal level of understanding of the literal details of the text than the recitation group students, whose lessons were devoted exclusively to a review of literal details. Although students in the IC lessons devoted far more time to analysis and interpretation of story content to grasp the potential meanings of the story and its theme than to a review of the literal details of the story, they still ended up understanding the literal details as well or better than the recitation students, whose lessons were focused exclusively on reviewing the story’s literal details. Then, how could they outperform the recitation students in the comprehension of the literal details? One possible interpretation that can be drawn from a synthesis of the authors’ discussions of their analysis of the IC transcripts is that IC served to allow students to solidify their understanding of literal details through the process of analyzing and interpreting story content in relation to a larger theme.

Saunders and Goldenberg’s earlier, 1999 study also showed that IC promotes students’ literal and conceptual understanding of reading content. IC students comprehended not only factual details and text-based interpretations of story events better than the traditional “read and study-alone” group, but they were also more likely to understand the story themes better than the traditional group. Also, the effects of IC were found to be stronger than the effects of literature logs on factual and interpretive comprehension, which suggests that “if teachers have to decide whether to use instructional conversations or literature logs, they should use instructional conversations, which have stronger effects” (Saunders & Goldenberg, 1999, p. 295) These results suggest that IC is not only a more effective means for promoting students’ conceptual
comprehension of reading content as compared to the traditional read-and-study-alone form of teaching, but it is also a more effective means to promote literal comprehension of reading content as compared to other discussion approaches.

Now, given that IC promotes students’ comprehension or understanding of reading content, how would such understanding of reading content impact on writing performance, which is the focus (or the dependent variable) of this study? To put it in another way, how would content knowledge influence students’ writing performance? Would students who have a good understanding of content perform better in their writing than students who do not? This will be the focus of the section that ensues.

Effects of Content Knowledge on Writing Performance and Their Implications for IC

In the preceding section, we saw that results from experimental studies indicated that ESL learners who had participated in ICs showed a better comprehension of reading content than those who had participated in traditional recitation or read-and-study-alone sessions. Now, given these results, how would such an enhanced understanding of reading content which ESL learners gained through participation in IC impact on their writing performance, particularly when the writing performance requires use of the content in reading text? Would students who have an enhanced understanding of the content of the reading text through participation in IC perform better in their writing than students who do not? This is a critically important issue for this study because it seeks to find out the relative effects of IC and other types of post-reading scaffolds (i.e., recitation and control) on EFL learners’ WebQuest writing performance, which involves use of the input text which they have read.
If we find evidence from the extant literature that students with a better understanding of content perform better in writing than students with poorer understanding of the same content, it will provide a basis upon which to predict (or hypothesize) that the IC group, who has gained a better understanding of content through their participation in IC sessions, will perform better in WebQuest writing than the recitation or the control group. In fact, there is a small body of research in the extant literature that provides such a basis. It is a group of research studies on the effects of content knowledge on writing performance. Thus, this section will provide a review of this body of research, followed by a brief discussion.

Studies on the Effects of Content Knowledge on Writing Performance

Tedick (1990) investigated the effects of subject-matter knowledge on ESL students’ writing performance. 105 international graduate students representing three ESL course levels at a Midwestern university participated in the study. The participants responded to two topics: One was a topic chosen by the researcher from a news magazine, and the other was a topic of their own choice that pertained to their field of study. The feature of the latter topic enabled the researcher to assume that subjects were writing on subject matter with which they were familiar. The participants first wrote on the topic from the news magazine during their regular class periods, and three weeks later, they wrote on the field-specific topic also during their regular class times. The essays were scored on the basis of (a) overall writing quality, as measured by holistic scores; (b) fluency, as measured by overall length; and (c) syntactic complexity, as measured by the mean length of T-units. Results indicated that the mean scores for all of these writing measures increased in general across the three course levels when subjects wrote on the
field-specific, familiar topic. The author concludes that the subject matter of topics needs to be familiar to ESL students so that, in being able to use their prior subject-matter content knowledge, they will be encouraged to take risks in writing.

Another study, conducted by Winfield and Barnes-Felfeli (1982), also investigated the effects of prior content knowledge on writing in ESL context. These researchers studied the effects of cultural familiarity on the writing of ESL students at the university level. They found that participants who were culturally familiar with the subject matter of the writing stimulus produced more words on that topic (i.e., more fluent writing) than on the topic with which they were unfamiliar. Cultural familiarity also resulted in higher measures of grammaticality and mean T-unit length; however, they were not found to be statistically significant.

In the area of first language, Langer (1984) investigated the relationships between topic-specific background knowledge and measures of overall writing quality, coherence, and syntactic complexity in expository writing. 97 students from four 10th grade American history classes completed two essays at different points during the semester. Prior to writing, students were assessed on their topic-specific knowledge, and the knowledge measures were scored for three categories: fluency, organization, and combined. Results revealed a strong relationship between all the three categories of prior topical knowledge and overall writing quality, as measured by holistic scores on the students’ writings. A strong relationship was also found between the combined category (which represented the two highest levels of topic specific knowledge) and coherence, as measure by interaction among cohesive chains. Langer concludes that while there is generally a strong and consistent relationship between topic-specific knowledge and
students’ writing performance, it should also be noted that different kinds of knowledge are predictive of success in different writing tasks.

McCutchen (1986) reported a developmental study of domain knowledge effects in writing. Psycholinguistic analyses of 240 elementary school texts, involving use of a mixed-effects analysis of variance, led to a number of findings. Of the multiple sources of knowledge that contributed to students’ writing, the effect of topical knowledge was found to be the clearest: (a) Children generated more coherent texts about topics they knew well. (b) They also produced longer texts they knew well, although the length differences were not statistically significant. Data suggested that the added length resulted from an increase in the number of main points that the children described. (c) In addition, children who were knowledgeable about the topic added elaborative details about specific content, while low-knowledge children did not. In short, higher content knowledge led to higher levels of coherence, fluency, and elaboration on content in writing.

Using Langer’s (1984) “combined” category of topic-specific knowledge, Chesky and Hiebert (1987) examined the effects of low and high prior knowledge on high school students’ writing. 40 high school juniors wrote an essay on a topic on which they had low prior knowledge, and another 40 high school juniors wrote on a topic on which they had high prior knowledge. Results indicated that writings produced by students with high prior knowledge were superior in overall writing quality (as measured by holistic scores), fluency (as measured by essay length), and manifestation of context-creating statements than writings produced by students with low prior knowledge. However, no significant differences were found in the number of spelling and grammatical errors and in syntactic
complexity, as measured by the mean length of T-unit (i.e., the mean number of words per essay divided by the mean number of T-units per assignment).

The results of Chesky and Hiebert’s (1987) study support Langer’s (1984) earlier finding that students’ prior content knowledge correlated positively with their overall writing quality. The results are also consistent with Tedick’s (1990) finding in the L2 area that ESL students exhibited better overall writing quality and increased writing fluency when they wrote on a topic on which they had a higher prior knowledge. As for syntactic complexity, however, the finding that there was no significant difference in mean T-unit length measures between the two groups is not consistent with the result on the mean length of T-units reported in Tedick’s study. With regard to this inconsistency, Tedick indicates that the differences between L1 and L2 writers may explain the inconsistency; for example, L2 writers may demonstrate more variability than L1 writers in terms of the syntactic complexity of their writing, depending on the subject matter of the writing stimulus.

**Implications of the Studies Reviewed for the Effects of IC on Writing Performance**

The researchers of the studies reviewed above did not investigate the same aspects (or components) of writing performance. Overall, however, we can see that they investigated such aspects of writing performance as (a) overall writing quality, (b) fluency, (c) syntactic complexity, and (d) coherence. One of the researchers (i.e., McCutchen, 1986) additionally reported on the “content” of student writings. Also, two of them (i.e., Chesky and Hiebert, 1987; Winfield & Barnes-Felfeli, 1982) additionally studied “grammar” in student writings.
In general, the results of the studies suggest that higher topic-related content knowledge leads to better writing (with the exception of grammatical accuracy); that is, students with relatively higher topic-related content knowledge perform better in writing (on the topic) than students with relatively lower topic-related content knowledge. Specifically, the results of the studies suggest that the writings of students with relatively higher topic-related content knowledge exhibit better overall writing quality and higher levels of fluency, syntactic complexity (in the L2 area), and coherence compared to the writings of students with relatively lower topic-related content knowledge.

Then, to extend the results of the studies further to the context of IC, the results suggest that IC students, who have gained a better understanding of content through participation in ICs, will likely perform better in writing when the writing requires use of the content. Specifically, the results suggest that these IC students’ writings will likely exhibit better overall writing quality and higher levels of fluency, syntactic complexity, and coherence (i.e., organization) compared to the writings of students who participated in traditional recitation or read-and-study-alone sessions. As for the content of writings, although only one of the studies (i.e., McCutchen, 1986) examined the content of student writings and found a significant difference between the low and high content knowledge groups, this finding alone still suggest to a certain extent that there is likelihood that IC students’ writings will exhibit more elaborate content because they have a higher level of content understanding. In addition, and importantly, while none of the three researchers who investigated overall writing quality (Tedick, 1990; Langer, 1984; Chesky & Hiebert, 1987) indicate what criteria were used in holistically scoring their participants’ writings -- as other researchers, such as Kern and Schultz (1992), did -- they presumably included
content as a criterion for the holistic scoring (see Weigle, 2002, who makes a distinction between holistic scoring and general impression marking). This is because since the emergence of the process approach to writing, content and organization (e.g., coherence) of writing (as opposed to grammar) have widely been considered to be important components of writing ability (see Hillcocks, 1986, 1987; Horowitz, 1986). Thus, content has usually been used as a criterion for holistic scoring of writing (see Weigle, 2002). Assuming that content was used as a criterion for the holistic scorings in the three studies, we could say that the results of the studies suggest that IC students, who have gained a better understanding of content through participation in IC, will likely exhibit superior content in their writings.\(^\text{13}\)

**Tracers: Transfer of IC Discussions to Student Writing**

In the section before the preceding one, I addressed IC as a means to scaffold reading comprehension. That is, based upon the results of the experimental studies reviewed, as well as Goldenberg’s (1991, 1992/1993) earlier theoretical works, I addressed the point that instructional conversation can serve as a crucial means to assist English as a second or foreign language learners in their comprehension of reading content, as “content” is defined as encompassing not only literal details but also complex concepts and ideas from text. Then, in the preceding section, applying the results of the studies on the effects of content knowledge on writing performance to the IC context, I indicated that the results suggest that IC students, who have gained a better (or deeper) understanding of content through participation in IC sessions, will likely perform better in writing when

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\(^{13}\) Weigle (2002), a widely recognized authority on writing assessment, makes a distinction between holistic scoring and general impression marking by stating that “[t]he existence of a scoring rubric distinguishes holistic scoring from its earlier, less reliable predecessor, general impression marking, in which criteria are never explicitly stated” (p. 112).
the writing requires use of the content. Also, applying the same results to the IC context, I indicated more specifically that the results suggest that these IC students’ writings will likely exhibit better overall writing quality, higher levels of fluency, syntactic complexity, and coherence, and superior content compared to the writings of students who participated in traditional sessions.

Given this, the results from this body of research clearly provide a good basis for predicting that IC students will likely perform better in writing than students who have participated in traditional sessions such as recitation and read-and-study-alone. In this regard, there is some evidence that would support the prediction that IC students are likely to perform better in writing. The evidence is the results of a longitudinal study by Patthey-Chavez and Clare (1996).

*The Intertextual Link between Talk and Writing and Writing Performance*

In a longitudinal study spanning over an academic year, Patthey-Chavez and Clare (1996) traced the (re)emergence in student writings of the concepts, ideas, and interpretations co-constructed during ICs, as well as examined the development of linguistic features in the student writings. Five fourth-grade English language learners enrolled in a transitional bilingual program at a K-5 elementary school in California, along with their teacher, participated in the study. Data consisted of transcripts from 20 audio- and videotaped IC lessons and five portfolios from the five student participants, each of which consisted of journal entries, essays, and creative short stories. Using the concept of “tracer” as advanced by Newman, Griffin, and Cole (1989), the process of co-construction of ideas, concepts, and interpretations during IC lessons was examined by analyzing the specific contributions of the teacher and the students during the lessons and
by tracing their (re)emergence in student writings. The development of linguistic features in student writings was examined by assessing changes across nine selected texts per student (a total of 45 texts) from the beginning, middle and end of the academic year. The categories of variables examined were (a) fluency, (b) syntactic complexity, and (c) lexical variety. The number of words per writing piece alone constituted the category of fluency. The syntactic complexity category consisted of four linguistic variables, including T-unit length, while the lexical variety category consisted of three variables, including the Type-Token Ratio. The longitudinal changes were coded as “showing longitudinal improvement” “remaining the same” or “showing no improvement.”

Results from the first, qualitative analysis indicated that concepts, ideas and interpretations from the IC discussions reappeared in the students’ writings; that is, what students and the teacher discussed during the IC sessions left traces in students’ writings. Results from the second, quantitative linguistic feature analysis revealed that overall all the five writers improved over time. One student improved on all of the eight measures, and three students on most of the eight measures. The worst student in terms of improvement still showed improvements on fluency, three of the four syntactic complexity variables, and one of the two lexical variety variables. For the category of fluency (or the length of writing), all the five students showed an improvement. As for the syntactic category, all students improved on T-unit length and coordinating conjunctions, but for additive conjunctions and subordination, three and four students, respectively, showed an improvement. As for lexical variety, four students improved on the Type-Token Ratio (which is the most widely used measure of lexical complexity), while one student showed “no improvement” on that measure. Then, generally, all
students made improvements in all the three categories of linguistic features, i.e., fluency, syntactic complexity, and lexical variety. In terms of individual variables, the students’ improvements were most noticeable in fluency, as measured by the number of words, and syntactic complexity, as measured by T-unit length.

**Transfer of IC Discussions to Student Writing**

In an earlier section where experimental studies on the effects of IC on reading comprehension was reviewed, we saw that Saunders and Goldenberg’s (2007) study found that most of the IC students displayed a more complex and differentiated conceptualization of friendship in their writing and that students in the IC group understood the literal details of the story as well or better than students in the recitation group. Here, the more complex and differentiated conceptualization of friendship manifested in the IC students’ writing was in fact a result of the transfer of what is called a “tracer” to their writing (see Newman, Griffin, & Cole, 1989, as cited in Patthey-Chavez & Clare, 1996). In their discussion of the result of IC students’ displaying a more complex and differentiated conceptualization of friendship in their writings, Saunders and Goldenberg, drawing the concept of “tracer” from Patthey-Chavez and Clare’s (1996) earlier study, stated that the “tracer,” i.e., evidence of a more complex and differentiated view of friendship, was evident in the post lesson essay writings for a majority of the IC students but in very few of the post-lesson essay writings for the recitation students, i.e., students who engaged in lower-level question-answer exchanges about the factual details of the text at hand.

While Saunders and Goldenberg (2007) did not elaborate on the notion of tracer in their paper, Patthey-Chavez and Clare’s (1996) study, as we have seen, is largely devoted
to the intertextual link between talk (i.e., IC) and writing, which involves the notion of tracer. Patthey-Chavez and Clare’s discussion of the results of their study is centered around two points. First, results from the first, qualitative analysis show that concepts, ideas, and interpretations co-constructed during IC discussions transfer to students’ writings and become manifested in their writings. This in turn demonstrates that students in fact engaged in co-construction of concepts, ideas, and interpretations during IC discussions prior to their writing; or, to borrow Goldenberg’s (1991, 1992/1993) terms, students in fact engaged in the process of gaining deeper, differentiated, or higher-level understanding of concepts and ideas during ICs prior to their writing. This in turn is related to IC’ goal of conceptual development; that is, students’ actual engagement in this process during ICs leads to their conceptual development.

The second point represents the essence of the results of Patthey-Chavez and Clare’s (1996) study. Results from the second, quantitative analysis indicated that the writings of the five students showed improvements in all the three areas of fluency, syntactic complexity, and lexical variety. Given these, results from the first, qualitative analysis provides powerful evidence that the linguistic improvements in their writing resulted from the transfer of their IC discussions to their writing. In other words, in view of the finding from the first, qualitative analysis that IC discussions leave their traces in student writings, students’ linguistic improvements in all the areas of fluency, syntactic complexity, and lexical variety are a result of the transfer of IC discussions to their writing. After establishing this connection, Patthey-Chavez and Clare (1996) argue that “the complexity and breadth of material broached in the classroom talk provided the second language learners in Mrs. Fiske’s class with the right kind of language input and
interaction for second language development. By the right kind input and interaction, we mean input that was challenging, input within our student writers’ zones of proximal development …” (p. 553). This connection, which stemmed from empirical data, is indeed powerful.

Then, the results of Patthey-Chavez and Clare’s (1996) study provides support for the prediction that IC students will likely perform better in writing, particularly, in the areas of fluency, syntactic complexity, and lexical variety/complexity. As we have seen, this better writing would stem from IC discussions per se, where students gain deeper or higher-level understanding of reading content through the process of co-constructing ideas and concepts. Since IC discussions have been found to leave traces in student writings both linguistically and conceptually, knowing the characteristics of IC would be important in understanding IC students’ writing performance.

Summary

I began this chapter by indicating that Tharp and Gallimore’s (1988, 1990, 1991) theory of teaching as assisting performance and their conceptualization of Instructional Conversation (IC) as the critical form of assisting performance, and the culminating model of IC developed by Goldenberg (1991, 1992/1993) had provided a theoretical foundation for this study. Since they all drew on Vygotsky’s sociohistorical theory, I first reviewed the relevant elements of Vygotskian theory. This was followed by a review of Tharp and Gallimore’s teaching theory, their conceptualization of IC, and, finally, the IC model.

Then, the WebQuest needed to be somehow defined within the context of language learning and teaching because this study investigates English as a foreign language
learners’ WebQuest writing performance and because the WebQuest was originally
designed for content-area learning and teaching, not language learning and teaching.
Thus, with the intent of conceptualizing and defining a WebQuest as a lesson format for
task-based language teaching with technology, I reviewed the literature on shifting
perspectives on language learning and teaching in general and on CALL in particular and
then situated task-based language teaching with technology within the paradigm of
sociocognitive approaches to CALL (see the section entitled “Sociocognitive Approaches
to CALL and Task-based Language Teaching”). Building upon this, I then developed a
view, or a definition, of a WebQuest as a lesson format for task-based language teaching
within the sociocognitive CALL paradigm. This was done by reviewing the relevant
literatures on the WebQuest and task-based language learning/teaching and comparing
the characteristics of tasks, lesson designs, and participatory structures employed in task-
based language teaching and WebQuests (see the section entitled “A WebQuest as a
Lesson Format for Task-based Language Teaching within the Sociocognitive CALL
Paradigm).

This was followed by a review of the literature on IC and recitation and a
presentation of a comparative analysis of them, using the 10 IC elements as a framework
(see the section entitled “Instructional Conversation, Recitation, and Their Comparison).
Following this, I addressed IC as a means to scaffold reading comprehension, based upon
a review of experimental studies on the effects of IC on ESL learners’ reading
comprehension; this was done with the purpose of developing in the ensuing section a
point that enhanced reading comprehension gained through participation in IC would lead
to better writing performance (see “Instructional Conversation as a Means to Scaffold
Then, building upon this, I reviewed a body of research studies that investigated the effects of content knowledge on writing performance. Based upon this review, I indicated that the results of the studies provided a sound basis upon which to predict that IC students, who have gained a better understanding of reading content through participation in IC, will perform better in WebQuest writing than recitation or read-and-study-alone students, who, as the results of the experimental studies reviewed earlier indicated, have gained a lower-level understanding of the same reading content. I further indicated that, specifically, the results of the studies enabled us to predict that IC students will perform better in such areas of writing as overall writing quality, fluency, syntactic complexity, coherence (or organization), and content (see “Effects of Content Knowledge on Writing Performance and Their Implications for IC”). Following this, I provided some evidence that would support IC students’ superior performance in WebQuest writing, i.e., results from a study on intertextual links between IC and writing. In discussing the study’s results, I indicated that the results provided support for the prediction that IC student will perform better in writing, particularly in the areas of fluency, syntactic complexity, and lexical complexity (see the last section, entitled “Tracers: Transfer of IC Discussions to Student Writing”).

The Literature Reviewed, the Educational Problem, and the Central Focus of the Study

The literature reviewed in this chapter suggests that teachers of a foreign or second language need to pursue principled use of technology based upon theoretically sound frameworks drawn from the literature on language learning and teaching in general and on CALL in particular, as well as the literature on education more broadly. Particularly, the literature reviewed suggests that whereas technology, as used to implement recitation
or read-and-study-alone sessions, may limit students’ conceptual understanding and
language development, technology, as used to implement IC, will likely promote
students’ conceptual and language development, which, as noted earlier, is the dual goal
of IC. Furthermore, the literature reviewed suggests that WebQuests can be used as a
critical task-based language lesson format and that a WebQuest by design will serve to
foster students’ higher-order thinking when used in a task-based language lesson. In
addition, since IC, in contrast to recitation and read-and-study alone, is considered to help
improve second language learners’ writing performance, as we have seen in the literature
review, it can also be said that the literature suggests that IC-supported WebQuests may
serve to improve language learners’ writing performance. Then, all these taken together,
the extant literature reviewed suggests that teachers of a foreign or second language need
to pursue principled use of technology based upon theoretically sound frameworks drawn
from the literature on language teaching and learning in general and on CALL in
particular, as well as the literature on education more broadly. In short, the literature
reviewed in this chapter adequately addresses the educational problem presented in the
beginning of Chapter 1.

Through the literature reviewed in this chapter, we have seen the potential of IC as a
crucial means for improving ESL/EFL learners’ WebQuest writing performance.
Particularly, from the results of experimental studies on the effects of IC on English
language learners’ reading comprehension and the results of studies on the effects of
content knowledge on writing performance, we have seen that there is a great likelihood
that IC students, who have gained a better understanding of reading content through
participation in IC sessions, will likely perform better in WebQuest writing than students
who participated in traditional sessions such as recitations and read-and-study-alone. More specifically, we have noted that these IC students will likely show a superior writing performance in the areas of overall writing quality, fluency, syntactic/lexical complexities, coherence, and content. The results from the two bodies of research suggest the potential of IC as a critical means for facilitating EFL/ESL learners’ comprehension of WebQuest readings and hence improving their WebQuest writing performance, especially as it is compared to traditional methods such as recitation and read-and-study-alone.

Despite this potential of IC, there has been no study to date that investigated either the effect of incorporating IC as a post-reading scaffold into a WebQuest lesson or the effects of IC vs. recitation on foreign/second language learners’ WebQuest writing performance. As a result, no study to date has investigated the relative effects of IC vs. no post-reading instructional scaffold vs. recitation on EFL or ESL learners’ WebQuest writing performance.

The next chapter, where the study’s methods are discussed, will begin with a restatement of the study’s purpose, research questions, and hypotheses. The philosophical assumptions which informed the conduct of this mixed methods study will subsequently be presented. This will be followed by a presentation of the research design for the entire study. After this, I will describe the methods used for each of the two phases of the study: quantitative followed by qualitative. Validity approaches will be discussed for each phase of the study. Finally, strategies used to cope with potential ethical issues associated with both parts of the study will be discussed.
CHAPTER 3: METHOD

Restatements of the Study’s Purpose, Research Questions, and Hypotheses

Purpose Statement

The purpose of this mixed methods study was to investigate the effects of types of post-reading instructional scaffolds on university-level English as a foreign language (EFL) learners’ WebQuest writing performance, as well as to identify aspects and features of IC and IC discourse that might have assisted the learners in their WebQuest writing performance. An explanatory sequential design (Creswell & Plano Clark, 2007, 2011) was used, which involved collecting and analyzing quantitative data first and then explaining the quantitative results with qualitative data. In the first, quantitative phase of the study, the effects of three post-reading instructional scaffolds, as provided in EFL WebQuest lessons, were studied: (a) online Instructional Conversation; (b) online recitation; and (c) no post-reading instructional scaffold, which was traditional. The second, qualitative phase was conducted as a follow-up to the quantitative results to help explain the quantitative results.

Research Questions

The following research questions were posed, with the first and second questions consisting of two and three subquestions, respectively:

1. What are the relative effects of online IC vs. online recitation vs. no post-reading instructional scaffold on EFL learners’ WebQuest writing performance?
   (a) What are their relative effects on the overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively, of EFL learners’ WebQuest writing?
(b) What are their relative effects on EFL learners’ overall WebQuest writing performance?

2. What aspects and features of IC and IC discourse may have assisted the EFL learners in the online IC group in their WebQuest writing performance?

(a) What aspects and features of IC and IC discourse may have assisted them in their overall WebQuest writing performance?

(b) What aspects/features of IC and IC discourse may have assisted them in their WebQuest writing performance in the area of content?

(c) What aspects/features of IC and IC discourse may have assisted them in their WebQuest writing performance in the area of overall writing quality?

3. In what ways do the qualitative data help to explain the quantitative results?

As will be explicated in some detail in the section on research design in this Chapter, due to the nature of the study’s design, the overarching qualitative research question (i.e., question 2) and the mixed methods question (i.e., question 3) were originally posed tentatively and later finalized after quantitative results were obtained. At this point, three qualitative subquestions (i.e., 2(a), 2(b), and 2(c)) were developed based upon the quantitative results and subsumed under the overarching qualitative research question. As for the mixed methods question, while many researchers render it implicit, I included it, following Creswell and Plano Clark’s (2007, 2011) recommendation.

*Statement of the Hypotheses*

As we saw in Chapter 2, results from Saunders and Goldenberg’s (1999, 2007) experimental studies indicated that ESL learners who had participated in ICs showed a better comprehension of reading content than those who had participated in recitation or
read-and-study-alone sessions. On the other hand, results from a body of studies that investigated the effects of content knowledge on writing performance suggested that students with higher content knowledge perform better in writing, particularly in the areas of overall writing quality, content, fluency, and syntactic complexity (Chesky & Hiebert, 1987; Langer, 1984; McCutchen, 1986; Tedick, 1990). Then, these results, taken together, provide a basis upon which to predict that IC students, who have gained a better understanding of content through participation in IC, will perform better in the areas of overall writing quality, content, fluency, and syntactic complexity than recitation or read-and-study-alone students, who, as the results of the experimental studies indicated, have gained a lower-level understanding of the same content. In addition, results from Patthy-Chavez and Clare’s (1996) longitudinal study of ESL students, which revealed improvements of IC students’ writings in the areas of fluency, syntactic complexity, and lexical complexity, provide further support for a prediction that IC students will perform better in these areas of writing.

Thus, based upon the results of these studies, it was hypothesized that types of post-reading instructional scaffolds would impact EFL learners’ overall WebQuest writing performance and, specifically, their performance in the areas of overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively. More specifically, the following hypotheses were posed.

1. Online Instructional Conversation about WebQuest readings will lead to better overall WebQuest writing performance by EFL students than traditional, no post-reading instructional scaffold. Specifically, online IC will lead to better WebQuest writing
performance in the areas of overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively.

2. Online Instructional Conversation about WebQuest readings will lead to better overall WebQuest writing performance than an online recitation review of the readings. Specifically, online IC will lead to better WebQuest writing performance in the areas of overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively.

Philosophical Assumptions

This mixed methods study was guided by the multiple paradigms (or worldviews) of postpositivism and constructivism. The philosophical assumptions represented by postpositivism informed the conduct of the first, quantitative phase of the study, while those represented by constructivism informed the conduct of the second, qualitative phase of the study. The reason for using two paradigms in lieu of just one was that any single paradigm -- particularly, pragmatism -- did not seem to fit the design and methods of this study. Although pragmatism may serve as an appropriate philosophical framework for mixed methods studies in which the researcher collects both quantitative and qualitative data in the same phase of the research process, for a study like this that involved use of quantitative and qualitative methods in two distinct phases (i.e., quantitative followed by qualitative), using a separate paradigm for each phase of the study seemed to be more appropriate, as suggested by some influential mixed-methods research methodologists (e.g., Creswell & Plano Clark, 2007, 2011; Creswell, Plano Clark, Gutmann, & Hanson, 2003).
The philosophical assumptions represented by postpositivism and constructivism, which served to shape the development of the study’s first and second phase, respectively, consist of stances toward the nature of reality (ontology), how the researcher gains knowledge of what he or she knows or what the relationship between the researcher and that being researched is (epistemology), the methods used in the process of research (methodology), and the role of values in the research (axiology) (Creswell, 2007; Creswell & Plano Clark, 2007, 2011; Denzin & Lincoln, 1998; Guba & Lincoln, 1988). In the first, quantitative phase, the researcher was guided by the postpositivist assumptions (a) that there exists a single reality (ontological); (b) that the researcher attempts to maximize distance between himself/herself and that being researched (epistemological); (c) that the researcher is unbiased and that research is value-free (axiological); and (d) that the researcher uses deductive logic (methodological) (Creswell, 2007; Creswell & Plano Clark, 2007, 2011). Thus, for example, in the first phase of this study, I engaged in a hypothesis testing in which I rejected or failed to reject the (null) hypothesis (in line with the ontological assumption of a single reality, as seen by participants in the study); objectively collected data on testing instruments (epistemological); used various checks to eliminate bias and tried to minimize, whenever possible, my own subjective interpretations, as well as the subjective interpretations of the participants (axiological); and worked from the “top” down, from a theory to hypothesis to data, to confirm (or less desirably, contradict) the hypothesis/theory (methodological).

By contrast, in the second phase of the study, the researcher was guided by completely different, and contrasting, philosophical assumptions, i.e., those of
constructivism. In this second, qualitative phase of the study, the researcher operated under the constructivist assumptions (a) that reality is subjective and multiple, as seen by participants in the study (ontological); (b) that the researcher attempts to lessen distance between himself/herself and that being researched (epistemological); (c) that the researcher acknowledges that research is value-laden and that biases are present (axiological); and (d) the researcher uses inductive logic, as well as an emergent design (methodological) (Creswell, 2007). Thus, for example, in the second phase of this study, I used quotes in words of the participants and presented themes based upon the multiple meanings, or to put it differently, based upon “multiple constructed realities” (Denzin & Lincoln, 1998, p. 26; see also Lincoln & Guba, 1985) represented by the different participants (ontological); visited the participants at their site to collect data (epistemological); included in the research report my own interpretations, as well as the participants’ interpretations (axiological); and worked from the “bottom” up, using the participants’ views to build broader themes (methodological).

In short, I shifted from the postpositivist worldview in the first phase of the study into the constructivist worldview in the second phase. The use of these multiple paradigms in this study was grounded largely on Creswell and Plano Clark’s (2007, 2011) view that worldviews (or paradigms – these two terms are often used synonymously) relate to types of mixed methods designs, that the worldviews can change during a study, and that the worldview may be tied to different phases in the study. I believe that the use of these two paradigms better fit the design and conduct of this particular study than the
use of a single paradigm, especially pragmatism, which has traditionally been suggested as the single best paradigm that can encompass all types of mixed methods studies.  

Research Design

To answer the research questions, a mixed methods approach, as advanced by Creswell and Plano Clark (2007, 2011), was used. Accordingly, for this study, mixed methods research was defined as “a research design with philosophical assumptions as well as methods of inquiry” (Creswell & Plano Clark, 2007, p. 5) which involves the researcher in collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies; framing these procedures within philosophical worldviews (single or multiple); and combining the procedures into a specific research design that directs the plan for conducting the study (Creswell & Plano Clark, 2007, 2011). This definition combines methods, philosophy, and research design orientations, and the methods orientation of the definition, as contrasted to a methodological orientation (i.e., mixing quantitative and qualitative research throughout the entire study), reflects incorporation of many diverse viewpoints concerning the notion of mix methods research (Creswell & Plano Clark, 2011). The rationale for the combined use of both types of methods is that when used in combination, quantitative and qualitative methods

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14 I agree to Howe and Eisenhart’s (1990) assertion that “positivism is no longer a tenable [philosophical] position [because] no social research (nor even physics for that matter) is accurately portrayed by positivism” (p. 3). This assertion is intended in part to advocate postpositivism as the appropriate research paradigm for quantitative researchers. It makes sense in that as Bredo (2006) indicated, a major difference between positivism and postpositivism consists in the view of the relationship between observations (facts) and theory; unlike positivists, postpositivists hold that observations are theory-laden. Since no research today is free from theory, it follows that positivism is no longer a tenable philosophical position. Therefore, for the first, quantitative phase of this study, I drew on postpositivism, rather than positivism. Yet, it should be noted that abandoning the use of the term “positivism” does not mean abandoning standards for objectivity and rationality in this phase of research.
provide a better understanding of research problems than when either is used alone (Creswell & Plano Clark, 2007; Johnson, Onwuegbuzie, & Turner, 2007).

This study employed an explanatory sequential design, consisting of two distinct phases: quantitative followed by qualitative (Creswell & Plano Clark, 2007, 2011; Creswell et al., 2003). In this design, the researcher first collects and analyzes the quantitative, numeric data. Then, the qualitative, textual data are collected and analyzed second in the sequence, and they help explain the quantitative results obtained in the first phase. The second, qualitative phase builds upon the first, quantitative phase, and the two phases become connected in the intermediate stage in the study when the researcher uses the results from the first phase to shape the collection of data in the second phase. The purpose of this design is to use qualitative data to explain, build upon, and/or elaborate on initial quantitative results.

In this study, the quantitative results, obtained in the first phase, enabled the researcher to identify specific findings that needed further explanation and/or elaboration, such as statistically significant results, outlier results, or surprising results (see Creswell & Plano Clark, 2011). Upon determining the statistically significant quantitative results that needed to be explained, the researcher developed qualitative research questions and a mixed methods question, selected participants who could best explain those results, and then developed qualitative data collection protocols. This represented the intermediate stage in the research process, the point where the quantitative results connected (or built) to qualitative data collection. Following this middle stage, qualitative data collection and analysis took place. These qualitative data and their analysis refined and helped to
explain the statistical results by exploring participants’ views or meanings in more depth (Creswell, 2003; Creswell & Plano Clark, 2007, 2011; Tashakkori & Teddlie, 1998).

Because of the existence in this design of the intermediate stage just mentioned, the qualitative research question (i.e., question 2) and the mixed method question (question 3) were originally posed tentatively; that is, assuming that results would be obtained as hypothesized, those questions were tentatively posed in advance. Upon obtaining some expected results, the overarching qualitative research question (i.e., question 2) and the mixed methods question were finalized, and at this point, three qualitative subquestions (i.e., 2(a), 2(b), and 2(c)) were developed based upon the quantitative results.

In terms of emphasis or priority, more emphasis was placed on the quantitative phase of the study than its qualitative phase because the design began quantitatively and the second phase followed from the results of the first, quantitative phase. Although this is typically the case with the explanatory sequential design (see Creswell & Plano Clark, 2007, 2011 for a discussion), yet, thorough and persuasive qualitative data collection and analysis procedures were designed and implemented in this study. The quantitative and qualitative phases became connected when selecting three IC participants and their online IC discussion texts for identification of aspects and features of IC and IC discourse that might have assisted them in their WebQuest writing performance and subsequently developing the interview protocol, based on the results from the statistical tests from the first phase. As for the interpretation of the results of the study, findings from the quantitative and qualitative phases were first interpreted separately. They were then integrated to interpret the results in terms of the mixed-methods research question, i.e., “In what ways do the qualitative data help to explain the quantitative results?” Figure 3
presents a diagram of the procedures of this study, which employed an explanatory sequential design.
**Figure 3.** Visual representation of mixed methods sequential explanatory design procedures

<table>
<thead>
<tr>
<th>Phase</th>
<th>Procedure</th>
<th>Product/Outcome</th>
</tr>
</thead>
</table>
| QUANTITATIVE Data Collection | • Administration of treatments to three groups: online IC, online recitation, and control  
• Pretest and posttest before and after the treatments | • Numeric data (scores) |
| QUANTITATIVE Data Analysis | • Data screening  
• Multivariate analysis of covariance (MANCOVA), ANCOVAs/ANOVA, and post-hoc comparisons | • Descriptive statistics  
• Test statistics |
| **Intermediate Stage** | • Determining specific quantitative results needing explanation  
• Developing qualitative and mixed methods questions  
• Purposefully selecting three IC participants for interviews and their IC discussion texts  
• Developing the interview protocol | • Qualitative and mixed methods questions  
• Interview protocol |
| Qualitative Data Collection | • Conducting one-on-one (open-ended) semi-structured interviews with the three IC participants  
• Locating and printing texts from the online IC sessions in which the three interviewees participated | • Textual data (interview transcripts)  
• Textual data (online IC discussion texts) |
| Qualitative Data Analysis | • Coding and thematic analysis  
• Within-case and cross-case theme development  
• Cross-case thematic analysis  
• Analysis of IC transcripts for corroboration | • Codes, themes, and quotes |
| Interpretation of the Results | • Interpretation of the quantitative and qualitative results, respectively  
• Integrated interpretation of the quantitative and qualitative results (meta-inferences) | • Discussion  
• Implications  
• Future research |
Quantitative Phase

Participants and Sampling

Participants and Setting

104 EFL students, randomly selected from 8 English for academic purposes (EAP) classes at a large, private university in Seoul, Korea, participated in this quantitative part of the study. They were mostly first-year students at the university who were taking the EAP course to fulfill the university’s foreign language requirement. The ethnicity of the vast majority of the participants (97%) was Korean, and thus, their first language was predominantly Korean. The participants included three international students (3%) from Russia and South East Asian nations. Most of the Korean participants had been learning EFL as a compulsory subject for approximately 11 years since their third year in elementary school. As the Korean language was used as a nearly exclusive means for communication in the country, the Korean participants had had little opportunity to use English outside the classroom.

This three-credit EFL course was a semester-long course, and the EFL division of the university had been running the course as an EAP course for the past few years. All of the EAP classes were taught by native speakers of English, most of whom were from North America. For most of the participants, this was the only EFL course that they were taking during the semester, and they were supposed to continue to take one EFL course each semester until the end of their sophomore year.

Sampling

The population to which this quantitative part of the study sought to generalize its results was university-level EFL students; hence, generalization beyond the population
from which the sample was randomly selected was to be argued on a logical basis (see Wiersma & Jurs, 2005 for a discussion of logical generalization vs. statistical generalization). Participants were randomly selected from a larger population of 8 EFL/EAP classes at the Korean university, using the stratified random sampling strategy (see Wiersma & Jurs, 2005). In employing this approach to random sampling, I considered each of the 8 classes a subpopulation, or a stratum, and randomly selected sample members from each class, rather than from the entire population of the 8 classes as a whole. In other words, after stratifying, or dividing, the population (8 classes as a whole) into its subpopulations (i.e., into individual classes), I selected participants from each of the subpopulations, i.e., each of the 8 classes.

The decision about the number (i.e., allocation) to be selected from each stratum for the sample was made, drawing on the allocation method called “equal allocation” (Wiersma & Jurs, 2005). In equal allocation, equal numbers of participants are selected from the strata. Thus, using this method, I selected 15 participants from each of the 8 classes, and this produced an initial sample of 120 participants for this study. The final sample, however, consisted of 104 participants due to participant attrition. Figure 4 represents these sampling procedures.
**Figure 4.** Stratified random sampling procedures involving equal allocation for the first, quantitative part of the study

<table>
<thead>
<tr>
<th>Strata (Class)</th>
<th>Number of Participants Selected from Each Stratum (Class)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1 (e.g., 25 students)</td>
<td>Random Selection → 15</td>
</tr>
<tr>
<td>Class 2 (e.g., 26 students)</td>
<td>Random Selection → 15</td>
</tr>
<tr>
<td>Class 3 (e.g., 23 students)</td>
<td>Random Selection → 15</td>
</tr>
<tr>
<td>Class 7 (e.g., 20 students)</td>
<td>Random Selection → 15</td>
</tr>
<tr>
<td>Class 8 (e.g., 28 students)</td>
<td>Random Selection → 15</td>
</tr>
</tbody>
</table>

• Initial total sample size (N) = 8 x 15 = 120

• Final total sample size (after participant attrition) (N) = 104

N=120

**Design**

For this first, quantitative phase of the study, an experimental, pretest-posttest control group design (Wiersma & Jurs, 2005) was used. The independent variable was type of post-reading instructional scaffold, consisting of three levels: (a) online Instructional Conversation (IC); (b) online recitation, and (c) no post-reading instructional scaffold, which is traditional. There were six dependent variables: (a) EFL learners’ overall WebQuest writing performance and their WebQuest writing performance in the specific areas of (b) overall writing quality, (c) content, (d) fluency, (e) syntactic complexity, and (f) lexical complexity.
Using the blocked random assignment method (Bloom, Bos, & Lee, 1999), 120 randomly selected participants were randomly assigned to one of three conditions: online IC, online recitation, or no post-reading instructional scaffold. Blocks of 15 participants, who had been randomly selected from each of the 8 classes, were randomly assigned by block to one of the three treatment conditions, rather than the entire initial sample of 120 participants were randomly assigned to one of the conditions as in simple random assignment. The process of this blocked random assignment is visually represented in Figure 5.
Figure 5. Blocked random assignment of participants to treatment conditions

<table>
<thead>
<tr>
<th>Participant Blocks</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>15 students randomly selected from Class 1</td>
<td>Online IC (n=40)</td>
</tr>
<tr>
<td>15 students randomly selected from Class 2</td>
<td>Online Recitation (n=40)</td>
</tr>
<tr>
<td>15 students randomly selected from Class 7</td>
<td>No Post-reading Instructional Scaffold (Control) (n=40)</td>
</tr>
<tr>
<td>15 students randomly selected from Class 8</td>
<td></td>
</tr>
</tbody>
</table>

Note: R = random assignment, C1 = students randomly selected from Class 1, C2 = students randomly selected from Class 2, etc.

All participants were pretested prior to the experiment and posttested after the experiment. The rationale for the adoption of the pretest-posttest control group design was two-fold: First, the control group design was chosen because this phase of the study was intended to investigate the relative effects of two experimental treatments and a
traditional treatment on the dependent variables. Typically, WebQuest lessons to date have involved no post-reading activities in which the teacher and students review together or discuss the materials that students have read in the lessons. Second, the pretest-posttest design (as opposed to posttest only) was chosen to check the equivalence of the groups in reading and writing abilities through pretests. In case that the mean scores on the participants’ writing pretest were found to be significantly different across the three groups, pretest scores were going to be used for a statistical control; thus, in this case, posttest scores, adjusted for the pretest scores, were to be analyzed. This design is diagrammed in Figure 6.

*Figure 6.* Experimental, pretest-posttest control group design, with two experimental groups and a control group

<table>
<thead>
<tr>
<th>Randomly Selected Participants (N=120) Are Randomly Assigned By Block</th>
<th>Pretest</th>
<th>Treatment</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (n=40)</td>
<td>Reading/Writing</td>
<td>Online IC (Experimental)</td>
<td>Writing</td>
</tr>
<tr>
<td>Group 2 (n=40)</td>
<td>Reading/Writing</td>
<td>Online Recitation (Experimental)</td>
<td>Writing</td>
</tr>
<tr>
<td>Group 3 (n=40)</td>
<td>Reading/Writing</td>
<td>No Post-reading Scaffold (Control)</td>
<td>Writing</td>
</tr>
</tbody>
</table>

← 4 Week Treatment Period for All Groups →

As it was neither authentic nor appropriate to administer online IC and recitation sessions to groups of 40 students at a time, each of the three treatment groups was divided into small groups of five prior to the experiment (see Tharp and Gallimore, 1988 for a discussion of the appropriate group size, i.e., 3 to 6, for IC sessions). In dividing each treatment group (n=40) into small groups, it was ensured that the members of each small group came from the same class. This was because, as will be described later, all
treatments were to be administered at on-campus computer labs during the participants’ class times. Thus, the participants in each treatment condition needed to receive treatments in small subgroups of five students who came from the same class. This accounts for the reason for adopting the stratified random sampling strategy involving equal allocation of 15 participants (see the Sampling section above); that is, 15 participants needed to be randomly selected from each class so that they would participate in the experiment in small groups of five and so that the members of each of the groups would come from the same class.15

Treatment

Operational Definitions of Treatments

Online Instructional Conversation, one of the two experimental treatments, was operationally defined as discussion-oriented, teacher-led talk about written text occurring synchronously over the Internet (a) in which the teacher focuses on a substantive theme relevant to the text throughout the talk but yet intentionally relates the theme to the text during the talk and (b) which exhibits the 10 elements of IC presented by Goldenberg (1991, 1992/1993) at least to a moderate extent. Here, the “moderate extent” was considered to have been satisfied by the teacher-led talk obtaining an average score of 1 on the 3-point IC scale (0-1-2) for scoring the 10 IC elements which was developed by Goldenberg and colleagues (Rueda, Goldenberg, & Gallimore, 1992). The 10 elements of IC are (a) thematic focus; (b) activation and use of background knowledge and relevant schemata; (c) direct teaching, when necessary; (d) promotion of more complex

15 The reason for using class times for this experiment was that otherwise, it would be difficult to obtain the desired rate of participation by students; students would have all kinds of personal reasons for not participating on the day of the experiment. Furthermore, a volunteer sample, as used for an out-of-class time experiment, would be a “biased” sample.
language and expression; (e) promotion of bases for statements or positions; (f) few “known-answer” questions; (g) responsiveness to student contributions; (h) connected discourse; (i) a challenging, but non-threatening, atmosphere; and (j) general participation, including self-selected turns (see Table 1 in Chapter 2 for the descriptions of each of these elements, from Goldenberg, 1991, and Appendix A for the IC scale for scoring these elements, from Rueda et al., 1992). This operational definition stemmed from a synthesis of the conceptual definitions of Instructional Conversation offered by Claude Goldenberg (Goldenberg, 1991, 1992/1993; Saunders and Goldenberg, 2007), who has continuously expanded Tharp and Gallimore’s earlier theoretical works (e.g., Tharp & Gallimore, 1988, 1991) and finally completed what he calls the “IC model” (Goldenberg, 1991, 1992/1993), which delineates and describes 10 elements of IC (Goldenberg, 1991, 1992/1993).

Online recitation, the other experimental treatment, was operationally defined as a pattern of classroom discourse or mode of teaching occurring synchronously over the Internet in which the teacher consistently asks known-answer questions (i.e., questions to which the teacher already knows the answer) that require the students to display their mastery of the factual, literal details of written text, the students then respond with their answers, and then, optionally, the teacher evaluates the students’ responses, typically with short remarks of evaluation (e.g., Good, Right, or Well done). This operational definition was developed from an analysis of the conceptual literature on recitation, as well as a synthesis of a number of classroom discourse theorists’ conceptual definitions of recitation (e.g., Cazden, 2001; Hoetker & Ahlbrand, 1969, Mehan, 1991; Nystrand & Gamoran, 1991; Nystrand, Wu, Gamoran, Zeiser, & Long, 2001; Tharp & Gallimore,
Finally, no post-reading instructional scaffold, the control treatment, was operationally defined as a session which involves no talk about written text between the teacher and students or among students either over the internet or face to face and in which students engage in continuing to read the text.

Prior to the experiment, lesson plans which faithfully reflected these operational definitions were developed for each of the treatment conditions. The lessons plans for the IC and recitation treatments later served as a basis for developing scripts to be used by the experimental teacher during the IC and recitation sessions. The lesson plan for the IC treatment contained five elements, of which the first four were implemented sequentially: (a) Before students read the text (i.e., WebQuest reading materials), either “hook into,” or provide students with, background knowledge pertinent to the development of the selected theme of “characteristics of Monet’s and Cezanne’s work,” and activate relevant schemata necessary for understanding the text in students’ minds; (b) after students have read the text, establish the main ideas and important details of the text, capitalizing on opportunities to initiate discussion on the theme; (c) focus on the theme, i.e., characteristics of Monet’s and Cezanne’s work, throughout the talk, trying to build a deeper understanding (or conceptualization) of the theme gradually; and (d) relate the theme to the text whenever possible during the talk. In addition, (e) throughout the session, ensure that the 10 elements of IC (the items just described represent some of them), as presented by Goldenberg (1991, 1992/1993), are implemented at least to a moderate extent; that is, ensure that the teacher-led talk achieves an average score of 1 on the 3-point IC scale (0-1-2) developed by Goldenberg and colleagues (Rueda, Goldenberg, & Gallimore, 1992).
The lesson plan for the recitation treatment, on the other hand, contained the following elements: (a) Pose a question to which the teacher already knows the answer that requires the students to display their mastery of the factual, literal details of the text (i.e., WebQuest reading materials); (b) in response to the student(s)’ answer to this question, either provide an evaluative remark (such as Good, Right, or any other evaluative remark that is typically short in length) or provide no remark at all; and (c) repeat this sequence throughout the session. For the control group, the lesson plan for the treatment simply pertained to the teacher instructing students to continue to read the WebQuest materials for the same amount of time that the two experimental groups each received online IC and online recitation treatment. Except for their engaging in reading the WebQuest materials, the students in the control group went through exactly the same procedures throughout their WebQuest lessons as the experimental groups (see the “Procedures” section).

Implementation of Experimental and Control Treatments

These operationally defined treatments were administered to the three groups of students (final total N=104). Prior to the experiment, each of the three randomly assigned participant groups (n=40) was divided into 8 groups of five so that all the treatments would be administered to these small groups rather than the whole groups of 40 (see the preceding section on research design). One teacher, a native speaker of English with extensive experience in teaching EFL, administered both of the experimental treatments (i.e., online IC and online recitation) at a computer lab on the university campus, while another teacher, also a native speaker of English with extensive EFL teaching experience, administered the control treatment at another computer lab on the campus during the
same time periods when the other teacher was implementing the online recitation treatment. All these treatment sessions (24 sessions in total) occurred during regular class times for the 8 classes, and the entire experiment took approximately 4 weeks. Due to 16 students’ absence from their classes on their days of the experiment, 104 students participated in the experiment; thus, the numbers of students who participated in the online IC, online recitation, and control sessions were 36, 36, and 32, respectively.

In the first week of the experiment, the teacher responsible for administering experimental treatments (hereinafter called the “experimental teacher”) implemented online IC to each of 6 groups of four to five students at a computer lab during their regular class times. In the second week, the experimental teacher also implemented online recitation to another 6 groups of four to five students, who came from the same classes as those who had received the IC treatment in the previous week, at the same computer lab (hereinafter called “computer lab A”) during the students’ regular class times. While the recitation treatment was being administered to each of the groups, the teacher responsible for administering the control treatment (hereinafter called the “control teacher”) implemented the control treatment to each of another 6 groups of three to five students, who came from the same classes as those receiving the recitation treatment, at another computer lab (hereinafter called “computer lab B”). In the third week, the experimental teacher implemented online IC to 2 groups of four to five students, who were from another two classes, at computer lab A. In the fourth week, at computer lab A, the experimental teacher implemented online recitation to another 2 groups of four to five students, who came from the same classes as those who had received the IC treatment in the previous week. While this online recitation treatment was being administered to each
of the groups, at computer lab B, the control teacher implemented the control treatment to each of another two groups of three to five students, who came from the same classes as those receiving the recitation treatment. This implementation process is diagramed in Figure 7.
Figure 7. Process of implementation of experimental and control treatments

<table>
<thead>
<tr>
<th>Group</th>
<th>Administerer of the treatment</th>
<th>Schedule</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Online IC (n=36)</strong></td>
<td>Teacher A</td>
<td>Week 1: C1 - C6 (Wed. – Fri.) Week 3: C7 - C8 (Wed.) (during class times)</td>
<td>Computer Lab A</td>
</tr>
<tr>
<td>C1 (n=5)</td>
<td></td>
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<tr>
<td>C2 (n=4)</td>
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<tr>
<td>C7 (n=5)</td>
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<tr>
<td>C8 (n=4)</td>
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<tr>
<td><strong>Online recitation (n=36)</strong></td>
<td>Teacher A</td>
<td>Week 2: C1- C6 (Wed. – Fri.) Week 4: C7- C8 (Wed.) (during class times)</td>
<td>Computer Lab A</td>
</tr>
<tr>
<td>C1 (n=4)</td>
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<td>C2 (n=4)</td>
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<td>C7 (n=5)</td>
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<td>C8 (n=5)</td>
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<tr>
<td><strong>No post-reading scaffold (Control) (n=32)</strong></td>
<td>Teacher B</td>
<td>Week 2: C1 – C6 (Wed. – Fri.) Week 4: C7 – C8 (Wed.) (during class times)</td>
<td>Computer Lab B</td>
</tr>
<tr>
<td>C1 (n=4)</td>
<td></td>
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<tr>
<td>C2 (n=4)</td>
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<td>C7 (n=3)</td>
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<tr>
<td>C8 (n=5)</td>
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</tbody>
</table>

Note: • C1 = students from Class 1, C2 = students from Class 2, etc.  
• The control treatment was administered in Computer Lab B at the same time when the online recitation treatment was administered in Computer Lab A.
The reason for adopting this particular implementation process stemmed from the schedule of EAP classes at the university. The schedule at the time of the experiment indicated that the three-hour EAP classes met on Wednesday, Thursday, or Friday for two hours and on Monday or Tuesday for one hour. The schedule for the Wednesday through Friday classes was set at 3 pm - 4:50 pm and 5 pm - 6:50 pm (Wednesdays and Thursdays) and at 1 pm - 2:50 pm and 3 pm - 4:50 pm (Fridays), and multiple classes are offered during these two-hour periods. Despite the availability of these many classes, the experimental teacher (as well as the control teacher) could use only 6 classes per week because he could not possibly administer the pertinent treatment simultaneously to other classes offered during the same periods. This is the reason why the participating teachers in this experiment had no alternative but to implement the experimental and control treatments to students from 6 classes during the first and second weeks and then move on to implement the treatments to students from the next 2 classes during the third and fourth weeks.

Also, the reason why the same experimental teacher was not used for the administration of the control treatment was two-fold: First, if the experimental teacher also implemented the control treatment, the experimental period would be prolonged, thus exerting a negative influence on the internal validity of the study -- a point that will be taken up again later when discussing validity approaches. By having another teacher administer the control treatment at another computer lab at the same time when the experimental teacher was giving an experimental treatment, the period of the experiment was able to be shortened. Second, since the role of the person participating in the control WebQuest lessons was to ensure that students continued to read the WebQuest materials
and that the larger WebQuest lessons for the students followed the same procedures as the experimental WebQuest lessons except for the treatment, any teacher, as long as he or she was trained by the researcher in those appropriate procedures, could successfully complete the control WebQuest lessons without exerting any negative influence on the internal validity of the study. Thus, the experimental teacher did not necessarily need to participate in the control WebQuest lessons at the potential expense of the study’s internal validity caused by the prolonged period of the experiment.

Implementation Fidelity

*Toward enhancement of implementation fidelity.* Efforts were made to enhance implementation fidelity, or the extent to which treatments are implemented as intended (Krathwohl & Smith, 2005). Prior to the experiment, the researcher held training sessions with the experimental teacher over a period of four weeks, during which the teacher was trained by the researcher in implementing the online IC and recitation treatments as operationally defined. Researcher-developed scripts for the online IC and recitation treatment sessions, as well as lesson plans, were used for training purposes. The scripts, to be used by the experimental teacher during the experiment, had been developed based upon pertinent lesson plans in order to increase the implementation fidelity for experimental treatments. Part of the training involved reading and discussing model examples of IC and recitation from the literature, as well as Goldenberg’s (1991, 1992/1993) articles, which described 10 elements of IC. Four times during the training period, the teacher informally conducted online IC and recitation with small groups of university-level EFL students for practice purposes, and the transcripts from these sessions were analyzed and discussed by the teacher and the researcher, using the IC
scale developed for scoring the 10 IC elements (Rueda, Goldenberg, & Gallimore, 1992). By doing so, improvements were to be made in implementing the treatments as they were operationally defined. The control teacher was also trained by the researcher. The training for the control teacher focused on ensuring that all the components and procedures of the control WebQuest lessons were identical with those of the experimental WebQuest lessons except for the treatment, that is, except for the control students engaging in continuing to read the WebQuest materials for the same amount of time that the other two groups would engage in online IC and recitation, respectively.

During the experiment, the researcher frequently visited the computer labs (i.e., the sites of the experiment) to help ensure that fidelity was practiced regularly throughout the period of the experiment. The visits were often unannounced ones. At the same time, the researcher ensured that his presence at the sites was unobtrusive.

**Implementation fidelity for the treatments.** After the experiment, implementation fidelity for the experimental and control treatments was assessed. Implementation fidelity for the online IC treatment was assessed using the 3-point IC scale (0-1-2) for scoring the 10 IC elements developed by Rueda, Goldenberg, and Gallimore (1992), as well as a researcher-developed 3-point scale (0-1-2) intended to rate the first component of the operationally defined IC, that is, “the teacher focuses on a substantive theme relevant to the text throughout the talk but yet intentionally relates the theme to the text during the talk” (see Appendices A and B for the scales). As this component was operationalized more concretely in the lesson plan for the online IC treatment, the researcher-developed scale assessed the treatment fidelity based on the first four sequential elements described in the lesson plan (see the subsection above entitled
“operational definitions of treatments” within this “treatment” section). Four randomly selected online IC transcripts were examined for the assessment of the implementation fidelity of the IC treatment. The calculated implementation fidelity for the IC treatment was 1.93 out of 2.0. This value of 1.93 was yielded by averaging the implementation fidelity of 1.85 as calculated using the Rueda et al.’s (1992) scale and that of 2.0 as calculated using the researcher-developed scale.

Implementation fidelity for the online recitation treatment was assessed using a researcher-developed 3-point scale (0-1-2) (see Appendix C). The researcher assessed the implementation fidelity based on the operational definition of online recitation and what was more concretely described in the lesson plan (see the subsection above entitled “operational definitions of treatments”). Four randomly selected online recitation transcripts were examined for the assessment of the implementation fidelity of the recitation treatment. The calculated implementation fidelity for the recitation treatment was 2.0 out of 2.0.

As for the control treatment, its implementation fidelity was be assessed based upon observations made by the researcher during his four visits (including one or more unannounced visits) to the computer lab where the treatment was being administered. A 3 point-scale was developed and used for the assessment of the implementation fidelity of the control treatment (see Appendix D). The calculated implementation fidelity for the control treatment was 2.0 out of 2.0.

**Materials**

The WebQuest site, which was developed by the researcher for this experiment, contained links to four Web-based reading materials about the artists Claude Monet and
Paul Cezanne, and the students’ task for the lesson, as described in the “task” section of the site, was to write an essay comparing and contrasting the work of the two artists after reading two materials (or texts) on each of the artists. The average length of the readings was equal to one and a half pages of a word-processed document, and each reading contained several word and/or phrasal links to related information. The menu area on the left-hand side of the homepage displayed such items as introduction, task, process, and conclusion. Since information sources (i.e., sources of reading) were embedded in the process section, as is usually the case, this WebQuest site can be seen as containing all the six essential components of a WebQuest (see Dodge, 1995, 1996). For purposes of this experiment, however, only the task and process sections were made functional, while the other sections, i.e., introduction and conclusion, were rendered non-functional. That is, students were not able to access sections other than the task section, where the description of the task was provided, and the process section, which included links to the WebQuest reading sources. Also, for purposes of this experiment, guidance, such as input, transformation, or production scaffolds, was not made available in the process section.

**Instruments**

Researcher-developed writing tests were be used as a writing pretest and a writing posttest. For the reading pretest, the reading section of a test from a Test of English as a Foreign Language (TOEFL) Practice Tests volume authored by the Educational Testing Service (ETS) (2009) was utilized. The purpose of the reading and writing pretests was to check the equivalence in reading and writing abilities among the three groups, and the writing posttest was designed to measure the students’ WebQuest writing performance,
i.e., overall WebQuest writing performance and five specific areas of WebQuest writing performance, which together represented the six dependent variables of this study.

The prompt for the writing posttest asked the participants to write an essay comparing and contrasting the work of Monet and Cezanne, based upon the WebQuest reading materials about the two artists which they had just read (see Appendix E). The prompt for the writing pretest was equivalent in format to that for the writing posttest in that it also asked the participants to write a compare-and-contrast essay, based upon reading materials about two artists that they had just read and in that the same time (40 minutes) was given to complete the test (see Appendix F). The TOEFL reading pretest consisted of 13 multiple choice items under a passage, and it was selected from a volume published three years before the pretest was administered to the participants.

In developing the writing pretest and posttest, construct (or the ability tested) was defined based upon theories in the literature. Drawing on Skehan’s (1996, 1998) theory of linguistic ability and Bachman and Palmer’s (1996) model of communicative language ability, writing ability was defined as consisting of (a) fluency, (b) syntactic complexity, (c) lexical complexity, (d) content, (e) organization, and (f) grammar. Skehan’s (1996, 1998) theory of linguistic competence has advanced what he calls “three aspects of language performance,” i.e., fluency, complexity, and accuracy. Bachman and Palmer’s (1996) theory/model of language ability, on the other hand, presents grammatical knowledge, textual knowledge (e.g., organization), pragmatic knowledge (i.e., functional/sociolinguistic knowledge), and strategic competence 16 (i.e., competence in

16 Regarding strategic competence, Bachman and Palmer (1996) make it clear that “in most language testing situations, we will probably not wish to make specific inferences about strategic competence, so we would not be likely to include this in our definition of the construct” (p. 119).
metacognitive strategies) as the components of language ability. In addition, in consideration of the importance of content (or topical) knowledge in defining the construct in language testing, Bachman and Palmer also offer this option: inclusion of both content knowledge and language ability in the construct definition for language assessment. Their emphasis on content in language assessment is in line with the current process approach to writing. That is, whereas the traditional product approach to writing emphasized grammar as a major component of writing ability, content and organization have widely been considered to be important components of writing ability since the process approach to writing emerged (see Harris, 1969; Hillocks, 1986, 1987; Horowitz, 1986).

While most task-based language researchers have used fluency, complexity, and accuracy in investigating students’ oral language production in task-based language learning (e.g., Foster & Skehan, 1996; Yuan & Ellis, 2003), Ellis (2003) indicates in his discussion of task-based assessment that the communicative language testing paradigm fits well with task-based language assessment. Given this – as well as my earlier discussions of task-based language learning and teaching in Chapter 2 -- in this study, I drew on both Skehan’s theory of linguistic ability and Bachman and Palmer’s (1996) model of communicative language ability and defined writing ability as consisting of (a) fluency, (b) syntactic complexity, (c) lexical complexity, (d) content, (e) organization, and (f) grammar. In this study, I am using the term “overall writing quality” as an umbrella term encompassing content, organization, and grammar; this reflects the tendency that many writing researchers have defined the construct of writing ability as consisting of content, organization, and grammar (see Weigle, 2002 for a discussion).
Content, as Weigle indicates, is an especially important, and hence widely adopted, component of writing ability for assessment of students’ writing in English for academic purposes (EAP) or other language for specific purposes (LSP) courses (see also Douglas, 2000, Chapter 2, for an in-depth discussion of the role of content knowledge in LSP tests, including EAP tests).

In this study, the dependent variables were operationally defined as follows:

1. Overall writing quality: holistic score on content, organization, and grammatical accuracy (i.e., accuracy in syntax and vocabulary) of an essay.

2. Fluency: the total number words in an essay.

3. Syntactic complexity: the mean length of T-units in an essay, as determined by dividing the total number of words by the number of T-units. A T-unit (or a “terminable unit”) is “a main clause plus all subordinate clauses and non-clausal structures attached to it” (Hunt, 1970, p. 4)

4. Lexical complexity: the Type-Token Ratio in an essay, as determined by the number of different words divided by the total number words.

5. Content: score on accuracy, thoroughness, and completeness of the content of an essay, as the content is generated in compliance with the task instructions given in the prompt of the test, i.e., to compare and contrast certain aspect(s) in the source materials that students have read.

6. Overall WebQuest writing performance: composite score consisting of the sum of percentage scores on all the above five variables. That is, scores on each of the variables were converted to a percentage score before they were added up to produce the composite score; for example, a score of 0.7 in lexical complexity was converted to 70, and a score
of 6 out of 12 in content was converted to 50. In this way, all the five variables received equal weight in constituting overall WebQuest writing performance.

Procedures

Data Collection Procedures

In the fall of 2012, 120 students, randomly selected from a population of 8 EFL/EAP classes at a Korean university, were randomly assigned to three treatment conditions: online IC (n=40), online recitation (n=40), and no post-reading instructional scaffold (n=40). Prior to the random assignment, the participants were informed about the study and asked to sign an informed consent form. The week before the experiment, reading and writing pretests were administered to the participants during their regular class times. After the tests, the participants were briefly introduced to the notion of a WebQuest, as well as a sample WebQuest site. Prior to the experiment, each of the three treatment groups was also divided into 8 groups of five so that they could participate in the experiment in those small groups rather than in large, whole groups of forty.

During the experimental period, the small groups of participating students came to an on-campus computer lab in lieu of their classrooms. A total of 104 students participated in the experiment (n for online IC = 36; n for online recitation = 36; and n for control = 32). During the first week of the experiment, the experimental teacher implemented online IC to each of 6 groups of four to five students at computer lab A during their regular class times. In the second week, the experimental teacher implemented online

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17 While the IC treatments were being administered to these groups of students during the first week, in computer lab B, the students who had not been selected for participation in this WebQuest experiment were taking a free WebQuest lesson taught by a third teacher. This arrangement had been made at the suggestion of the researcher and in his subsequent consultation with a cooperating teacher at the EFL program who would be soliciting cooperation from the teachers of the 8 classes. Otherwise, this experiment would have resulted in depriving the students of the right to experience the same curriculum during the semester, which potentially is an ethical issue.
recitation to another 6 groups of four to five students at computer lab A during their regular class times, while during the same time periods, the control teacher administered control treatment to each of another 6 groups of three to five students at computer lab B. In the third week, the experimental teacher implemented online IC to another 2 groups of four to five students at computer lab A.18 In the fourth week, the experimental teacher implemented online recitation to another 2 groups of four to five students at computer lab A, while during the same time periods, the control teacher implemented control treatment to each of another 2 groups of three to five students at computer lab B. For further details about these weekly procedures, refer to a previous section entitled “Treatment,” particularly Figure 7 in that section.

Each WebQuest lesson (experimental and control) lasted 90 minutes, including the last 40 minutes devoted to the students’ writing of a compare-and-contrast essay pertaining to their WebQuest readings. Before the lesson started, the experimental and the control teacher, respectively, reviewed with the students what is described in the task and process sections of the WebQuest site and verbally explained the task and the process of performing the task so that the students could understand what they were to do in the lesson. The experimental and control teachers had already had a prior session with the researcher in which they discussed how they would conduct this pre-lesson session identically in terms of how to review and explain the task and the process, as well as the duration of time for the session.

18 While the IC treatments were being administered to these groups of students during this third week, in computer lab B, the students who had not been selected for participation in this WebQuest experiment were taking a free WebQuest lesson taught by a third teacher. See footnote 17 for the rationale for doing this.
The students in the online IC group and the online recitation group spent 20 minutes reading the Monet and Cezanne materials individually at their computer stations. Prior to the reading, the online IC group engaged in a five-minute online IC session with the experimental teacher, during which the teacher attempted to use and activate students’ background knowledge and schemata related to the readings. Following the reading, the online recitation group participated in a post-reading online recitation session with the experimental teacher for 30 minutes, while the online IC group participated in a post-reading online IC session with the same experimental teacher for 25 minutes.

An Internet-based synchronous (i.e., real-time, or simultaneous) textual CMC tool, the Skype client, was used as a medium for the IC and recitation participants’ multi-way communication; that is, using the tool, the teacher and students communicated real-time by typing in words at their respective computer terminals. Whenever appropriate and possible, the teacher, who had word-processed scripts handy on his computer, used the “copy” and “paste” functions of a word processing program in inputting words onto the Skype conversation window; that is, whenever appropriate and possible, the teacher copied portions of the text in the script and pasted them onto the input area of the Skype conversation window and then pressed the “enter” key. The IC group engaged in an Instructional Conversation with the teacher about the Monet and Cezanne texts. The recitation group engaged in an online recitation session with the teacher about the same texts. Then, the students in each group began to write an essay comparing and contrasting the two artists’ work (see Appendix E for the essay writing test). They had access to the Monet and Cezanne materials as they wrote the essay; that is, they had the input data available from the “process” section of the WebQuest site as they performed
the essay writing task. Students wrote the essay on paper at their individual computer stations. The students’ writing of the essay was part of the WebQuest lesson, but it served as the posttest for this study.

The control group, on the other hand, spent 50 minutes reading the same Monet and Cezanne materials individually at their computer stations. No post-reading session with the participating teacher was provided to them. Then, they began to write their essays on paper as the IC and recitation groups did. As in the IC and recitation groups, 40 minutes were given for their essay writing. The essay writing served as the posttest for this study.

Scoring Procedures

Before scoring the reading/writing pretests and the writing posttest, an identification code was assigned to each test paper, while all identifiers on the test paper, such as student and instructor names, were removed. Following this, all the test papers were mixed together for scoring. The reading pretest was scored dichotomously using the answer key provided in the TOEFL Practice Tests volume. One point was given for each correct answer, and a zero point was given for each incorrect answer, except for the last question, which was worth two points. Thus, the total possible score for the 13-item multiple choice reading pretest was 14. The researcher scored the test and then checked all the scorings once.

For the writing pretest and posttest, two experienced EFL teachers, who were native speakers of English, rated the essays for overall writing quality and content. For overall writing quality, the two raters scored the essays holistically on a six-point scale based on

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19 The list of ID numbers and identifiers were kept in separate secure locations.
the criteria of content, organization, and grammatical accuracy as specified in the holistic scoring rubric developed by the researcher (see Appendix G). The procedures were as follows: From the total pool of the essays, the researcher selected two essays at each of the six holistic score points to serve as “anchor papers,” or sample papers for scores 1 through 6 (see White, 1984). The purpose of these twelve anchor papers was to provide raters with a common metric for the evaluation of the essays, thereby enhancing inter-rater reliability. The two raters had two days of training sessions offered by the researcher which involved discussion of the features of the respective anchor essays and practice in scoring essays drawn randomly from the pool of essays. The raters read each essay silently and then assessed the overall writing quality of the essay in relation to the anchor essays. Once an acceptable level of inter-rater reliability ($r = .85$) was reached in these practice sessions, the raters began to score essays independently (see Kern & Schultz, 1992). The final score for each essay was the sum of the two scorings, hence yielding a range of two to twelve points. A one-point difference between the scorings was allowed, but if the two scores were more than one point apart, the essay was scored by a third rater (White, 1984). In such a case, the two closest scores were summed and the distant score dropped (Kern & Schultz, 1992; Weigle, 2002; White, 1984).

Each day, the raters re-read all anchor essays in order to maximize inter-rater reliability (as well as intra-rater reliability). Sample essays (or anchor essays) were regularly drawn at random to be scored by the raters, and differences in scores were discussed until a consensus was reached (Kern & Schultz, 1992; White, 1984). Inter-rater reliability was checked periodically while scoring was in progress, and if the inter-rater reliability was found to have dropped below the desired level ($r = .85$), the raters
were instructed to re-read the anchor essays and to practice scoring essays under the supervision of the researcher.

After completing the holistic scoring, the raters scored the essays for content. In scoring an essay for this aspect of writing performance, the raters focused on the accuracy, completeness, and thoroughness of its content, as it related to the task instructions, i.e., to compare and contrast certain aspect(s) in the source materials (see Appendix H for the rubric for evaluating content). In order to achieve an acceptable level of reliability in scoring, the same procedures as those for the holistic scoring on overall writing quality, described above, were taken. As in the holistic scoring, the final score on content yielded a range of two to twelve points.

This scoring of student essays for content was followed by the scoring of the essays for fluency, syntactic complexity, and lexical complexity. One of the raters who scored the essays for overall writing quality and content participated in two-day training sessions offered by the researcher in which he discussed with the researcher the notion of T-units as presented by Hunt (1970) and practiced counting the numbers of T-units for over 10 essays randomly drawn from the entire pool of essays. Once he exhibited a high level of accuracy in counting the T-units, he was instructed to begin to count the number of T-units for each essay independently. After the rater completed the T-unit counting for all essays, the researcher checked the accuracy of his T-unit counts. The purpose of counting the number of T-units for each essay was to use it as the denominator in computing the syntactic complexity of each essay writing. Upon obtaining the numbers of T-units for all essays, the researcher computed the fluency, syntactic complexity, and
lexical complexity for each essay, using the concordancing software program “tlCorpus.” The timeline for data collection and scoring is included in Appendix J.

**Computation of Inter-rater Reliability**

The SPSS Statistics program was used to compute the inter-rater reliabilities for the scoring of the essays on overall writing quality and content, respectively. The inter-rater reliabilities for the scoring of posttest essays on overall writing quality and content, as computed using the Pearson product-moment correlation coefficient, were $r = .89$ and $r = .90$, respectively. The inter-rater reliabilities for the scoring of pretest essays on overall writing quality and content, as computed using the Pearson product-moment correlation coefficient, were $r = .86$ and $r = .91$, respectively.

**Data Analysis**

In this study, the fixed categorical independent variable was type of post-reading scaffold with three levels, and the continuous random dependent variables were (a) overall writing quality, (b) content, (c) fluency, (d) syntactic complexity, (e) lexical complexity, and (f) overall WebQuest writing performance. The sequence of data analysis involved analyzing the first five dependent variables first and the last dependent variable last. This was because the last dependent variable, having been operationally defined as a composite score consisting of the sum of the percentage scores on all the first five dependent variables, conceptually represented an ex post facto summation of scores on the smaller, five dependent variables.

Preliminary analyses on pretest data indicated that there was a significant difference among the treatment groups in pretest scores on content and that the pretest scores on content were significantly related to posttest scores on some of the first five dependent
variables. This implied that this pretest variable, if left uncontrolled, would exert an undue influence on the results of the study. Hence, a decision was made to use pretest score on content as the covariate in all analyses on the five dependent variables.

Given this covariate, a multivariate analysis of covariance (MANCOVA) was conducted on the first five dependent variables because most of them were correlated. This multivariate analysis procedure treated the five dependent variables as a single collection and involved a simultaneous analysis of them as a whole. The principal advantage of such a multivariate procedure is that it permits a test of possible correlations among multiple dependent variables, which could not be evaluated if each of the dependent variables were tested in isolation (see Huck, Cormier, & Bounds, 1974). Additionally, this analysis procedure statistically controls for initial differences in pretest scores among the treatment groups by involving a simultaneous, holistic analysis of the groups’ posttest scores on dependent variables after taking into account and making appropriate statistical adjustments for the initial differences in pretest scores (see Huck, 2012; Huck, Cormier, & Bounds, 1974).

As a follow-up to the MANCOVA, univariate analyses of covariance (AVCOVAs) were performed on each of the five dependent variables in order to find out which dependent variables contributed to the overall significant result from the omnibus MANCOVA test. Finally, post-hoc pairwise comparisons were conducted on the dependent variables for which significant F ratios had been obtained. For all pairwise comparisons, the Bonferroni adjustment technique (alpha / number of comparisons) was used to control for Type I error due to alpha inflation. Thus, in lieu of an a priori alpha
level of .05, an adjusted alpha (α’) of .017 (.05 / 3) was used as the criterion against which obtained significance (p) values for each pairwise comparison were compared.\textsuperscript{20}

The last, sixth dependent variable, i.e., overall WebQuest writing performance, was analyzed using a one-way analysis of variance (ANOVA). The reasons why this variable was not subjected to either the above-described multivariate analysis or a one-way ANCOVA are as follows: First, since the score on this variable, which was operationalized as composite score consisting of the sum of percentage scores on all the other five dependent variables, was to be obtained in a post hoc manner (i.e., after the percentage scores on all the five variables had been obtained), it was not appropriate to subject it to a multivariate analysis together with the five, smaller variables. Second, because a preliminary analysis of the pretest data indicated that there was no significant difference in overall WebQuest writing performance among the three groups, it seemed more appropriate to use a one-way ANOVA, rather than a one-way ANCOVA involving use of pretest score on overall WebQuest writing performance as a covariate.\textsuperscript{21}

\textsuperscript{20} The use of separate univariate analyses on each dependent variable following a MANOVA/MANCOVA in this study represents the most commonly used follow-up investigation strategy for probing a significant multivariate finding, as evidenced in the current research literature (see Huck, 2012). As Dr. Newman indicated earlier, however, the use of this strategy involves inflation of Type I error. After discovering that some authors of peer-reviewed journal articles used in their studies the Bonferroni adjustment technique in the phase of conducting pairwise comparisons in order to control for Type I error due to alpha inflation, I used the same for the post-hoc pairwise comparisons for this study. This was particularly because I wanted to attend to Dr. Newman’s earlier concern over Type I error inflation in this study. Indeed, application of the Bonferroni adjustment procedure resulted in reducing the originally set alpha level by as much as 2/3 to .017. In the course of doing this, I was able to better understand why Dr. Newman had raised this issue in the first place. I hope that the use of this procedure for reducing an inflated Type I error risk in this study has alleviated Dr. Newman’s earlier concern at least to some extent.

\textsuperscript{21} Preliminary analyses of pretest data using one-way ANOVAs revealed no significant difference among the groups with regard to not only overall WebQuest writing performance but also four of the five smaller, pretest variables, i.e., overall writing quality, fluency, syntactic complexity, and lexical complexity. As for the pretest variable of content, however, the group difference was significant (p = .037) with post hoc tests indicating that the IC group was superior to the other two groups. On the other hand, a one-way ANOVA conducted on the reading pretest showed no significant difference among the groups.
Following the one-way ANOVA, post-hoc tests were conducted for pairwise comparisons. The Tukey HSD and Scheffe tests were used for the IC group (n=36) vs. the recitation group (n=36) and the IC group (n=36) vs. the control group (n=32), respectively.

Validity Approaches

Validity was an issue to which I had constantly attended since the planning phase of this study. A number of procedures by which validity could be enhanced were incorporated into the research design. In this section, I will describe some validity strategies employed in this study in terms of four types of experimental validity as discussed by Wiersma and Jurs (2005): internal, external, construct, and statistical conclusion. I will also discuss two issues that can possibly be raised.

Internal Validity

Issues of internal validity, or “the extent to which the results of a research study can be interpreted accurately and with confidence” (Wiersma & Jurs, 2005, p. 7), were taken into active consideration in designing this quantitative part of the study. First of all, by choosing an experimental design (in lieu of a quasi-experimental design), I sought to enhance the internal validity of this study. Random assignment of participants to the three treatment conditions in this study equalized the treatment groups with regard to all variables associated with the participants, such as ability level, prior knowledge/achievement, motivation, gender, attitude, aptitude, and learning style/strategies. This random assignment controlled all these extraneous variables by randomly distributing each and all of them among the three treatment groups, thus enhancing the internal validity of this study. As a result of the randomization, this study
was free from what Campbell and Stanley (1963) called the “selection factor,” or an
effect due to participants not being randomly assigned to groups, so that the groups are
not equivalent, which, according to Campbell and Stanley, is a major threat to the internal
validity of a study.  

Second, the pretest-posttest design employed in this study also served to increase the
internal validity of the study. Inclusion of pretests on reading and writing enabled the
researcher to check the equivalence of the three groups in reading and writing abilities,
thereby enhancing the study’s internal validity. In this study, not only a pretest on
writing, which pertained to the dependent variables of the study, but also a pretest on
reading was conducted to check the equivalence of the groups in reading ability, because
WebQuest writing performance involves students in reading Web-based source materials
in order to perform the writing task and, therefore, differences in reading ability among
the groups may exert an influence on the dependent variables. Thus, by ensuring through
pretests that the groups were comparable in both reading and writing abilities, the
researcher enhanced the internal validity of the study.

Third, and in relation to the second, the statistical control conducted in this study --
i.e., adjustment of writing posttest scores for writing pretest scores on content also served
to enhance the internal validity of the study. Preliminary analyses on pretest data
indicated that there was a significant difference among the treatment groups in pretest
scores on content. This implied that if the pretest variable was not statistically controlled,

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22 Bloom et al. (1999) clearly states that all of the three major random assignment approaches, i.e., simple,
blocked, and cluster random assignment, provide the same, high level of internal validity, with the main
difference in the statistical properties of the three approaches being their statistical power. As the authors
indicate, blocked random assignment, as used in this study, will have more statistical power than cluster
random assignment because blocking by site (e.g., community, school, or class) will reduce random
sampling error and clustering by site will increase it.
it might have an effect on the dependent variables. Thus, we would not know whether results obtained from the study were due to the independent variable (i.e., type of post-reading instructional scaffold) or to the initial difference on content among the groups. This would jeopardize the internal validity of the study. By employing statistical control, however, the researcher controlled the effect of the groups’ initial differences on content, rather than allowed the effects of the independent variable and the pretest content variable to be confounded.

Fourth, use of students’ regular class times for the experiment served to increase the internal validity of the study. The reason for using students’ regular class times was to prevent what Campbell and Stanley (1963) called the “mortality factor,” i.e., an effect due to participants dropping out of the experiment, or what is widely called “subject attrition.” The mortality factor is one of the major threats to internal validity which Campbell and Stanley addressed. In this study, while there was some subject attrition, by using class times for the experiment, the researcher was able to elicit maximized student participation, thereby minimizing an effect due to nonparticipation.

Despite these endeavors to increase the study’s internal validity, there may be some issues that can be raised. I will discuss two issues that can possibly be raised. First, and foremost, it may be pointed out that using two teachers for the experiment potentially jeopardizes the internal validity of the study. That is, since one would not know whether the higher performance of a certain group is due to the independent variable or to the teacher variable (i.e., the difference in teaching effectiveness between the two teachers), using two teachers for the experiment is potentially a threat to the study’s internal validity. I agree. On the other hand, however, if the experimental teacher had also implemented
the control treatment (i.e., if a single teacher had implemented all the three treatments), the experimental period would have been prolonged, and this also becomes a potential threat to the internal validity of the study. This concerns what Campbell and Stanley called the “history factor,” which they presented as one of the major threats to the internal validity of a study. As the experimental period is prolonged, there will be more chance of unanticipated events occurring while the experiment is in progress that affect the dependent variable; that is, the longer the experimental period, the more the likelihood of the history factor having an effect on the dependent variable. For example, a subgroup of participants can miss their experimental or control WebQuest lesson due to a power failure or a suddenly scheduled departmental function that they must participate in. The likelihood of the occurrence of these types of unexpected events would become greater as the experimental period becomes longer.\footnote{The senior faculty member at the EFL program who was cooperating with me in this project also expressed his concern over the chance of these types of unexpected events happening, particularly, various departmental functions that are suddenly scheduled.} In this study, by having another teacher administer the control treatment at another computer lab at the same time when the experimental teacher was giving an experimental treatment, the period of the experiment was shortened. Furthermore, since the role of the person participating in the control WebQuest lessons was to ensure that the larger WebQuest lessons followed the same procedures as the experimental WebQuest lessons except for the treatment, any teacher, as long as he or she was trained by the researcher in those appropriate procedures, could successfully complete the control WebQuest lessons without exerting any significant negative influence on the internal validity of the study. Thus, the experimental teacher
did not necessarily need to participate in the control WebQuest lessons at the potential expense of the study’s internal validity caused by the prolonged period of the experiment.

Second, lack of a pretest on content knowledge, i.e., content knowledge on Monet and Cezanne’s work, may be pointed out as a weakness in terms of internal validity. It indeed would undermine the internal validity of this study. I initially planned to include not only a pretest on content knowledge but also a pretest on typing skills. Later, however, I found it impossible for me and each classroom teacher to conduct either of the two pretests together with the reading and writing pretests within a two-hour class period before the experiment. I consulted with the senior faculty member at the EFL program who had been cooperating with me in this project regarding this matter, but we were unable to find a clue; he indicated that it would be impossible to use additional class periods for these pretests. Lack of a pretest on content knowledge can certainly be a flaw of this study. On the other hand, however, given that this study involved random assignment of participants to treatment groups and that conducting a pretest on the same content as the posttest would potentially cause a “testing effect” problem, this lack of a pretest on content knowledge may be justified, at least to a certain extent. That is, through random assignment, the groups were largely equalized with respect to content knowledge, as well as other variables associated with the individuals. Moreover, pretesting the participants on their prior knowledge of the two artists would have a “testing effect” on the dependent variable, which is another major threat to the internal validity of a study (see Campbell & Stanley, 1963). That is, the pretest on the same content as the posttest would exert an undue effect on the dependent variable by cueing
the participants about the posttest. Then, while lack of a pretest on content knowledge in this study may be a flaw of this study, the flaw may not be considered to be a serious one given the randomization involved in this study and the undesired pretest effect that would have been caused by a pretest on content knowledge.

For all these issues, I believe that this study has generally good internal validity. Especially, randomization, a process necessitated by the experimental design per se, likely served to lower the degree of seriousness of some potential problems associated with the internal validity of this study.

External Validity

In choosing to use a random sampling design for this study, I was considering the study’s external validity, or “the extent to which research results are generalizable to populations and/or conditions” (Wiersma & Jurs, 2005, p. 8). Since the 104 participants were randomly selected from the population of 8 EFL classes at the Korean university, the results of this study are generalizable to the 8 EFL classes. A further generalization beyond the scope of the 8 classes could be argued on a logical basis (see Wiersma & Jurs, 2005 for a discussion of logical generalization beyond statistical generalization). The results of this study may be generalizable to the larger population of Korean university/college students because the 104 students who participated in this study were well representative of all Korean university/college students, particularly with respect to the length of time they had learned EFL. As was the case with most other Korean university/college freshmen students, most of the 104 participants had been learning EFL.

24 The Solomon design is often used to address possible pretest effects. However, the design was not appropriate to this study because it involves four groups, which consist of two experimental groups and two control groups.
as a compulsory subject for approximately 11 years since their third year in elementary school. With regard to further generalization to the entire population of the EFL students in the world, it seems difficult to find any plausible grounds for that, because of differences in individual students’ characteristics and the level of writing competence among nations; hence, the reader of this research report might be able to make his or her own logical generalization taking into account the comparability in relevant characteristics (including demographic characteristics) between their university EFL students and the participants of this study.

Construct Validity and Statistical Conclusion Validity

I attempted to attain a high degree of construct validity by ensuring high implementation fidelity for the treatments. In fact, I had the study’s construct validity in mind when I elaborated in an earlier section on how I had attempted to increase the implementation fidelity for the treatments (see the subsection entitled “implementation fidelity” within the section “treatment”). According to Cook and Campbell (1979, as cited in Wiersma & Jurs, 2005), construct validity deals with the definitions of the constructs of the independent and the dependent variable, and it can be threatened by so-called “mono-operation bias,” a situation which arises when only one form or part of experimental treatment is implemented. In this study, I made every effort to ensure that all the components of the experimental and control treatments were implemented as operationally defined, thereby enhancing implementation fidelity and in turn the construct validity of the study. Specifically, as described in some detail in the earlier section, I conducted thorough pre-experiment training for the experimental and control teachers so that they could implement the treatments as operationally defined, and,
furthermore, I frequently visited the computer labs (i.e., the sites of the experiment) during the experiment to help ensure that fidelity was practiced regularly throughout the period of the experiment. The clear operational definitions, along with the lesson plans which accurately reflected the definitions and contained some concrete details, also helped ensure high implementation fidelity and hence high construct validity (see the calculated values of implementation fidelity for each treatment in the section entitled “Implementation Fidelity”).

To enhance the study’s statistical conclusion validity, or “the validity of the decision that there is a statistically significant difference between the experimental group and the control group” (Wiersma & Jurs, 2005, p. 104), I gave top priority, among others, to ensuring adequate statistical power. Low statistical power, as indicated by Wiersma and Jurs (2005), is a major threat to a study’s statistical conclusion validity. Prior to the study, I conducted an a priori power analysis to determine the sample size for this study. This was done for the purpose of obtaining adequate statistical power. As the power analysis revealed that when a moderate effect size was assumed, the sample size needed per group to obtain a power of .80 at $\alpha = .05$ for studies with three groups of equal size was 52 (see Table 8.1 in Keppel & Wickens, 2004), I decided to use 180 participants for this first phase of the study.\footnote{This initial decision to use 180 participants was made in consideration of the study’s power and some possible attrition of the participants.} Although I ended up with 104 participants due to one cooperating faculty member’s withdrawal from the project shortly before his 60 students’ scheduled participation in the experiment, this study still achieved desired levels of statistical power with the 104 participants, as will be seen in Chapter 4.
Qualitative Phase

Sampling/Case Selection

A purposeful sampling strategy was used to select cases for the qualitative phase of this study. Using the extreme case sampling strategy (Patton, 2002), three online IC participants who had achieved the most remarkable improvement in writing were selected. An IC participant’s improvement in writing was determined by the difference between the participant’s pretest and posttest writing scores on overall WebQuest writing. Thus, three IC students who exhibited the largest difference in scores on overall WebQuest writing between the writing pretest and the writing posttest were selected for investigation of research question #2.

The rationale for using this particular sampling strategy was two-fold: First, the most successful (hence extreme) cases so selected would serve as information-richest cases whose study would best illuminate the qualitative research question. Second, as a result of this, the most successful cases would likely provide the best data to help explain the quantitative results, i.e., the IC students’ superior performance in WebQuest writing over the other two groups. As Patton (2002) indicates, extreme cases, such as outstanding cases, are “information-rich cases precisely because, by being unusual, they can illuminate both the unusual and the typical” (Patton, 2002, p. 234).

Design

For this qualitative phase of the study, a multiple case study design (Stake, 1995; Yin, 2009) was used. In a multiple case study, the researcher focuses on an issue or concern and then selects multiple cases (rather than a single case) to illustrate the issue (Creswell, 2007; Stake, 1995). As Yin (2009) indicates, evidence from multiple cases is often
considered more compelling, and therefore, the overall investigation is regarded as being more robust than in the case of a single case study.

The unit of analysis (or the “case”) was an individual EFL student. Since the three cases participating in this qualitative investigation were individual EFL students enrolled in an EFL program at a Korean university, the cases are considered to be bounded by a specific context or setting (see Stake, 1995; Yin, 2009). For the description of the setting for this study, see the earlier subsection entitled “participants and setting” in the “quantitative phase” section.

*Interview Protocol Development*

As with case selection, development of the interview protocol was contingent upon results from the first, quantitative phase of the study. Based upon the quantitative results, I developed the interview protocol in the following ways. In designing the open-ended, qualitative interview, I adopted the inductive approach, in which the researcher does not rely on certain theoretical constructs in constructing questions and attempts to describe the categories that emerge from the data during the analysis process, as opposed to the deductive approach, in which the researcher brings theoretical constructs and frames interview questions based upon the constructs and the analysis is done by examining how the informants address the constructs (see Brenner, 2006). In terms of the format (or structure) of the interview, I adopted a semistructured interview format and accordingly developed a semistructured interview protocol; thus, I asked all informants the same core questions with the freedom of asking follow-up questions that built on the responses received (Brenner, 2006). In the interview protocol, I divided the interview into a few
topics (which pertained to the research question) and wrote core questions under each topic.

As with the topics, all the interview questions addressed the research question. To this end, I designed the interview questions based upon the qualitative research question so that each of the interview questions would pertain to the research question (see Anfara, Brown, and Mangione, 2002 for a discussion). Before I began to ask questions for each topic, I asked the broadest possible question that pertained to the research question. Then, the topics proceeded in the funnel shape; that is, I began with a broad topic and then worked down to more detailed topics. For each question, I asked follow-up questions in response to the responses that the interviewees had provided. Those follow-up questions, which could not and hence were not included in the interview protocol, were asked only when necessary.

As for the length of the questions, I posed somewhat long questions rather than short ones, because short questions by the interviewer can suggest to the informant that short answers are expected, while longer questions signal that an interviewer expects longer answers and also give informants time to collect their thoughts (Brenner, 2006). Thus, for example, as suggested by Spradley (1979), I included explanations in the interview questions; particularly, I included explanations of difficult or ambiguous terms used in the questions in order to elicit necessary responses to answer the research question. Also, as needed, I even included statements that involved “alerting the interviewee to what is about to be asked before it is asked” (Patton, 2002, p. 370). With elements such as these, the interview questions became “elaborated” ones (see Brenner, 2006). Essentially, the core questions were designed to elicit expansive responses concerning the topics. Finally,
I used various probes, by which I could extend and clarify an informant’s responses, although they were not included in the interview protocol. Appendix I contains the interview protocol used in this study, which was developed based upon what has been described so far.\(^{26}\)

*Data Collection*

*Data Sources*

Data were collected from two sources: interviews and online IC discussions. The purpose of collecting both interview and online IC discussion data was to triangulate these different data sources. According to Patton (2002), triangulation of data sources, which refers to checking out the consistency of different data sources, is often used to “check interviews against program documents and other written evidence that can corroborate what interview respondents report” (p. 559). Thus, in this study, IC discussion data were collected and analyzed to provide corroborating evidence for the interview results.

*Procedures*

Soon after quantitative results were obtained, I met with the three selected participants for one-on-one interviews. The three interviews were conducted over a four-day period in a quiet conference room on the university campus. After arriving at the conference room, I explained the purpose of the interview to the interviewee and informed them about the amount of time that would be needed to complete the interview.

\(^{26}\) The last three questions in the interview protocol (i.e., questions 7, 8, and 9), which concern fluency, syntactic complexity, and lexical complexity, became irrelevant to the finalized qualitative research question with three subquestions (i.e., 2a, 2b, and 2c). Despite this, I still asked these three questions of the interview participants because they were included in the interview protocol, which was approved by my dissertation committee and the university’s IRB. Data pertaining to these questions, however, were excluded from analysis and hence were not used in this study.
(as well as the interview preparation time) and plans for using the results from the interview. Following this, I obtained informed consent from the interviewee; that is, I had a consent form signed by the interviewee.

This was followed by a series of procedures for preparing for the interview. Each interviewee first looked through the WebQuest site that they had used earlier during their WebQuest experimental lessons so that they could retrieve their memory of how the WebQuest lessons had proceeded. Following this, they reviewed the Skype-based online IC discussion sessions for their groups displayed on my computer screen; they reviewed the actual Skype conversation sessions saved on my computer. This was followed by my verbal explanation of some key terms to be used during the interview (e.g., IC and IC discourse), as well as their distinctions. Prior to answering interview questions 3, 4, 5, and 6, which were the key questions, each interviewee prepared their responses to the questions by taking brief notes of what they would say in response to the questions. In preparing the responses, they were allowed to refer to the Skype IC discussion sessions displayed on the computer screen. The reason for having this preparation session was two-fold: First, because four to six weeks had elapsed since the interviewees’ participation in their online IC sessions, they needed to retrieve their memory of what they had done during their online IC-incorporated WebQuest lessons so that they could answer the interview questions appropriately. Second, and relatedly, by going through these preparation procedures, they were likely to provide the best possible data for this study.

During the interview, I used a Korean version of the interview protocol to ask questions; thus, all interview questions were asked in the Korean language, and all
responses from the interviewee were provided in Korean. Whenever appropriate, I asked follow-up questions in response to the interviewee’s responses. All interviews were audio-recorded. In answering my questions, the interviewee was allowed to refer to their Skype IC discussion sessions shown on my computer. At the end of each interview, I thanked the interviewee for participating in the interview, as well as offered them a remuneration amounting to a total of travel and meal (lunch or dinner) expenses. I also assured the interviewee of confidentiality of responses and asked them if I could contact them if I needed further information. The average duration of time for the interviews was approximately 20 minutes, excluding a recess time; the average duration of time for the interview preparation, on the other hand, was approximately 50 minutes, excluding a recess time. After I obtained all interview data, I located and printed texts from the online IC discussions in which the three interviewees had participated earlier.

Data Analysis

Each audio-recorded interview was transcribed verbatim for analysis. The analysis was performed at two levels: within each case and across the cases (Stake, 1995; Yin, 2009). Steps in the qualitative analysis consisted of the following: (a) exploration of the data by reading through the transcripts and writing memos in the margins of the transcripts, (b) coding the data by segmenting and labeling the text, (c) developing themes by aggregating similar codes together, and (d) conducting a cross-case thematic analysis (see Creswell, 2007; Stake, 1995).

In exploring the data, I read through all the three participants’ interview transcripts a few times to develop a general understanding of the database. While reading through the transcripts, I wrote short memos (i.e., short phrases or ideas) in the margins of the
transcripts. This memo writing served as a preliminary step for forming codes in the next phase.

Following the exploration phase, I coded the data by dividing the text into small segments, or units (e.g., paragraphs, (groups of) sentences, or (groups of) phrases), and assigning a label to each of the segments. I composed the code label (or the code name), rather than using the exact words from the participants, as in vivo coding, or drawing code names from the literature. I coded directly on the printed transcripts; thus, the transcript pages were typed with extra-large margins so that codes (as well as memos) could placed in the margins. Specifically, I assigned code names to text segments/units in the left-hand side margin, while reserving the right-hand side margin for the recording of themes.

After assigning code names to text segments/units (i.e., after coding the data), I grouped the codes into themes. For the entire process of coding and theme development, I began with what Creswell (2007) calls “lean coding,” i.e., developing a short list of tentative codes (e.g., five or six codes), and then increased the number of codes as I continued to review and re-review the transcripts. I did not develop more than 25 codes per transcript, and I then worked to reduce and combine them into the appropriate number of themes that I would use for a cross-case analysis, which was the next step in the analysis process.

Following the within-case analysis described thus far, I conducted a cross-case thematic analysis. In this final phase of analysis, I examined themes across the three cases to discern themes that were common to all the cases. Then, I still had another
analysis to perform, that is, an analysis of the interviewees’ IC discussion texts to check if themes from this interview data analysis were manifested in their IC discussion data.

For this analysis, I first read a few times the printed texts of the IC discussions in which the interviewees had participated. While reading the texts, I attempted to locate text segments that manifested or reflected the common themes identified through the cross-case analysis of the interview data. Upon locating the pertinent segments, I assigned the pertinent code and theme names to the text segments.

**Representation of the Data Analysis**

This concerns representation of the study’s results in this research report, specifically, in Chapter 4. Representation of the results from the data analysis in this dissertation involved, among others, (a) building a discussion that convinces the reader that the themes emerged from the data and (b) presenting the findings in tables. In Chapter 4, I have provided evidence that the themes and codes emerged from the data by (a) conveying codes, (b) citing specific quotes; (c) providing multiple perspectives from individuals to show the divergent views; and (d) using different sources of data (i.e., interviews and online IC discussions) to cite multiple items of evidence (see Creswell, 2011). In addressing the last of these, i.e., using different sources of data to cite multiple items of evidence, I juxtaposed themes/codes from the interview data and excerpts from the online IC discussions to provide a cogent discussion of consistency.

In presenting the results in tables, I have included not only themes but also the codes that led to the themes (see Table 9 in Chapter 4). These themes and codes were discussed before being presented in tables. As a final note, in translating quotes into English, I used
meaningful (or meaning-focused) translations whenever literal translations were
unintelligible or did not convey the original meanings appropriately.

Validation Strategies

Three strategies were employed to enhance the study’s credibility, or internal
validity. These strategies, which were proposed by Lincoln and Guba (1985) and
addressed later by Creswell (2007), are (a) triangulation, (b) member checking, and (c)
external auditing. With regard to the first of these, I triangulated two different data
sources, interview and the interviewees’ online IC discussions, to check if the IC
discussion data revealed the themes from the interview data. Through this data
triangulation (Denzin, 1978, as cited in Lincoln & Guba, 1985; Patton, 2002), the IC data
have provided corroborating evidence for the themes identified from the interview data,
thereby increasing the credibility of the study.

Through member checking, I solicited the participants’ views of the credibility of the
analysis/findings. I took my preliminary analyses consisting of themes/codes and case
description back to members of the groups from which the data were collected, i.e., the
study’s participants, so that they could judge the accuracy and credibility of my analyses.
This has enabled me to purport with confidence that the findings of the study are credible.

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27 Since qualitative research has a distinct place in the research world, I will try to use qualitative terms
such as credibility and transferability in lieu of positivist (or quantitative) terms such as internal validity
and external validity, respectively (see Lincoln and Guba, 1985 for a detailed discussion of the former
terms). Despite this seemingly desirable effort, however, I am not in a position to present the formal
definitions of those qualitative terms in this paper because Lincoln and Guba, who proposed the terms, do
not explicitly define them and instead focus on elaborating on the need to use the terms as naturalistic
inquirers’ substitutes for conventionalists’ terms in light of the paradigmatic differences between the two
camps. While there are clearly differences in meanings between credibility and internal validity and
between transferability and external validity given the paradigmatic differences, I still find it useful to think
of credibility and transferability in term of the definitions of internal validity and external validity offered
by Wiersma and Jurs (2005), which I presented in the earlier section on validity approaches for the
quantitative phase of this study.
The use of this member checking strategy seems essential given the guiding paradigm for this phase of the study, i.e., constructivism in general and the constructivist ontological assumption in particular. As Lincoln and Guba (1985) noted, because in the naturalist paradigm realities are viewed as multiple and constructed, the naturalistic inquirer must show that he or she has represented those multiple constructions adequately and accurately, that is, that “the reconstructions (for the findings and interpretations are also constructions, …) that have been arrived at via the inquiry are credible to the constructors of the original multiple realities” (p. 296, emphasis in original). In conducting member checks, I communicated with the interview participants on a one-on-one basis via email and by telephone, rather than convening a group meeting.

Finally, I made use of external auditing. My academic advisor served as an auditor who examined and assessed both the process and the product of this study. Her auditing throughout this project certainly served to enhance the credibility of this study.

In addition to my attempt to increase the credibility of the study, I have also attempted to enhance the transferability of the results of the study. Both Lincoln and Guba (1985) and Creswell (2007) propose a rich thick description as the strategy, and the only strategy, for establishing the transferability of the results of a qualitative study. Thus, in this research report (i.e., this dissertation), I have provided a rich, thick description of the participants and settings so that the reader of this research report can determine whether the findings can be transferred because of shared characteristics. A thick description of the case is also what is emphasized in Stake’s (1995) approach to case study research.
In suggesting that qualitative researchers engage in at least two of the various validation strategies that he has offered, Creswell (2007) especially recommend that qualitative researchers conduct triangulation, thick description, and member checking since these are not only easy but also the most popular and cost-effective procedures. Here, he is recommending qualitative researchers’ use of two credibility strategies (triangulation and member checking) and the transferability strategy (thick description). I believe that the use of the above-described credibility strategies (i.e., triangulation, member checking, and external auditing) and transferability strategy (rich, thick description) in this study meets at least Creswell’s recommendation regarding validation in qualitative research.

Strategies for Coping with Potential Ethical Issues

*Informed Consent*

Before writing the proposal for this dissertation, I once thought that it would be best to have the informed consent form signed by the small groups of participants at the computer labs immediately before each experimental or control lesson began. Later, however, I came to think that it could be problematic because informed consent, if sought at the computer labs, would have been obtained after the pretesting. Since pretesting is considered to be part of the data collection process, students would need to sign the informed consent form before the pretest is administered. Hence, I changed the initial thought before making the proposal for this dissertation and ultimately obtained informed consent during the participants’ regular class times the week before the experiment. Specifically, I obtained informed consent from the participants before administering the reading and writing pretests in each of the 8 classes the week before the experiment (see
the section on data collection procedures for the quantitative phase of the study). I believe that this is the right decision.

Since the participants’ first language was Korean, not English, I translated the informed consent form into Korean. In each of the 8 classrooms, I offered a question-answer session after the students had read the consent form; the intent for doing this was to ensure that the participants had well understood the study, as well as their role in the study. I also gave them adequate time to consider their decisions before signing the consent form. In the consent form, I included a clause indicating that some of the participants would be contacted in the near future for a second data collection.

An issue that arose at the time of the proposal for this dissertation was whether the informed consent form for the second, qualitative phase of the study should be prepared at that time for IRB approval or later when quantitative results have been obtained. Following Creswell and Plano Clark’s (2011) recommendation, I sought IRB approval for the entire study rather than for each phase of the study. Thus, in accordance with the authors’ further recommendation, in my initial IRB application materials, I described the plans for both phases, noting that the plan for the second, qualitative phase was tentative because it would evolve from the results of the first, quantitative phase.

Confidentiality

The design of this study rendered the collection of identifiers necessary. Especially because the second, qualitative phase involved purposeful sampling of participants from the participants of the first, quantitative phase of the study, without identifiers for the participants of the first phase, the conduct of the second part of the study would have been impossible. Given this situation, an issue arose as to how to deal with the collected
identifiers in a way to safeguard the data from unauthorized access, i.e., how to respect confidentiality by not disclosing to others the data (or information) that the participants had provided in the research setting. I attended to this issue in the following ways.

For the quantitative part of the study, I took the following procedures to safeguard the data from unauthorized access. First, immediately after the reading and writing pretests had been completed, I removed identifiers (e.g., participant or instructor names) on the test papers, thus anonymizing the data. I then assigned an ID code to each test paper. That is, I substituted ID codes for identifiers. The ID code list and the identifiers were then kept in separate secure locations. I did the same with the writing posttest; I substituted ID codes for the identifiers on the test papers, with the ID code list and the identifiers kept in separate secure places. As a result of this, during later scoring sessions, the raters were not able to identify whose test papers they were scoring. In the data analysis phase, I, the researcher, did not know whose scores I was preparing for analysis, as well as whose scores I was analyzing. In reporting the results in this dissertation, I am using an aggregating report, thus not revealing the identities of the participants. Also, in order to login to Skype to participate in the online IC and online recitation treatment sessions, all participants, as well as the experimental teacher, needed passwords; that is, all the online sessions were password-protected so that others could not access the data. Finally, the online data are stored on a computer without Internet connections.

As for the qualitative part of the study, the key issues were how to deal with collected identifiers associated with interviews and how to protect online IC discussion participants’ identities. As soon as the interviews had been transcribed, I assigned ID codes to the interview transcripts. I then kept the code list and identifiers in separate
secure places. In the research report (i.e., in this dissertation), I am using pseudonyms for the interviewees’ names. As for the online IC discussions, I created five Skype accounts for the purpose of this study, and during the IC discussion sessions, all participants used as their Skype conversation names one of five color names that I had generated for them, i.e., Red, Yellow, Green, Blue, and Purple. In this research report, I am using these color names for all the participants in the online IC discussions in which the three interviewees participated (see excerpts from IC discussion sessions in Chapter 4).

Timeline for Completing the Study

For activities leading to completion of this study, see Appendix J.

Summary

This chapter began with restatements of the study’s purpose, research questions, and hypotheses. After stating the purpose of the study, I presented the following three research questions, of which the first and second consisted of two and three subquestions, respectively:

1. What are the relative effects of online IC vs. online recitation vs. no post-reading instructional scaffold on EFL learners’ WebQuest writing performance?

   (a) What are their relative effects on the overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively, of EFL learners’ WebQuest writing?

   (b) What are their relative effects on EFL learners’ overall WebQuest writing performance?

2. What aspects and features of IC and IC discourse may have assisted the EFL learners in the online IC group in their WebQuest writing performance?
(a) What aspects and features of IC and IC discourse may have assisted them in their overall WebQuest writing performance?

(b) What aspects/features of IC and IC discourse may have assisted them in their WebQuest writing performance in the area of content?

(c) What aspects/features of IC and IC discourse may have assisted them in their WebQuest writing performance in the area of overall writing quality?

3. In what ways do the qualitative data help to explain the quantitative results?

Subsequent to this, I presented the study’s hypotheses and the philosophical assumptions that informed the conduct of this study. I then described the mixed methods approach and the specific mixed methods design (i.e., an explanatory sequential design) which were used to answer the research questions. Following this, I described data collection and analysis methods for the first, quantitative phase of the study. In this quantitative phase of the study, in which 120 participants randomly selected from 8 EFL/EAP classes at a Korean University were randomly assigned to three treatment groups, the participants were pretested on reading and writing prior to the experiment. Before the experiment, each group of the participants was also divided into 8 groups of five students, yielding a total of 24 groups. Then, during the experiment, two participating teachers (experimental and control) administered online IC, online recitation, and control treatments to the 24 groups (final total N=104) at two computer labs on the university campus over a period of approximately 4 weeks. Upon receiving the pertinent treatment, each group of participants was posttested on writing, in the form of essay writing in which they compared and contrasted the work of the artists Claude Monet and Paul Cezanne, based upon the WebQuest materials on the two artists that they had read.
The participants’ posttest scores on the five dependent variables of overall writing quality, content, fluency, syntactic complexity, and lexical complexity were analyzed using a MANCOVA, followed by a series of univariate ANCOVAs. Post-hoc comparisons were subsequently conducted for pairwise comparisons. As for the dependent variable of overall WebQuest writing performance, which conceptually consisted of the five smaller dependent variables, a one-way ANOVA was used to analyze composite scores consisting of the sum of percentage scores on all the five variables. Post-hoc Tukey HSD and Scheffe tests were subsequently conducted for pairwise comparisons. This series of data analyses was designed to answer research question 1, which consisted of two subquestions.

After results for the quantitative phase of the study were obtained, I went through an intermediate phase in which I selected three IC participants and their IC discussion texts and developed an interview protocol. Using the extreme case sampling strategy (Patton, 2002), three online IC participants who had achieved the most remarkable improvement in writing (as determined by the difference between a participant’s pretest and posttest writing scores on overall WebQuest writing) were selected, along with their IC discussion texts. Following this, the data collection procedures for the second, qualitative phase began. Qualitative data were collected from two sources: interviews and online IC discussions. First, interview data were collected through one-on-one semistructured interviews with the three participants. After the interview data had been collected, IC discussion data were collected by locating and printing texts from the online IC discussions in which the three interviewees had participated. The purpose of collecting these IC discussion data was to provide corroborating evidence for the interview results.
Analysis of the interview data was performed using within-case and cross-case thematic analysis (Creswell, 2007; Stake, 1995; Yin, 2009). After identifying common themes through the cross-case thematic analysis, I analyzed the participants’ IC discussion texts to find evidence in their IC discussion texts that corroborated the common cross-case themes from the interview data. This qualitative data analysis was designed to answer research question 2, which consisted of three subquestions.

Finally, after the qualitative analysis had been completed, findings from the quantitative and qualitative phases were integrated to interpret the results in terms of the mixed methods research question (research question 3), i.e., “In what ways do the qualitative data help to explain the quantitative results?” In addition to the data collection and analysis methods for each phase of the study, which has been summarized thus far, this chapter also included discussions of validity approaches for each phase of the study and strategies for coping with potential ethical issues associated with the study. A timeline for completing the study was also presented (see Appendix J).

In the next chapter, I will present the results of the study. The results will be presented in order of the study’s phases, i.e., quantitative followed by qualitative. Since the chapter is designed for presentation of the study’s results, I will spare interpretations of the results as much as possible, reserving them mostly for the following chapter, i.e., Chapter 5.
CHAPTER 4: RESULTS

The purpose of this mixed methods study was to investigate the effects of types of post-reading instructional scaffolds on university-level English as a foreign language (EFL) learners’ WebQuest writing performance, as well as to identify aspects and features of IC and IC discourse that might have assisted the learners in their WebQuest writing performance. An explanatory sequential design was used, which involved collecting and analyzing quantitative data first and then collecting and analyzing qualitative data second in the sequence to help explain the quantitative results. In the first, quantitative phase of the study, numeric data (i.e., scores) were collected from the writing pretest and writing posttest, which were administered before and after implementing treatments, respectively. In the second, qualitative phase, textual data (i.e., transcripts and texts) were collected from interviews conducted with the three most successful IC participants and from the online IC discussions in which the three interviewees participated. At this point, the reader may want to skim through the Data Analysis sections for each phase of the study in Chapter 3 in order to better understand ways in which results are presented throughout this chapter, as well as the rationale underlying them. The section that ensues presents results from the quantitative phase of the study.

Quantitative Phase

Effects of Treatments on the Five Areas of WebQuest Writing Performance

In this section, I will present results from the quantitative phase of the study. I will begin with results from a one-way multivariate analysis of covariance (MANCOVA) conducted on the five dependent variables that constituted the general, composite variable of overall WebQuest writing performance. This will be followed by a presentation of
results from univariate analyses of covariance (ANCOVAs), which were conducted as a follow-up to the MANCOVA. I will then present results from final, post-hoc pairwise comparisons. At the end of the section, research question 1(a) will be answered given these results.

*Effects on the Five Areas of Performance as a Whole*

The first analysis involved an examination of the effects of type of post-reading instructional scaffold on the five areas of WebQuest writing performance as a whole. In examining these omnibus effects, a one-way multivariate analysis of covariance (MANCOVA) was used, with the five posttest variables of overall writing quality, content, fluency, syntactic complexity, and lexical complexity as dependent variables and the pretest on content as the covariate. Results showed a significant difference among the groups, Wilk’s lambda = .77, $F(10, 192) = 2.63, p = .005, \eta^2 = .12$, observed power = .96, indicating that there was a significant treatment effect on the whole set of the five dependent variables, controlling for the effect of the initial, pretest differences on content.

*Effects on Each of the Five Areas of Performance*

As the MANCOVA revealed that the treatment groups differed with respect to at least one of the five dependent variables (controlling for the effect of the pretest differences), follow-up univariate analyses of covariance (ANCOVAs) were conducted on each of the dependent variables to see on which dependent variable(s) the treatment groups differed, thereby contributing to the overall significant result from the omnibus MANCOVA. Results showed significant differences among the groups in overall writing quality ($F(2, 100) = 4.50, p = .013, \eta^2 = .08$, observed power = .76) and content ($F(2, 100) = 7.84, p = .001, \eta^2 = .14$, observed power = .95). The medium and large effect
sizes for overall writing quality and content, respectively (i.e., $\eta_p^2 = .08$ and $\eta_p^2 = .14$, respectively) indicate that type of post-reading instructional scaffold accounts for 8% and 14% of the total variances in overall writing quality and content, respectively, controlling for the effect of pretest scores on content (see Huck, 2012 for a discussion of the lower limits of .06 and .14 for medium and large effect sizes for partial eta squared, as well as eta squared). The mean differences among the groups in fluency, syntactic complexity, and lexical complexity were not significant. Table 3 presents the adjusted means and standard errors of measures on each of the five variables by type of post-reading instructional scaffold. An integrated summary of the five one-way ANCOVAs is presented in Table 4.

Table 3. Adjusted Means and Standard Errors of Measures on Each of the Five Dependent Variables by Type of Post-reading Instructional Scaffold

<table>
<thead>
<tr>
<th>Type of scaffold</th>
<th>Adjusted mean (Standard error)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quality</td>
</tr>
<tr>
<td>Online IC (n = 36)</td>
<td>7.88 (.37)</td>
</tr>
<tr>
<td>Online recitation (n = 36)</td>
<td>6.86 (.37)</td>
</tr>
<tr>
<td>No scaffold (n = 32)</td>
<td>6.29 (.39)</td>
</tr>
</tbody>
</table>

Note: Quality = Overall writing quality, Syntactic = Syntactic complexity, and Lexical = Lexical complexity.
Table 4. Analyses of Covariance for Effects of Type of Post-reading Instructional Scaffold on Each of the Five Dependent Variables

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>Between</td>
<td>42.72</td>
<td>2</td>
<td>21.36</td>
<td>4.50*</td>
</tr>
<tr>
<td></td>
<td>Within</td>
<td>474.61</td>
<td>100</td>
<td>4.75</td>
<td></td>
</tr>
<tr>
<td>Content</td>
<td>Between</td>
<td>89.97</td>
<td>2</td>
<td>44.99</td>
<td>7.84**</td>
</tr>
<tr>
<td></td>
<td>Within</td>
<td>573.70</td>
<td>100</td>
<td>5.74</td>
<td></td>
</tr>
<tr>
<td>Fluency</td>
<td>Between</td>
<td>3,358.82</td>
<td>2</td>
<td>1679.41</td>
<td>.31</td>
</tr>
<tr>
<td></td>
<td>Within</td>
<td>528,246.97</td>
<td>100</td>
<td>5,482.47</td>
<td></td>
</tr>
<tr>
<td>Syntactic</td>
<td>Between</td>
<td>27.13</td>
<td>2</td>
<td>13.56</td>
<td>1.05</td>
</tr>
<tr>
<td></td>
<td>Within</td>
<td>1,294.31</td>
<td>100</td>
<td>12.94</td>
<td></td>
</tr>
<tr>
<td>Lexical</td>
<td>Between</td>
<td>.02</td>
<td>2</td>
<td>.01</td>
<td>2.01</td>
</tr>
<tr>
<td></td>
<td>Within</td>
<td>.51</td>
<td>100</td>
<td>.005</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05.

**p < .01.

Note: Quality = Overall writing quality, Syntactic = Syntactic complexity, and Lexical = Lexical complexity.
Pairwise Differences: Post Hoc Comparisons

While the results of the univariate ANCOVAs showed that there were significant differences among the groups in overall writing quality and content (controlling for the effect of the pretest differences), they did not reveal where the significant differences lay, or more specifically, in which pairs of the three groups the significant differences lay. Thus, post hoc pairwise comparisons were conducted on each of the two dependent variables (i.e., overall writing quality and content) in order to evaluate pairwise differences among the adjusted means for the groups and thereby to obtain results pertinent to the specific hypotheses pertaining to the five areas of WebQuest writing performance. For all pairwise comparisons, the Bonferroni adjustment technique (alpha / number of comparisons) was used to control for Type I error due to alpha inflation. Specifically, in lieu of an a priori alpha level of .05, an adjusted alpha (α′) of .017 (α′ = .05 / 3 = .017) was used as the criterion against which obtained p values for each pairwise comparison were compared.28

Results of the post hoc pairwise comparisons showed that there was a significant difference between the online IC and non-scaffold (i.e., control) groups with respect to overall writing quality (\(p = .004, d = .75\)). As for the area of content, results revealed that there were significant differences between the online IC and online recitation groups (\(p = .008, d = .66\)) and between the online IC and non-scaffold groups (\(p < .001, d = .96\)). More specifically, the results indicated that students who had received the online IC

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28 Again, the use of the Bonferroni adjustment technique in this study represents my attention to Dr. Newman’s earlier concern over Type I error inflation in this study (see for details footnote 20 in the Data Analysis section for the quantitative phase of the study in Chapter 3).
treatment \((M = 7.88)\) scored significantly higher on overall writing quality, controlling for
the effect of the pretest differences on content, than students who had not received any
post-reading instructional scaffold \((M = 6.29)\) and that students who had received the
online IC treatment \((M = 9.16)\) also scored significantly higher on content, controlling for
the pretest difference effect, than students who had received the online recitation
treatment \((M = 7.58)\) and students who had not received any post-reading instructional
scaffold treatment at all \((M = 6.86)\). The effect sizes for these significant adjusted mean
differences (i.e., \(d = .75\), \(d = .66\), and \(d = .96\)) were at least medium, with \(d = .96\) for the
difference between the online IC and non-scaffold groups in the area of content being
large (see Cohen, 1988; Huck, 2012, for discussions of the lower limits of .50 and .80 for
medium and large Cohen’s \(d\) effect sizes). Table 5 shows the results of these post hoc
pairwise comparisons.
Table 5. Pairwise Comparisons and Effect Sizes of Overall Writing Quality and Content by Type of Post-reading Instructional Scaffold

Adjusted mean difference (|\bar{X}_i - \bar{X}_k|)  
(Effect sizes are indicated in parentheses.)

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Group</th>
<th>Mean</th>
<th>Adjusted mean</th>
<th>1. Online IC</th>
<th>2. Online recitation</th>
<th>3. No scaffold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>1. Online IC</td>
<td>8.14</td>
<td>7.88</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Online recitation</td>
<td>6.69</td>
<td>6.86</td>
<td>1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. No scaffold</td>
<td>6.19</td>
<td>6.29</td>
<td>1.60*</td>
<td>.57</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(d = .75)</td>
<td></td>
</tr>
<tr>
<td>Content</td>
<td>1. Online IC</td>
<td>9.44</td>
<td>9.16</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Online recitation</td>
<td>7.39</td>
<td>7.58</td>
<td>1.58*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(d = .66)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. No scaffold</td>
<td>6.75</td>
<td>6.86</td>
<td>2.29*</td>
<td>.71</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(d = .96)</td>
<td></td>
</tr>
</tbody>
</table>

*p < .017

Note: 1. Any minor discrepancies in calculated values of adjusted mean differences are due to rounding. 2. Quality = Overall writing quality.
Putting It Together: Answering Research Question 1(a)

Research question 1(a), concerning the relative effects of treatments, required an examination of pairwise differences among the three groups, following an investigation of overall significant effects on each of the five dependent variables. The series of analyses described thus far was intended to answer that particular research question, i.e., “What are the relative effects of online IC vs. online recitation vs. no post-reading instructional scaffold on the overall writing quality, content, fluency, syntactic complexity, and lexical complexity, respectively, of EFL learners’ WebQuest writing?”

As we have seen, results from the final, post hoc examination of pairwise differences on overall writing quality and content showed that in the area of overall writing quality, the effect of online IC was significantly greater than that of no post-reading instructional scaffold ($p = .004, d = .75$). Results also revealed that in the area of content, online IC was more effective than both online recitation ($p = .008, d = .66$) and no post-reading instructional scaffold ($p < .001, d = .96$). In the other three areas of WebQuest writing, i.e., fluency, syntactic complexity, and lexical complexity, no significantly different effectiveness was found between any two treatments, because the preceding ANCOVA revealed no significant overall effect on any of the three variables. These results, on the other hand, provide answers to the question of whether or not the specific pairwise research hypotheses concerning each of the five dependent variables are supported.\footnote{Results from the ANCOVAs, following the MANCOVA, provide an answer to the question of whether or not the general research hypothesis pertaining to each of the five variables (i.e., “Type of post-reading instructional scaffold will impact EFL learners’ WebQuest writing performance in each of the five areas of WebQuest writing”) is supported. This will also be addressed in Chapter 5.}

This, however, will be addressed in Chapter 5.
Effects of Treatments on Overall WebQuest Writing Performance

In this section, I will present results from a one-way analysis of variance (ANOVA) conducted on the general, composite variable of overall WebQuest writing performance. I will then present results from post-hoc pairwise comparisons, which employed the Tukey HSD and Scheffe tests. At the end of the section, research question 1(b) will be answered given these results.

Effects on Overall WebQuest Writing Performance

Since a preliminary analysis of the pretest data indicated that there was no significant difference in overall WebQuest writing performance among the three groups, a one-way analysis of variance (ANOVA) was used to examine the overall effects of the different independent variable treatments on students’ overall WebQuest writing performance. Results showed a significant difference among the groups in overall WebQuest writing performance, $F(2, 101) = 4.28$, $p = .016$, $\eta^2 = .08$, observed power = .74, indicating that there was a significant treatment effect on the students’ overall WebQuest writing performance. The medium effect size, $\eta^2 = .08$, indicates that type of post-reading instructional scaffold accounts for 8% of the total variance in overall WebQuest writing performance (see Huck, 2012 for a discussion of the medium effect size range of .06 - .14 for partial eta squared, as well as eta squared). Table 6 shows the means and standard deviations of overall WebQuest writing performance by type of post-reading instructional scaffold. A summary of the ANOVA is presented in Table 7.
Table 6. Means and Standard Deviations of Overall WebQuest Writing Performance by Type of Post-reading Instructional Scaffold

<table>
<thead>
<tr>
<th>Type of Scaffold</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Number of subjects per treatment (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online IC</td>
<td>300.85</td>
<td>44.12</td>
<td>36</td>
</tr>
<tr>
<td>Online recitation</td>
<td>275.92</td>
<td>45.35</td>
<td>36</td>
</tr>
<tr>
<td>No Scaffold</td>
<td>266.81</td>
<td>60.56</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 7. Analysis of Variance for Effects of Type of Post-reading Instructional Scaffold on Overall WebQuest Writing Performance

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>21,503.73</td>
<td>2</td>
<td>10,751.86</td>
<td>4.28*</td>
</tr>
<tr>
<td>Within</td>
<td>253,806.74</td>
<td>101</td>
<td>2,512.94</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>275,310.46</td>
<td>103</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

Pairwise Differences: Post Hoc Comparisons

While the ANOVA F test revealed that there was a significant difference among the group means, it did not provide information about where the significant difference lay, i.e., between which groups the significant difference was located. Thus, post-hoc tests were conducted to find out which pair or pairs of group means were significantly
different from each other and thereby to obtain results pertinent to the specific hypotheses pertaining to overall WebQuest writing performance. The Tukey HSD test was used to compare the means of the IC group (n=36) vs. the recitation group (n=36), and the Scheffe test used to compare the means of the IC group (n=36) vs. the non-scaffold group (n=32) and the recitation group (n=36) vs. the non-scaffold group (n=32).

The post hoc tests revealed a significant difference between the online IC and non-scaffold (i.e., control) groups ($p = .023, d = .68$). The mean differences between the online IC and recitation groups and between the recitation and control groups were not significant ($p = .093$ and $p = .756$, respectively). More specifically, the results of the post hoc pairwise comparison tests indicated that students who had received the online IC treatment ($M = 300.85$) scored significantly higher on overall WebQuest writing performance than students who had not received any post-reading instructional scaffold ($M = 266.81$). Since no other two groups’ means were significantly different, the results also indicated that the significant overall $F$ obtained from the ANOVA was due only to the difference in overall WebQuest writing performance between the online IC and non-scaffold groups. The effect size for the significant mean difference between these two groups, i.e., $d = .68$, falls into Cohen’s (1988) category of medium effect size (see also Huck, 2012). Table 8 shows the results of these post hoc pairwise comparisons.
Table 8. Pairwise Comparisons and Effect Sizes of Overall WebQuest Writing Performance by Type of Post-reading Instructional Scaffold

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>1. Online IC</th>
<th>2. Online recitation</th>
<th>3. No scaffold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Online IC</td>
<td>300.85</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Online recitation</td>
<td>275.92</td>
<td>24.93</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3. No scaffold</td>
<td>266.81</td>
<td>34.04*</td>
<td>9.11</td>
<td>(d = .68)</td>
</tr>
</tbody>
</table>

*<i>p < .05</i>

Putting It Together: Answering Research Question 1(b)

Research question 1(b), concerning the relative effects of treatments on overall WebQuest writing performance, required an examination of pairwise differences among the three groups, following an investigation of an overall significant effect on overall WebQuest writing performance. The two successive analyses described above was intended to answer that particular research question, i.e., “What are the relative effects of online IC vs. online recitation vs. no post-reading instructional scaffold on EFL learners’ overall WebQuest writing performance?” As we have seen, results from the post hoc examination of pairwise differences in overall WebQuest writing performance showed that the effect of online IC was significantly greater than that of no post-reading instructional scaffold (<i>p = .023, d = .68</i>). Results, however, revealed that the effects of online IC vs. online recitation, as well as the effects of online recitation vs. no post-
reading instructional scaffold, were not significantly different. These results, on the other hand, provide answers to the question of whether or not the specific pairwise research hypotheses concerning overall WebQuest writing performance is supported.\textsuperscript{30} This will be addressed in Chapter 5.

Qualitative Phase

The quantitative results presented in the preceding section, i.e., the online IC group’s superior performance in the areas of overall writing quality and content and in overall WebQuest writing, led to the conduct of the second, qualitative phase of the study. In order to explain these quantitative results, a qualitative research question was developed, three participants who could best explain the results were selected, and then qualitative data were collected (see the section entitled “Research Design” in Chapter 3). The following question, which consists of three subquestions, is the newly developed qualitative research question based upon the quantitative findings\textsuperscript{31}:

\textit{Research Question 2}: What aspects and features of IC and IC discourse may have assisted the EFL learners in the online IC group in their WebQuest writing performance?

(a) What aspects and features of IC and IC discourse may have assisted them in their overall WebQuest writing performance?

(b) What aspects/features of IC and IC discourse may have assisted them in their WebQuest writing performance in the area of content?

\textsuperscript{30} Results from the one-way ANOVA provide an answer to the question of whether or not the general research hypothesis pertaining to overall WebQuest writing performance (i.e., “Type of post-reading instructional scaffold will impact EFL learners’ overall WebQuest writing performance”) is supported. This will also be addressed in Chapter 5.

\textsuperscript{31} The overarching question is the same as the one presented in the dissertation proposal. The subquestions were added to the original question based upon the quantitative results.
(c) What aspects/features of IC and IC discourse may have assisted them in their WebQuest writing performance in the area of overall writing quality?

Analyses of interview data for each case and across cases yielded three themes with regard to aspects and features of IC and IC discourse that might have assisted the EFL learners in their overall WebQuest writing performance: (a) the structure/sequence of IC, (b) interactive participation, and (c) thematic focus. The analyses also yielded themes regarding aspects and features of IC and IC discourse that might have assisted the EFL learners in their WebQuest writing performance in the respective areas of content and overall writing quality. For content, two themes were produced: (a) the structure/sequence of IC and (b) thematic focus. For overall writing quality, a single theme was produced: IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality. Descriptions of each case follow.

Case 1: Joonho32

Joonho was 21 years old (in Korean age) and in his freshman year at the university. As a Korean native, he had been learning EFL as a compulsory school subject for approximately 11 years since his third year in elementary school. The EFL/EAP course that Joonho was taking at the time of the interview was his second university EFL course. While he had never lived in an English-speaking country, Joonho had a prior experience of visiting the United States for two months to participate in an extracurricular camp for elementary school students. Joonho’s major at the university was Thai language and literature. He was single and had no professional work experience.

32 All the names of the three cases appearing in this paper are pseudonyms.
Overall WebQuest Writing Performance

(a) The structure/sequence of IC. The structure/sequence of IC, characterized by a pre-reading IC followed by a post-reading IC, assisted Joonho in his overall WebQuest writing performance. When asked about aspects and features of IC that had assisted him in his overall WebQuest writing performance, as the term “overall WebQuest writing performance” was defined as the composite of performances on overall writing quality, content, fluency, syntactic complexity, and lexical complexity in a student’s WebQuest essay writing (see question 3 in the interview protocol in Appendix F), Joonho first commented on the pre-reading IC’s role of providing a framework for subsequent reading: “During the initial 5-minute IC, I was able to establish the framework for the content of the materials to read next.” He then went on to say, “Then, for the next 20 minutes, I had the opportunity to read the materials with a focus on a specific topic [which had been introduced during the 5-minute pre-reading IC].”

Following this, Joonho stated that he was able to gain a deeper understanding of the content of the readings through the post-reading IC, which followed the sequence of the pre-reading IC and reading: “Finally, I was able to gain a deeper understanding of information through the main IC [i.e., the post-reading IC], during which we talked about the necessary, essential information that we had read about.” As he explained subsequently, “When you read with a focus on a topic and with a framework in your head, you get a better understanding of information.” This better understanding, according to Joonho, in turn helped him with his WebQuest essay writing.

(b) Interactive participation. Interactive, multi-way exchanges of understandings of reading content during the IC, along with the opportunity to modify misunderstandings of
the reading content through such exchanges, also assisted Joonho in his overall WebQuest writing performance. Joonho noted, “As I view it, IC discourse is characterized by mutual and multi-way exchanges of information, and I think through these exchanges, students can catch the important content that they had missed while reading.” He went on to state, “As far as I am concerned, while writing the essay, I was able to modify the wrong information that I had obtained during the reading, thanks to these discourse exchanges.” When asked whether he had the teacher’s or students’ role in mind in making statements on the multi-way discourse exchanges, Joonho explained, “Since it was primarily students who exchanged views on the reading information, I benefited primarily from students’ contributions of their thoughts. However, the teacher also played a role by providing a general direction for the exchanges.” As he confirmed subsequently, these ultimately aided him in writing his WebQuest essay.

(c) Thematic focus. In writing his WebQuest essay, Joonho also benefited from the thematically focused nature of IC. As he reported, “When it comes to the role of the teacher, he provided assistance by having students discuss information pertaining to a certain theme. … This was very helpful [to my essay writing].” While commenting on the characteristics of the IC discourse strategies employed by the teacher that had been conducive to his WebQuest essay writing, Joonho noted, “During the IC, the teacher distinguished necessary and unnecessary information from the readings and led the IC discussion in such a way that students could focus only on necessary, important information related to the theme.” In short, Joonho indicated that the teacher’s focus on a theme during the IC discussion, along with his focus on necessary, important information around the theme, had provided assistance for his WebQuest essay writing.
Performance on Content

(a) The structure/sequence of IC. The structure/sequence of IC assisted Joonho in his WebQuest writing performance in the area of content. In describing the positive role of IC in providing assistance in students’ discerning content necessary to perform the writing task, Joonho specifically used the term “structure”: “Given the situation in which I was supposed to write a content-focused essay, that is, a compare-and-contrast essay, IC’s structure helped me to discern and acquire necessary information for my writing.”

Particularly, Joonho noted the role of the pre-reading IC:

The readings were about Monet and Cezanne. When the teacher was giving us 20 minutes to read the materials [during the pre-reading IC], he told us to read with a focus on a certain thing related to the two artists. This provided the greatest help for my essay writing.

In response to the researcher’s probing question concerning the “a certain thing” that he had mentioned, Joonho said, “The teacher told us to focus on the similarities and differences [between Impressionism and Postimpressionism] while reading the materials.”

(b) Thematic focus. Joonho’s writing performance in the area of content also benefited from the thematically focused nature of IC. As Joonho noted, the teacher’s consistent focus on a theme and, relatedly, his focus on necessary/important information related to the theme, was conducive to his performance on content:

I believe that what is most important in IC is the teacher’s focus on information necessary for writing so that students cannot be confused with unnecessary information and can write based on that necessary information. I think it is also
important for the teacher to provide a consistent focus so that students can write within a theme, with consistency within the theme. Indeed, the teacher did all these and ultimately helped us to write around a theme and with consistency.

(c) Other. Other themes that emerged with regard to aspects and features of IC and IC discourse that had assisted Joonho in his WebQuest writing performance in the area of content included “encouragement of participation” and “interactiveness/responsiveness.” According to Joonho, the teacher encouraged students’ participation by providing them with opportunities to freely express their thoughts and by encouraging them to contribute any thoughts about the reading content:

 Elsewhere you would rarely have the opportunity to express your thoughts freely, but here the teacher often told us to express our thoughts freely. … When we remained silent, he told us to feel free to contribute any of our thoughts about the content of the readings. … Yes, these provided great help for my writing.

Regarding interactiveness/responsiveness, Joonho reported that the teacher’s provision of summaries in response to student contributions and other students’ responses to teacher questions were conducive to his improving the content of his writing:

 The teacher often summarized what we had said. Looking at his summaries provided in textual form enhanced understanding of the core content. Without the summaries, I would simply have retained all the massive information in my head, without having it in order. … Yes, I [also] learned from other students’ responses to teacher questions.

Performance on Overall Writing Quality

IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality. IC’s facilitation of content understanding,
along with its positive influence on improving the organization and grammar of writing, assisted Joonho in his WebQuest writing performance in the area of overall writing quality. Joonho first commented on the importance place that content holds in the overall writing quality of an essay:

To me, the most important component of overall writing quality is content, rather than organization or grammar. As far as organization is concerned, there is nothing you can do about it because it is something already prescribed when it comes to essay writing. … Therefore, content occupies the greatest, important place in overall writing quality.

Following this, Joonho articulated what about IC had assisted in his performance on overall writing quality and how:

When you write about something that you have a good understanding of, the organization and grammar of your writing becomes good automatically. … [This said,] Since IC facilitates content understanding through exchanges of information, the organization and grammar of your writing becomes good automatically. From these, your overall writing quality improves.

In short, Joonho indicated that IC’s facilitation of understanding of content, along with the automatically resulting improvement in the other two components of overall writing quality, i.e., organization and grammar, had assisted him in his performance on the overall writing quality of his essay. Joonho confirmed this point later during the interview.
Case 2: Cheolsoo

Cheolsoo was 26 years old (in Korean age) and in his junior year at the university. As a Korean native, he had been learning EFL as a compulsory school subject for approximately 12 years since his fourth year in elementary school. Upon completion of his study for the first semester of the sophomore year, Cheolsoo joined the Korean army to carry out his mandatory military service. As a returned student, he was now taking the EFL/EAP course as his second EFL course at the university. Cheolsoo’s major at the university was Thai language and literature. He had no prior experience of living in an English-speaking country. He was single and had no professional work experience.

Overall WebQuest Writing Performance

(a) The structure/sequence of IC. The structure/sequence of IC assisted Cheolsoo in his overall WebQuest writing performance. Cheolsoo first commented on the pre-reading IC’s role of providing a direction and focus for subsequent reading: “As far as I think, in terms of IC’s composition, for the first five minutes the teacher provided a direction and focus for our subsequent reading of the materials.” He then went on to speak of the conduciveness of the pre-reading IC to his subsequent reading and later writing: “Pre-reading IC’s provision of this direction and focus was very helpful to my subsequent reading of the texts and later writing.” In short, Cheolsoo was articulating the point that the pre-reading IC, which provided a direction and focus for subsequent reading, first served to enhance his understanding of the reading texts, and then, this enhanced understanding of the reading texts, which was attributable to the pre-reading IC, in turn assisted him in his later writing.
(b) Interactive participation. Interactive participation during the IC discussion also served to assist Cheolsoo in his overall WebQuest writing performance. Specifically, the teacher’s provision of summaries in response to multiple students’ contributions, along with the multiple, timely occurrences of his provision of such summaries, provided assistance to Cheolsoo. Cheolsoo noted, “During the IC discussion, the teacher provided summaries of our discussions. Through this, he helped us to enhance our overall understanding [of the reading content].” Cheolsoo then added, “He did this whenever multiple students have completed contributing their thoughts on a topic.” According to Cheolsoo, this enhanced understanding of the content of the readings, which resulted from the teacher’s multiple, timely provisions of summaries in response to students’ contributions, ultimately helped him with his WebQuest essay writing.

(c) Thematic focus. In writing his WebQuest essay, Cheolsoo was also assisted by the thematically focused nature of IC. Specifically, consistent discussion on a theme during the IC session was conducive to his understanding of the reading texts and ultimately to his essay writing: “The teacher led the discussion in such a way that we could discuss on a certain theme consistently.” When asked specifically what he meant by consistent discussion on a certain theme, Cheolsoo explained, “Consistent discussion on a certain theme means our delving into the characteristics of the two artists’ work throughout the discussion session, and it was good.” Relatedly, Cheolsoo commented on the teacher’s exclusion of unnecessary themes from discussion: “The teacher did not deviate from the established framework of discussion and excluded unnecessary themes from the discussion. … This was helpful to understanding the characteristics of the artists’ work.”
Performance on Content

(a) The structure/sequence of IC. The structure/sequence of IC assisted Cheolsoo in his WebQuest writing performance in the area of content. Cheolsoo commented succinctly on the pre-reading IC’s role of providing a direction and focus for subsequent reading and its resulting assistance with his subsequent reading and later writing:

As I stated previously [in response to the previous question pertaining to overall WebQuest writing performance], during the first five minutes, the teacher provided a focus and presented a direction for our subsequent reading, and this was very helpful to my reading and writing.

This statement coincides with his previous statements on the pre-reading IC’s role in terms of providing assistance in his overall WebQuest writing performance. In response to the researcher’s clarification question of whether he was focusing on the content component of overall WebQuest writing performance when he said the same thing for overall WebQuest writing performance, Cheolsoo said, “Yes.”

(b) Thematic focus. The thematically focused nature of IC also provided assistance in Cheolsoo’s WebQuest writing performance in the area of content. Specifically, consistent discussion on a theme and the teacher’s provision of summaries related to the theme served to aid him in his writing performance on content. Cheolsoo noted,

The teacher did not talk about unnecessary things. As I said previously [in response to the previous question pertaining to overall WebQuest writing performance], he consistently led the discussion in such a way that we could discuss on the theme of the characteristics of the artists’ work. This enabled me to write the compare-and-contrast essay [about the artists’ work] without much difficulty.
This coincides largely with what he said in response to the researcher’s previous question pertaining to overall WebQuest writing performance. Again, when asked whether he was focusing on the content component of overall WebQuest writing performance when he said largely the same for overall WebQuest writing performance, Cheolsoo said, “Yes.” Finally, regarding the teacher’s provision of summaries related to the theme, Cheolsoo reported, “Also, the teacher’s provisions of summaries of our discussions, which pertained to the characteristics of the artists’ work, were very conducive to my writing.”

Performance on Overall Writing Quality

*IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality.* Cheolsoo’s writing performance in the area of overall writing quality benefited much from the teacher’s systematic probing of reading content around a theme, which resulted in facilitating/enhancing his understanding of the reading content. Cheolsoo reported,

The teacher asked a number of questions concerning the content of the readings one by one and in systematic order, for example, questions about Monet and Cezanne, about the characteristics of their work. These questions engaged us in delving deeper and deeper into the details of the reading content. Having gone through this, I was able to write more easily with better content understanding.

When asked which of the three component areas of overall writing quality, i.e., content, organization, and grammar, such a systematic probing of content by the teacher was most conducive to, Cheolsoo replied, “It had the greatest positive impact on content.” In response to the researcher’s further question of whether he meant that such a probing
session that he had gone through did not have any positive influence on the other two components of overall writing quality, i.e., organization and grammar, he stated, “Content is related to organization. As I said earlier, consistent discussion on content around a theme was beneficial and helpful to organizing my essay writing properly.” Cheolsoo confirmed subsequently that what he meant was that his enhanced understanding of content resulting from the teacher’s systematic probing of content had a positive impact on improving the organization of his writing.

*Case 3: Gildong*

Gildong, a Korean native, was 24 years old (in Korean age) and in his sophomore year at the university. He had been learning EFL as a compulsory school subject for approximately 12 years since his third year in elementary school. Upon completing the first semester of his sophomore year, Gildong joined the Korean army to carry out his mandatory military service. As a returned student, he was now taking the EFL/EAP course as his second EFL course at the university. Gildong’s major at the university was German language and literature. Like the other two participants (i.e., Joonho and Cheolsoo), he had no prior experience of living in an English-speaking country. At the time of the interview, Gildong was single and had no professional work experience.

*Overall WebQuest Writing Performance*

*(a) The structure/sequence of IC.* In writing his WebQuest essay, Gildong was assisted by the structure/sequence of IC. Gildong began with a comment on the pre-reading IC’s role of providing students with opportunities to know the key concepts contained in the readings; “At the beginning of the IC lesson, the teacher asked us questions about the key concepts contained in the materials that we would soon read. …
This provided help for my later writing, as well as reading.” Gildong went on to comment on the pre-reading IC’s role of cueing important content to attend to during subsequent reading and later writing: “In the course of answering those questions, we came to be pre-informed about the important content to attend to during reading and later writing, regardless of whether or not we had a correct prior knowledge of the concepts.” He reported that all these were conducive to his overall WebQuest writing by adding the following:

Consequently, these provided help with my writing in that I was able to focus on the important concepts and content while writing the essay. They also provided help by informing me what should constitute the core content in terms of the structure of my writing.

(b) Interactive participation. Gildong’s WebQuest writing performance also benefited from the teacher’s posing questions in response to student contributions, as well as students’ active participation and interaction. Regarding the teacher’s asking questions in response to student contributions, Gildong noted,

After we have completed reading the texts, the teacher asked questions and students answered. During that time, when students gave their answers, the teacher often asked additional questions, such as “How do you know that?” or “Tell me more about that.” Through this, we could deepen our thoughts about the readings. And we could also be reminded of the parts of the readings that we had read but that we had forgotten about. All these provided help with my essay writing.

Gildong reported on students’ active participation and interaction as follows:

IC was helpful to my essay writing because it involved students’ direct participation,
rather than the teacher’s one-way transmission of information. Direct participation means active participation, and … Also, I was impressed and helped by the structure of IC, which featured mutual discussion between the teacher and students with no right answers in mind and where students could express their thoughts freely.

(c) Thematic focus. The thematically focused nature of IC also served to assist Gildong in writing his WebQuest essay. Commenting on participants’ in-depth discussion on a theme during the IC, he remarked, “IC involved the teacher’s asking questions on a theme and the teacher’s and students’ in-depth discussion on that particular theme. … This helped me to write logically, as well as to gain a deeper understanding of information.” He then went to comment on IC’s feature of questioning and answering on a theme: “[IC] was also helpful in that it involved the teacher’s asking questions on that particular theme and students’ answering those questions.” Then, in-depth discussion on a theme during IC, along with questioning and answering on that particular theme, helped Gildong with his essay writing.

(d) Other. Other themes that emerged in relation to Gildong’s overall WebQuest writing performance included “encouragement of active, general participation” and “learning from other students’ responses to teacher questions.” According to Gildong, the teacher encouraged students’ active, general participation by providing them with opportunities for active participation on the one hand and by encouraging all students’ participation on the other:

The teacher provided us with opportunities to actively participate, rather than attempting to transmit information to us. He wanted us to participate regardless of whether we had the right answers or not. … He induced all students’ participation and
really encouraged all students’ participation. These were helpful, I think.

With regard to his learning from other students’ responses to teacher questions, Gildong reported,

As everyone participated, a range of answers [to teacher questions] emerged. Here, I had the opportunity to access all these answers. Particularly, accessing students’ varied answers was helpful to my essay writing because I was able to obtain a wide range of information from their varied answers. The different answers from students were also helpful to my writing because they enabled me to think from different perspectives.

Performance on Content

(a) The structure/sequence of IC. With regard to aspects/features of IC and IC discourse that served to help him with his WebQuest writing performance in the specific area of content, Gildong first commented on the pre-reading IC’s provision of a key topic and its resulting help with his knowing important content during subsequent reading and later writing:

Yeah, in the beginning of the IC lesson, the teacher provided a topic for us to think about before reading the materials. He asked such questions as ‘Do you know Monet and Cezanne?’ ‘Do they have anything to do with Impressionism and Post-Impressionism?’ and ‘If so, why do you think so?’ The teacher’s provision of this topic in the very beginning of the lesson was very helpful to my reading and writing. For reading, it helped me to identify which parts of the readings were important. And for writing, it helped me to get to know what should constitute the most important content of my writing, as well as how I should set the framework of my writing in
terms of content.

Gildong then reported on the post-reading IC’s role of enabling him to gain a deeper understanding of content: “[Then.] After reading the materials, we talked deeply about the content of the readings with the teacher. … This deep talk and discussion on some topics helped me to obtain profound information about the readings.” All these taken together, Gildong was addressing the conduciveness of IC’s inherent structure/sequence to his reading and ultimately to his writing.

(b) Thematic focus. In-depth discussion on a theme, as well as questioning and answering on the theme, also contributed positively to Gildong’s performance on content. Concerning the in-depth discussion on a theme, Gildong noted, “While talking about a number of topics [after reading the materials], we engaged in deep discussions on a theme. This helped me to write better, equipped with a deep understanding of information.” When asked specifically what the theme was, he stated that it was “the differences between Monet and Cezanne and the characteristics of their work.”

Regarding questioning and answering on some topics within the larger theme, Gildong remarked,

We talked about topics such as ‘Who is Monet?’ ‘What do they have to do with Impressionism and Realism?’ … and ‘What are the characteristics of their work and the differences between their works?’ We engaged in deep discussions on these topics through questions and answers. … And it was helpful.

Performance on Overall Writing Quality

IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality. IC’s facilitation of content understanding,
along with its positive influence on improving the organization of writing, assisted Gildong in improving his WebQuest writing performance in the area of overall writing quality. Gildong began with a comment on the conduciveness of IC to his understanding of reading content and to his essay writing: “The answer to this question is similar to the one that I gave in response to the previous question [regarding performance on content]. … IC … was conducive to my understanding of content and therefore to my writing.” He then went on to articulate the positive contribution of his enhanced content understanding gained through the IC to his essay writing: “And this good understanding [of content] served to provide help for my thinking about how to organize my writing.” In response to the researcher’s confirmation question of whether he meant that his enhanced understanding of content gained through the IC first had a positive influence on the content component of the overall writing quality of his essay and this heightened understanding of content in turn impacted positively on the organization of his writing, Gildong said, “Yes, that’s what I meant.” Also, when asked his enhanced content understanding did not have a positive impact on the grammar of his writing, Gildong said that it did not help much, adding, “As far as grammar is concerned, your possession of the basic knowledge of it as a skill is most important, I think.”

**Cross-case Analysis**

Three common themes emerged with regard to aspects and features of IC and IC discourse that might have assisted the EFL learners in their overall WebQuest writing performance: (a) the structure/sequence of IC, (b) interactive participation, and (c) thematic focus. As for the area of content, two common themes emerged from the data: (a) the structure/sequence of IC and (b) thematic focus. For overall writing quality, there
was a single common theme: IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality. These themes, along with some of the codes that constituted the themes, will be presented in the subsections that ensue (see Table 9 for a presentation of all codes and themes).
### Table 9. Themes and Codes Across Cases

<table>
<thead>
<tr>
<th>Areas of Performance Theme</th>
<th>Joonho</th>
<th>Cheolsoo</th>
<th>Gildong</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall WebQuest Writing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The structure/sequence of IC</td>
<td>• Pre-reading IC’s provision of a framework and focus for subsequent reading</td>
<td>• Pre-reading IC’s provision of a direction and focus for subsequent reading</td>
<td>• Pre-reading IC’s provision of opportunities to know the key concepts/content contained in the readings</td>
</tr>
<tr>
<td>Interactive participation</td>
<td>• Gaining a deeper understanding of content through post-reading IC, following the pre-reading IC and reading</td>
<td>• Its resulting help with subsequent reading and later writing</td>
<td>• Pre-reading IC’s cueing of important content to attend to during subsequent reading and later writing</td>
</tr>
<tr>
<td>Thematic focus</td>
<td>• Interactive, multi-way exchanges of understandings of reading content/information</td>
<td>• Teacher’s provision of summaries in response to multiple students’ contributions</td>
<td>• Teacher questioning in response to student contributions</td>
</tr>
<tr>
<td></td>
<td>• Modifying misunderstandings of reading content through such exchanges</td>
<td>• Multiple, timely occurrences of provision of such summaries</td>
<td>• Students’ active participation and interaction</td>
</tr>
<tr>
<td></td>
<td>• Teacher’s focus on a theme</td>
<td>• Consistent discussion on a theme / Focus on a theme</td>
<td>• In-depth discussion on a theme</td>
</tr>
<tr>
<td></td>
<td>• Teacher’s focus on necessary/important information around the theme</td>
<td>• Exclusion of unnecessary themes from discussion</td>
<td>• Questioning and answering on a theme</td>
</tr>
</tbody>
</table>
Table 9. (Continued)

<table>
<thead>
<tr>
<th>Areas of Performance Themes</th>
<th>Joonho</th>
<th>Cheolsoo</th>
<th>Gildong</th>
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<tbody>
<tr>
<td><strong>Content</strong></td>
<td></td>
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</tr>
<tr>
<td>The structure/sequence of IC</td>
<td>• IC sequence/structure, which served to help the participant to discern content/information necessary to perform the writing task</td>
<td>• Pre-reading IC’s provision of a direction and focus for subsequent reading</td>
<td>• Pre-reading IC’s provision of a key topic</td>
</tr>
<tr>
<td></td>
<td>• Pre-reading IC’s provision of a focus/direction for subsequent reading</td>
<td>• Its resulting help with subsequent reading and later writing</td>
<td>• Its resulting help with knowing important content during subsequent reading and later writing</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Gaining a deeper understanding of content through post-reading IC</td>
</tr>
<tr>
<td>Thematic focus</td>
<td>• Teacher’s consistent focus on a theme</td>
<td>• Consistent discussion on a theme</td>
<td>• In-depth discussion on a theme</td>
</tr>
<tr>
<td></td>
<td>• Teacher’s focus on necessary/important information related to the theme</td>
<td>• Teacher’s provision of summaries related to the theme</td>
<td>• Questioning and answering on a theme</td>
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<tr>
<td>Overall Writing Quality</td>
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<tr>
<td>IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality</td>
<td>• IC’s facilitation of understanding of content through exchanges of information</td>
<td>• Teacher’s probing of content around a theme resulting in facilitation/enhancement of content understanding</td>
<td>• IC’s facilitation of understanding of content</td>
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<tr>
<td></td>
<td>• Its positive influence on improving the organization and grammar of writing</td>
<td>• Its positive influence on improving the organization of writing</td>
<td>• Its positive influence on improving the organization of writing</td>
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</table>
Overall WebQuest Writing Performance

What follows is a presentation of the three common themes that emerged with regard to aspects/features of IC and IC discourse that had served to assist the three participants in their overall WebQuest writing performance, along with some of the codes that constituted the themes.

The structure/sequence of IC. This included (a) pre-reading IC’s provision of a direction and focus for subsequent reading, (b) its resulting help with subsequent reading and later writing, and (c) gaining a deeper understanding of content through post-reading IC.

Interactive participation. This included (a) interactive, multi-way exchanges of understandings of reading content/information; (b) teacher’s provision of summaries in response to multiple students’ contributions; and (c) students’ active participation and interaction.

Thematic focus. Among the codes that constituted the theme of thematic focus were (a) teacher’s focus on a theme, (b) consistent discussion on a theme, (c) in-depth discussion on a theme, and (d) questioning and answering on a theme.

Performance on Content

What follows is a presentation of the two common themes that emerged with regard to aspects/features of IC and IC discourse that had served to assist the three participants in their WebQuest writing performance in the area of content, along with some of the codes that led to the themes. As can be seen from Table 9 and the preceding subsection on overall WebQuest writing performance, these two themes, the structure/sequence of IC and thematic focus, also emerged for overall WebQuest writing performance. This
stems fundamentally from the fact that what the interview participants reported in relation to the structure/sequence of IC and its thematic focus for the area of performance on content coincided largely with what they reported in relation to the same for the area of overall WebQuest writing performance. Thus, this resulted in yielding similar sets of codes and ultimately the same themes for overall WebQuest writing performance and performance on content (see Table 9). This will be reiterated at some relevant points in this chapter and will be taken up for discussion in Chapter 5.33

*The structure/sequence of IC.* This included (a) pre-reading IC’s provision of a direction and focus for subsequent reading; (b) its resulting help with subsequent reading and later writing; (c) IC sequence/structure, which served to help the participant to discern content/information necessary to perform the writing task; and (d) gaining a deeper understanding of content through post-reading IC.

*Thematic focus.* Some of the codes that led to this theme were (a) teacher’s consistent focus on a theme, (b) consistent discussion on a theme, (c) in-depth discussion on a theme, (d) teacher’s provision of summaries related to the theme, and (d) questioning and answering on a theme.

33 Upon discovering during the interviews that the interview participants’ responses pertaining to the structure/sequence of IC and its thematic focus for performance on content were largely the same as their previous responses pertaining to the same for overall WebQuest writing performance, the researcher asked both Cheolsoo and Gildong whether they had focused on content in responding to the researcher’s questions on overall WebQuest writing performance. They both replied clearly that it was the case. Joonho, during the member checking process, also confirmed that he mostly had content in mind in reporting on the structural/sequential and thematically focused aspects/features of IC for overall WebQuest writing performance.
Performance on Overall Writing Quality

IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality. The major codes that led to this single theme for performance on overall writing quality were (a) IC’s facilitation of understanding of content, (b) its positive influence on improving the organization of writing, and (c) its positive influence on improving the organization and grammar of writing, and (d) teacher’s probing of content around a theme resulting in facilitation/enhancement of content understanding.

Analysis of Online IC Discussion Texts

An analysis of the texts of the online IC discussions in which the three interviewees participated revealed that the common themes identified through the cross-case analysis of the interview data were well manifested or reflected in the IC discussion data, indicating that the IC discussion data provided good corroborating evidence for the interview results. What follows is a presentation of the results of this corroborative analysis. For each theme, I will verbally present pertinent results under either relatively large text segments (i.e., relatively long text segments consisting of connected discourse exchanges) that illustrate in their entirety pertinent codes/theme from the interview data or relatively large text segments which include smaller, micro-level text segments (e.g., a sentence or two) that illustrate pertinent codes/theme from the interview data, or both types of text segments (see Table 9 for a complete listing of codes and themes).

Themes on Overall WebQuest writing Performance

The structure/sequence of IC. The excerpt below, from the pre-reading IC part of the online IC session in which Joonho participated, exhibits text segments that illustrate codes that emerged from what Joonho and the other two interview participants reported
regarding the pre-reading IC’s roles as they pertained to the structure/sequence of IC.\textsuperscript{34} (Note: In all excerpts, student names, which were generated after color names, are presented as they were actually used during the online IC sessions; since each student in each IC group was assigned one of the same five color names, the same student names in different groups represent different individuals. As for notations used in the excerpts, in all excerpts, (a) micro-level (i.e., relatively small or short) text segments illustrating codes/theme from the interview data that are actually referred to in the body text are bold-faced (cf. in case that an overwhelming majority of an excerpted text illustrates certain code(s)/theme, no part of the text was bold-faced); (b) numbers, when present, represent the consecutive number for each turn within the pertinent excerpt, without consideration of ellipted turns, if any; (c) three dots placed horizontally indicates an ellipsis of words, phrases, or sentences; and (d) two dots placed vertically on the left-hand side of an excerpted text indicates an ellipsis of turns. 

Excerpt 1:

1 Teacher: The texts that you will be reading in this WebQuest lesson are about the world-famous artists Claude Monet and Paul Cezanne. \textbf{Has any one of you ever heard of the terms “Impressionism” and “Post-Impressionism”?}  
2 Yellow: nope

\textsuperscript{34}Excerpts from the pre-reading IC parts of the online IC sessions for Cheolsoo’s and Gildong’s groups are not presented in this section for the following reasons: First, since the teacher faithfully followed a script in conducting lessons for all IC groups, the pre-reading IC texts from Cheolsoo’s and Gildong’s groups are similar to that from Joonho’s group, with the teacher discourse in the three texts being more or less the same. Therefore, the excerpt below, from the Joonho group’s pre-reading IC session, can adequately, if not perfectly, be used at this point to show text segments that illustrate some codes relating to the structure/sequence of IC that emerged from Cheolsoo’s and Gildong’s interview data. Second, the pre-reading IC texts for Cheolsoo’s and Gildong’s groups will be presented later in a section where results on themes on performance on content are presented. Since the three codes from Cheolsoo’s and Gildong’s interview data pertaining to overall WebQuest writing performance to be addressed here are either identical or similar to another three codes from their data pertaining to performance on content, results on these three codes could appropriately be presented in that section, along with the results on those three identical or similar codes pertaining to performance on content (see Table 6).
3 Blue: no
4 Purple: yes, I heard about it.
5 Red: i studied about that but i forgot
6 Green: hmm...I don't know those well...
7 Teacher: okay, Purple, please tell us more about these styles of art.
8 Purple: I just saw the picture in museum long time ago...
9 Teacher: All right. Then, do you think Monet and Cezanne are somehow associated with Impressionism and Post-Impressionism? If you think so, why?
10 Purple: I heard that impressionism is using a variety color and both artist's pictures are very colorful. so, I think Monet and Cezanne are associated with Impressionism.
11 Teacher: Okay. If Monet and Cezanne are associated with Impressionism and Post-Impressionism, knowing about these particular art movements will likely facilitate your performance of the task for this WebQuest lesson, i.e., to write an essay comparing and contrasting the work of Monet and Cezanne. You will soon read materials about Monet and Cezanne. While reading the materials, try to get to know the similarities and differences between Impressionism and Post-Impressionism; this will likely help you find similarities and differences between Monet’s and Cezanne’s work.
12 Blue: okay
13 Teacher: Remember that knowing about Impressionism and Post-Impressionism is only one way to help you perform the task. Thus, as you read, you would also need to attend to other parts of the materials that would help you identify similarities and differences between Monet’s and Cezanne’s work. Now, read silently (and quickly) the two sets of materials on Monet and Cezanne for 20 minutes.

This excerpt nicely exhibits text segments that illustrate the pre-reading IC’s roles that Joonho and the other two participants, Cheolsoo and Gildong, reported during their interviews: the pre-reading IC’s provision of a framework/focus/direction for subsequent reading (Joonho and Cheolsoo), its provision of opportunities to know the key concepts contained in the readings (Gildong), and its cueing of important content to attend to during subsequent reading and later writing (Gildong). In the beginning of this pre-reading IC session, the teacher provides students with opportunities to know the key concepts contained in the readings by asking, “Has any one of you ever heard of the terms ‘Impressionism’ and ‘Post-Impressionism’?” (see turn 1). Then, after assessing students’ background knowledge on these two concepts over several discourse turns and connecting the concepts to Monet and Cezanne, he provides a framework/focus/direction...
for subsequent reading by saying, “While reading the materials, try to get to know the similarities and differences between Impressionism and Post-Impressionism” (turn 11). This also serves to cue important content to attend to during subsequent reading and later writing.35

As we have seen, this excerpt clearly shows text segments that corroborate what all the three interview participants reported regarding the pre-reading IC’s roles as they pertained to the structure/sequence of IC. What remains now is another code that emerged from Joonho’s interview data that constituted the theme of the structure/sequence of IC, along with the codes just discussed, namely, “gaining a deeper understanding of content through post-reading IC, following the pre-reading IC and reading” (see Table 9). Since the entire post-reading IC session in which Joonho participated manifests this category (i.e., code), the post-reading IC discussion text for Joonho’s group would need to be presented in its entirety here. However, given that a focus was given to the structural and sequential aspect of IC when the theme was derived from the codes and that a presentation of the 25-minute post-reading IC discussion text in its entirety here does not seem appropriate, I will only present some text segments that show how the post-reading IC for Joonho’s group continued from the sequence of the pre-reading IC and reading and how it proceeded thereafter. The excerpt below is taken from the post-reading IC discussion session for Joonho’s group.

Excerpt 2:

1 Teacher: Okay, can someone tell me what the two sets of readings are about?
2 Blue: It’s about 2 artists’ life and their style of art.
3 Blue: art

35 In this study, all pre-reading IC sessions employed the concept-text-application or CTA approach advanced by Wong and Au (1985). This will be taken up for discussion in Chapter 5.
Teacher: All right. As we have said, the authors of the readings address characteristics of Monet’s and Cezanne’s work. ... This said, can you tell me some of the characteristics of Monet’s work that you could perceive while reading the materials? Feel free to refer to the Monet readings to answer this question.

Red: he didn't use line for picture

Teacher: Okay. Any other thought?

Yellow: monet was first man to use colors naturally

Teacher: Okay, purple, what kind of nature did he paint?

Yellow: we can say yes. because he seems to express 'the nature' as a nature

Purple: He painted about nature

Red: he used patch to draw

Teacher: okay, purple, what kind of nature did he paint?

Purple: I think, he had not pursue realism.

Red: outdoor landscape is suitable for improving his own painting style

Purple: because he draw nature, but his paintings are abstract.

Teacher: Yes, Yellow. Since landscape paintings represent the real world, not the idealized world of history, mythology, and classical subjects of Classicism and Romanticism, we could say that they reflect Realism. Landscapes are real-life subject matter. Then, can you tell me where in the Monet readings we can find evidence that Monet’s paintings, influenced by Courbet’s Realism, represented the real world?

Green: He distorted the figure of nature so I don't think he pursued realism

Yellow: i guess the parts refered "he liked to draw in outdoors"

Teacher: what part of the reading is that from, yellow?

Yellow: maybe somewhere middle in the materials, paragraph 5?

Teacher: … Then, how about Cezanne? Did he also use real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings?

Yellow: T_T didn't catch anything
27 Purple: Cezanne represented the real world by distorting the objects
28 Green: Unlike Monet, Cezzane painted not only landscapes but still life and also he painted portraiture.
29 Red: no because he drew too much line on his painting
30 Teacher: Yes. How do you know that?
31 Green: I saw the painting in the hyperlinked reading which .. Maybe in paragraph 5 in Cezanne.
32 Teacher: Okay. As stated in the 5th paragraph in “Artist Profile: Paul Cezanne,” “[Pissarro] urged Cezanne to paint landscapes from nature, to discipline himself by studying the landscapes in front of him. Cezanne’s undisciplined style became more steadied under Pissarro’s influence.” This suggests that like Monet, Cezanne painted landscapes (i.e., real-life subject matter) outdoors, from nature. Also, from the first paragraph of the hyperlinked Wikipedia material entitled “Post-Impressionism,” we can see that like Monet, who was an Impressionist, Cezanne, as a Post-Impressionist, also used real-life subject matter in his paintings (see the phrase “they (i.e., Post-Impressionists) continued using vivid colors … and real-life subject matter”).

While the entire text in the excerpt (i.e., the macro-level, large text segment which constitutes the entire excerpt) illustrates the category “gaining a deeper understanding of content through post-reading IC, following the pre-reading IC and reading,” the micro-level text segments that are bold-faced particularly well represent the category. First, in the very beginning of the post-reading IC, the teacher asks students about the main ideas of the WebQuest readings that they have completed (turn 1) for the purpose of bringing up and initiating discussion on the theme of characteristics of Monet’s and Cezanne’s work (turn 6). Once the theme has been established, the remainder of the post-reading IC discussion centers on that particular theme (turns 6 through 32, the last turn). As can be seen from all the bold-faced segments after turn 6, the teacher, together with the students, delves deeper and deeper into key content from the readings, with a focus placed on the theme.

In order for the reader to better understand why all the bold-faced text segments in the excerpt represent the category of “gaining a deeper understanding of content through
post-reading IC, following the pre-reading IC and reading” in particular and the larger theme of the structure/sequence of IC, a brief account of the context seems necessary. A primary key to successfully identifying the characteristics of the two artists’ work from the four readings with hyperlinked reading materials was to understand the two artists’ work in terms of Impressionism vs. Post-Impressionism on the one hand and in relation to Realism on the other; the latter is because Realism influenced both the Impressionist Monet and the Post-Impressionist Cezanne. This was the reason why the concepts of Impressionism and Post-Impressionism were introduced in the first place during the pre-reading IC. Given this, this post-reading IC discussion is in fact addressing Impressionism and Post-Impressionism as they relate to the established theme, though implicitly throughout a majority of the session. To put it in another way, the post-reading IC in fact involves a deeper exploration of the two concepts introduced during the pre-reading IC in relation to the newly established theme of the IC discussion, and hence, it represents an extension of the pre-reading IC on the one hand and involves an exploration of the established theme on the other. In order to facilitate students’ identification of the characteristics of the two artists’ work from the readings where none about them were addressed in a straightforward manner, the teacher, together with students, is now delving into the two concepts introduced during the pre-reading IC, i.e., Impressionism and Post-Impressionism, as a successor of Cubert’s Realism. In view of all these, the bold-faced segments in the excerpt, taken together, can be said to represent the category of gaining a deeper understanding of content (around an established theme) through post-reading IC, following the pre-reading IC and reading. Particularly, when this post-reading IC is considered in conjunction with the pre-reading IC, during which the concepts of
Impressionism and Post-Impressionism were introduced, it may well be said that the bold-faced segments represent the larger theme of the structure/sequence of IC.

*Interactive participation.* The excerpt below, taken from the online IC discussion session in which Joonho participated, illustrates interactive, multi-way exchanges of understandings of reading content/information during IC, which he reported had assisted him in his overall WebQuest writing performance.

**Excerpt 3:**

1 *Teacher:* … This said, can you tell me some of the characteristics of Monet’s work that you could perceive while reading the materials? Feel free to refer to the Monet readings to answer this question.
2 Red: he didn’t use line for picture
3 *Teacher:* Okay. Any other thought?
4 Yellow: monet was first man to use colors naturally
5 Purple: He painted about nature
6 Red: he used patch to draw
7 *Teacher:* okay, purple, what kind of nature did he paint?
8 Blue: Most of his works are drawned outdoors.
9 Green: Monet wants to present changing figures as time goes to viewers naturally
10 Purple: soft color. like sky blue and yellow
11 Blue: water illies?
12 *Teacher:* Okay, he painted nature. Then, do you think landscape paintings represent the real world or an idealized world? Or something else?
13 Green: so he didn’t use lines and he used rounded pitch of outdoor's scenes
14 Yellow: i think landscape paintings express a real world.
15 Blue: I guess he tried to represent the real world.
16 *Teacher:* Yes. Then, could we say that Monet’s orientation toward painting landscapes outdoors has something to do with Realism? If so, why?
17 *Teacher:* Feel free to contribute any thought that you have; there is no absolutely right or wrong answer.
18 Green: hmm.. question is difficult little bit
19 Yellow: we can say yes. because he seems to express 'the nature' as a nature
20 Purple: I think, he had not pursue realism.
21 Red: outdoor landscape is suitable for improving his own painting style
22 Purple: because he draw nature, but his painting's are abstract.
23 *Teacher:* Yes, Yellow. Since landscape paintings represent the real world, not the idealized world of history, mythology, and classical subjects of Classicism and Romanticism, we could say that they reflect Realism. …
The entire text shown above manifests the category “interactive, multi-way exchanges of understandings of reading content/information.” As can be seen from the text, all of the five students are exchanging with the teacher and with one another their understandings about the characteristics of Monet’s work, based upon the content of the WebQuest materials that they have read. Although it appears on the surface that each student is engaged in exchanging his or her understandings or thoughts about the reading content only with the teacher, all students are in fact exchanging their contributions with one another, though implicitly. This is a point that Joonho addressed while commenting on IC’s aspect/feature of interactive, multi-way exchanges of understandings of reading content during the interview: “Since it was primarily students who exchanged views on the reading information, I benefited primarily from students’ contributions of their thoughts” (see a previous subsection entitled “Interactive participation” under “Case 1: Joonho”). As he additionally noted during the interview, the teacher in this excerpt is indeed “play[ing] a role by providing a general direction for the exchanges” (see the same subsection) while at the same time interacting with students, both as a group (turns 3, 12, 16, and 17) and as individuals (turns 7 and 23).

Below is an excerpt taken from the IC discussion session for Cheolsoo’s group, which exhibits text segments that illustrate the teacher’s provisions of summaries in response to multiple students’ contributions.

**Excerpt 4:**

1 Teacher: … Then, how about Cezanne? Did he also use real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings?
2 Red: No, his paintings were different from Monet’s paintings.
3 Purple: he was urged to paint landscapes from nature
4 Teacher: Okay, but did he also use real life subject matter in his paintings?
5 Teacher: Yes, purple. How do you know that?
6 Blue: He drew real-life subject but he chaged the forms and structures
7 Teacher: I mean, tell me where in the readings it is suggested that Cezanne also used real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings. Refer to all the materials that you have read, including the Cezanne readings and the hyperlinked readings.
8 Purple: because at the fifth paragraph
9 Purple: the writer talks about pisarro and he influenced Cezanne in many things
10 Teacher: Yes, in other words, as stated in the 5th paragraph in “Artist Profile: Paul Cezanne,” “[Pissarro] urged Cezanne to paint landscapes from nature, to discipline himself by studying the landscapes in front of him. Cezanne’s undisciplined style became more steadied under Pissarro’s influence.” This suggests that like Monet, Cezanne painted landscapes (i.e., real-life subject matter) outdoors, from nature. Also, from the first paragraph of the hyperlinked Wikipedia material entitled “Post-Impressionism,” we can see that like Monet, who was an Impressionist, Cezanne, as a Post-Impressionist, also used real-life subject matter in his paintings (see the phrase “they (i.e., Post-Impressionists) continued using vivid colors … and real-life subject matter”). To put it differently, like Monet, Cezanne used common, ordinary subject matter (see the second paragraph of the hyperlinked Wikipedia material entitled “Impressionism,” where Impressionist painting characteristics are described).
Purple: and that was one of them.

11 Teacher: Okay. In conclusion, we could state that influenced by realism, both Monet’s and Cezanne’s work represented the real world and were far from Classism and Romanticism. So far we have explored pertinent parts of the readings that support this statement.

12 Teacher: Purple previously mentioned colors and lights. How about colors in Monet’s and Cezanne’s work? What could we say about the characteristics of the colors that the two artists used? …
13 Blue: Cezanne and Monet both use bold, and life-like color
14 Purple: i’m not sure but.. what i know is that they both used colors, but the difference was that Cezanne paintings were more structured.
15 Teacher: Yes, as Blue said, both Monet’s and Cezanne’s work are characterized by vibrant, lifelike (or vivid) colors. In other words, they both used vibrant, lifelike colors in their paintings (see “Paul Cezanne: Father of Modern Art,” paragraphs 4 (while using the … lifelike colors of the Impressionists) & 7 (like the Impressionists, Cezanne … through using vibrant colors).

The bold-faced segments manifest the categories “teacher’s provision of summaries in response to multiple students’ contributions” and “multiple, timely occurrences of provision of such summaries.” First, in response to the teacher’s question “Then, how
about Cezanne? Did he also use real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings?” (turn 1), Red and Purple contribute their thoughts (turns 2 and 3). Following this, when the teacher asks a probing question directed at Purple, “How do you know that? (turn 5), both Blue (turn 6) and Purple (turns 8 and 9) contribute their thoughts. This leads the teacher to take up the students’ contributions (especially, Purple’s contribution on this occasion) and provide a summary of the group’s discussion up to that point (turn 10). Then, after a few further exchanges of turns on Monet’s and Cezanne’s work in relation to Realism, the teacher provides a final concluding summary (turn 11). Finally, at the end of the group’s discussion of another characteristic of the two artists’ work, i.e., use of colors, the teacher also provides his summary (turn 15). Here, in response to Blue’s and Purple’s contributions (turns 13 and 14), the teacher provides a summary of the artists’ work in terms of use of colors. One thing that merits attention is that while the teacher took up on the response from one of the multiple students who had contributed their thoughts in providing his summaries (on both of the above-described occasions), it does not necessarily mean that he was providing his summaries in response to only that particular student’s contribution; the summaries are in fact provided in response to the multiple students’ contributions. As we have seen, these text segments clearly corroborate what Cheolsoo reported during the interview: “During the IC discussion, the teacher provided summaries of our discussions. … He did this whenever multiple students have completed contributing their thoughts on a topic.” (see a previous subsection entitled “Interactive participation” under “Case 2: Cheolsoo”). The text
segments also manifest interactive participation at large, especially on the part of the teacher.

Another excerpt below, from the IC discussion session for Gilding’s group, contains text segments that illustrate teacher questioning in response to student contributions.

Excerpt 5:

1 Teacher: … Then, how about Cezanne? Did he also use real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings?
2 Yellow: yes
3 Teacher: How do you know that?
4 Teacher: I mean, tell me where in the readings it is suggested that Cezanne also used real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings. Refer to all the materials that you have read, including the Cezanne readings and the hyperlinked readings.
5 Red: yes his paintings also represented the real world but he liked to distort the structure of the real world
6 Red: 5th paragraph?
7 Red: and 8th maybe

8 Teacher: Okay, Red mentioned that Cezanne liked to distort the images in this paintings.
9 Teacher: What makes us say so?
10 Red: he painting the one objects in many diverse perspective
11 Teacher: Yes. Where in the readings is this mentioned?
12 Blue: 8th?
13 Teacher: Okay, Blue. The 8th paragraph of which reading? What is the name of the reading?
14 Blue: atist profile
15 Teacher: Okay, in other words, from the reading "Artist Profile: Paul Cezanne" we can see this point. Specifically in paragraph 10.
16 Teacher: Then, did Monet’s paintings primarily depict three-dimensional space? Or flatness? Or something else?

Here, the teacher asks a probing question “How do you know that” (turn 3) in response to Yellow’s contribution (turn 2). Then, later, the teacher takes up on Red’s previous contribution of his or her understanding about Cezanne’s preferred way of
expressing images in his paintings (turn 8) and asks another probing question, “What makes us say so?” (turn 9). Thereafter, he poses increasingly more specific probing questions in response to student contributions: “Where in the readings is this mentioned?” (turn 11) and “The 8th paragraph of which reading? What is the name of the reading?” (turn 13). The last question (turn 16) can also be viewed as a teacher question in response to student contributions because it evolved from, and actually responds to, students’ previous contributions. All of these clearly manifest the category of teacher questioning in response to student contributions in particular and the larger theme of interactive participation.

The last excerpt on interactive participation is taken from the IC session for Gildong’s group.

Excerpt 6:

1 Teacher: Okay, Yellow mentions "landscape". Do you think landscape paintings represent the real world or an idealized world? Or something else?
2 Blue: Monet's style is soft color and impressive, but I don't remember well..
3 Red: Before Impressionism, painting a landscape means only paiting of real world.
4 Yellow: in early work of monet he try to describe as real as possible
5 Green: landscape is real word we see now. so he just express what he feel and see
6 Blue: He represented abstract things.
7 Red: but Monet like Impressionsit want to paint landscapes in his own way
8 Yellow: but later in his work, it show not the real world, the way artist see the world i think
9 Teacher: Green and Yellow both said, "Real world". Then, could we say that Monet’s orientation toward painting landscapes outdoors has something to do with Realism? If so, why?
10 Red: no monet's works has nothing to do with realism because
11 Teacher: Any other thought? I want everyone’s participation. Do not think that there is an absolutely right or wrong answer. Just feel free to express any thought that you have about the characteristics of Monet’s work, based upon the readings.
12 Yellow: no, i think Idealized world or real world mean painted idealized color with perfect shade, but monets work is somewhat different from reality, like shape , line
13 Red: after he saw a realworld, he created his own world again
14 Green: in my way, landscape is real because i can see... but in artist standpoint.. it can be idealized world
15 Red: his works were opposite style to realism i think
The entire text in this excerpt manifests the category “students’ active participation and interaction,” which emerged from Gildong’s interview data. Students’ active participation in the IC discussion is particularly well manifested in all the four students’ contributions of their thoughts in response to the teacher’s first question concerning the kind of world represented by landscape paintings (see turns 2 through 8). Here, all the four students in the group participated, and they contributed as many as seven consecutive discourse turns. Similarly, all these four students also contributed their thoughts in response to the teacher’s question “Any other thought?” (turn 11), and in this case, the number of consecutive student turns was six (turns 12 through 17).

This student participation, as can be seen from the excerpted text, is not one-way; it is interactive. For example, the four students actively contributed the initial seven turns in response to a question from the teacher, and this led the teacher to take up on Green’s and Yellow’s contributions and ask another question, based upon their contributions (see turn 9). This in turn generated further interaction between the students and the teacher (turns 10 through 18). Additionally, students, though implicitly, also interacted with one another, as noted by Joonho (see Joonho’s comment under Excerpt 3). In short, the entire text in the excerpt well manifests students’ active participation and interaction and thus interactive participation.

*Thematic focus.* The entire texts from the three groups’ post-reading IC discussion sessions reveal that the discussions are thematically focused throughout the sessions. In this section, I will only present some text segments from the three IC sessions that
seemingly best illustrate this theme and its key constituent categories. The excerpt below, taken from the main (i.e., post-reading) IC discussion session in which Joonho participated, illustrates how the teacher introduces a theme and how he initiates a thematically focused IC discussion for Joonho’s group.

**Excerpt 7:**

**Teacher**: All right. As we have said, the authors of the readings address characteristics of Monet’s and Cezanne’s work. Since the readings are not exclusively about that topic and since the authors generally do not address the characteristics of the two artists’ works in a straightforward manner, it may be difficult for you to identify and describe such characteristics. This said, can you tell me some of the characteristics of Monet’s work that you could perceive while reading the materials? Feel free to refer to the Monet readings to answer this question.

Before this turn, the teacher was establishing the main ideas and important details of the text with the students, capitalizing on opportunities to initiate discussion on a theme that he had in mind. After multiple students have contributed their thoughts, many of which were related to the theme, the teacher immediately introduces the theme: “As we have said, the authors of the readings address characteristics of Monet’s and Cezanne’s work [italics added].” Following this, the teacher initiates a thematically focused IC discussion by asking a general question, “This said, can you tell me some of the characteristics of Monet’s work that you could perceive while reading the materials?” Thereafter, the teacher leads the IC discussion, focusing squarely on the particular theme of characteristics of Monet’s and Cezanne’s work. Since this pertains to “consistent discussion on a theme,” a category that emerged from Cheolsoo’s interview data, I have presented below an excerpt from the IC session for Cheolsoo’s group.

**Excerpt 8:**

1 **Teacher**: All right. As Purple said, the authors of the readings address characteristics of Monet’s and Cezanne’s work. … This said, can you tell me some of the
characteristics of Monet’s work that you could perceive while reading the materials? Feel free to refer to the Monet readings to answer this question.

2 Teacher: Then, how about Cezanne? Did he also use real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings?

3 Teacher: Purple previously mentioned colors and lights. How about colors in Monet’s and Cezanne’s work? What could we say about the characteristics of the colors that the two artists used?

4 Teacher: Blue and Purple both mentioned Cezanne's structure. How is this different from Monet's style?

As seen here, the teacher consistently leads the discussion with a focus on the established theme of characteristics of Monet’s and Cezanne’s work. He begins with a general question about characteristics of Monet’s work (#1), and this leads to the group’s discussion of use of real-life subject matter in Monet’s paintings. Then, the teacher extends the discussion further to Cezanne and asks the group whether Cezanne also used real-life subject matter in his paintings (#2). After this, he poses a question about the characteristics of colors used by the two artists (#3). Finally, he initiates a discussion of the structural aspects of the two artists’ paintings (#4). What is shown in this excerpt is consistent with, and hence corroborates, what Cheolsoo reported during the interview: “The teacher led the discussion in such a way that we could discuss on a certain theme consistently.”
The excerpt below, which includes part of what was presented in Excerpt 6, reveals
one of the two categories that emerged from Gildong’s interview data which constituted
the larger theme of thematic focus, namely, in-depth discussion on a theme (see Table 9).

Excerpt 9:

1 Teacher: Green and Yellow both said, "Real world". Then, could we say that Monet’s
orientation toward painting landscapes outdoors has something to do with Realism? If so,
why?
2 Red: no monet's works has nothing to do with realism because
3 Teacher: Any other thought? I want everyone’s participation. Do not think that there
is an absolutely right or wrong answer. Just feel free to express any thought that you
have about the characteristics of Monet’s work, based upon the readings.
4 Yellow: no, i think idealized world or real world mean painted idealized color with
perfect shade, but monets work is somewhat different from reality. like shape , line
5 Red: after he saw a realworld, he created his own world again
6 Green: in my way, landscape is real because i can see... but in artist standpoint.. it can
be idealized world
7 Red: his works were opposite style to realism i think
8 Yellow: not real world i think
9 Blue: it's real world
10 Teacher: Yes, Blue. Since landscapes paintings represent the real world, not the
idealized world of history, mythology, and classical subjects of classicism and
Romanticism, we could say that they reflect Realism. Landscapes are real-life subject
matter. Then, can you tell me where in the Monet readings we can find evidence that
Monet’s paintings, influenced by Courbet’s Realism, represented the real world?
11 Yellow: 4th
12 Yellow: i miss counted 5th
13 Teacher: Yes, from the 5th paragraph of "Artist Profile: Claude Monet" we can see
that Monet’s work, influenced by Realism, represented the real world with landscapes
and was far from Classicism and Romanticism, which were concerned with the idealized
world of history, mythology, and classical subjects. Then, how about Cezanne? Did he
also use real-life subject matter (for example, landscapes) in his paintings and therefore
his paintings represented the real world like Monet’s paintings?
14 Yellow: yes
15 Teacher: How do you know that?

Here, we can see how deeply the teacher and students are engaged in discussing on
the set theme for the IC, i.e., characteristics of Monet’s and Cezanne’s work. Before this,
in response to Yellow’s comment that Monet used landscapes for his paintings, the
teacher asked whether landscape paintings represented the real world, idealized world, or something else, and in response, Green and Yellow said to the effect that they represented the real world. Now, the teacher is attempting to connect the notion of the real world to Realism -- an art movement mentioned in the readings which influenced Monet and Cezanne -- and asks if one could say that Monet’s orientation toward painting landscapes outdoors has something to do with Realism (turn 1). In response to this question, all students contribute their thoughts, bringing about a hot debate; some argue for the existence of a close association between Monet’s orientation toward painting landscapes outdoors and Realism or the real world, and others argue against it (turns 2 and 4 through 9).

When all students seemingly have finished contributing their thoughts on this issue, the teacher takes up on Blue’s response and states that landscape paintings reflect Realism while at the same time giving the reason for it (turn 10). The teacher, however, does not end the discussion of this particular issue at this point. He asks the students a further, probing question: “Then, can you tell me where in the Monet readings we can find evidence that Monet’s paintings, influenced by Courbet’s Realism, represented the real world?” (turn 10). Yellow indicates the location of the source of evidence from the Monet readings (turn 12). Then, taking up on this response from Yellow, the teacher provides evidence from a Monet reading that supports the proposition contained in his preceding question (turn 13). Immediately following this, the teacher extends the discussion further to Cezanne and attempts to explore the same issue in relation to Cezanne. He asks, “Then, how about Cezanne? Did he also use real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real
world like Monet’s paintings?” (turn 13). This is followed by a student’s response (turn 14) and then by the teacher’s initiation of another probing question pertaining to Cezanne and use of real-life subject matter (“How do you know that”— turn 15).

This exploration of the excerpted text above reveals that the students, together with the teacher, are indeed engaged in an in-depth discussion on the established theme. As we have seen, the teacher was using a variety of carefully planned discourse strategies to engage the students in a deep discussion. And the deep discussion was focused on the theme.

Finally, there remains another category from Gildong’s interview data that would need to be addressed under the current theme of thematic focus, i.e., questioning and answering on a theme (see Table 6). In fact, for Gildong’s group, as well as the other two groups, the entire post-reading IC discussion text following the teacher’s introduction of the theme is characterized by questioning and answering on the established theme. Since “questioning and answering on a theme” also emerged from Gildong’s interview data as a category constituting the theme of thematic focus for the area of performance on content, I will provide an excerpt from his group’s IC discussion when presenting the results for this same theme in the ensuing section, which addresses themes on performance on content.

Themes on Performance on Content

As noted earlier, the codes that led to the themes of the structure/sequence of IC and thematic focus for performance on content are similar to those that led to the same themes for overall WebQuest writing performance because the interview participants, as they all confirmed, were focusing on the content component of overall WebQuest writing
performance when they were reporting on the aspects/features of IC that had assisted
tem them in their overall WebQuest writing performance and consequently reported more or
less the same things for performance on content as for overall WebQuest writing
performance (see the section entitled “Performance on Content” under “Cross-case
Analysis” and Footnote 6). It was largely due to this overlap in codes for overall
WebQuest writing performance and performance on content that presentation of excerpts
from the pre-reading IC sessions for Cheolsoo’s and Gildong’s groups was deferred until
this section instead of being presented in an earlier section where results for the theme of
the structure/sequence of IC for overall WebQuest writing performance were presented
(see Footnote 3). Also, as indicated in the footnote, excerpts from the pre-reading IC
sessions for Cheolsoo’s and Gildong’s groups were not presented in that section partly
because the excerpt from the Joonho group’s pre-reading IC session presented there could
adequately, if not perfectly, be used to show text segments illustrating the three codes on
IC’s structure/sequence that emerged from Cheolsoo’s and Gildong’s interview data for
the reason that the pre-reading IC text from Joonho’s group was more or less similar to
those from Cheolsoo’s and Gildong’s groups as a result of the teacher’s faithful use of a
script in conducting lessons for all IC groups.

Thus, this section, the pre-reading IC texts from Cheolsoo’s and Gildong’s groups
will be presented under the subheading “The structure/sequence of IC” to show text
segments that illustrate the categories “the pre-reading IC’s provision of a direction and
focus for subsequent reading” (Cheolsoo) and “the pre-reading IC’s provision of a key
topic” (Gildong). Under the same subheading, part of the pre-reading IC text from
Joonho’s group and part of the post-reading IC text from Gildong’s group will also be
presented to show text segments illustrating the categories “IC sequence/structure, which served to help the participant to discern content/information necessary to perform the writing task.” (Joonho) and “gaining a deeper understanding of content through post-reading IC” (Gildong).

As for the theme “thematic focus,” two excerpts from the main (i.e., post-reading) IC discussion sessions for Cheolsoo’s and Gildong’s groups will be presented in order to reveal the categories, “teacher’s provision of summaries related to the theme” (Cheolsoo) and “questioning and answering on a theme” (Gildong). Since corroborative analysis results on all the other categories that constitute the theme of thematic focus were already presented under pertinent excerpts in an earlier section on the same theme for overall WebQuest writing performance, in this section, I will present results on only these two remaining categories under pertinent excerpts. This is also due to the existence of similar sets of codes for overall WebQuest writing performance and performance on content, stemming from the interview participants’ focusing on the content component of overall WebQuest writing performance when reporting on the aspects/features of IC that had assisted them in their overall WebQuest writing performance. In other words, given these similar sets of codes, I am avoiding wasting paper space by presenting the same excerpts repeatedly.

The structure/sequence of IC. The excerpt below, which represents part of the pre-reading IC text for Joonho’s group, includes a text segment that illustrates a category from Joonho’s interview data that constituted the theme of the structure/sequence of IC, namely, “IC sequence/structure, which served to help the participant to discern
content/information necessary to perform the writing task” (see Table 9 for the category and Excerpt 1 for the entire pre-reading IC text)

Excerpt 10:

Teacher: The texts that you will be reading in this WebQuest lesson are about the world-famous artists Claude Monet and Paul Cezanne. Has any one of you ever heard of the terms “Impressionism” and “Post-Impressionism”?

Teacher: Okay. If Monet and Cezanne are associated with Impressionism and Post-Impressionism, knowing about these particular art movements will likely facilitate your performance of the task for this WebQuest lesson, i.e., to write an essay comparing and contrasting the work of Monet and Cezanne. You will soon read materials about Monet and Cezanne. While reading the materials, try to get to know the similarities and differences between Impressionism and Post-Impressionism; this will likely help you find similarities and differences between Monet’s and Cezanne’s work.

The bold-faced segment well manifests what Joonho reported during the interview, which led to the category “IC sequence/structure, which served to help the participant to discern content/information necessary to perform the writing task”: 

Given the situation in which I was supposed to write a content-focused essay, that is, a compare-and-contrast essay, IC’s structure helped me to discern and acquire necessary information for my writing. … The readings were about Monet and Cezanne. When the teacher was giving us 20 minutes to read the materials [during the pre-reading IC], he told us to read with a focus on a certain thing related to the two artists. This provided the greatest help for my essay writing.

Together with this, the way in which the post-reading IC session for Joonho’s group proceeded completely reflects the category and the larger theme “the structure/sequence of IC.” In an earlier section where the results for this same theme for overall WebQuest writing performance were presented under an excerpt from Joonho’s post-reading IC session, we saw that the post-reading IC discussion for Joonho’s group at once centered
on the theme of characteristics of Monet’s and Cezanne’s work and involved a deeper exploration of the two concepts introduced during the pre-reading IC, i.e., Impressionism and Post-impressionism (see the results presented under Excerpt 2). Given that understanding these two concepts, as indicated in that section, is key to successfully identifying the characteristics of Monet’s and Cezanne’s work from the readings, it may well be said that this structure/sequence of IC serves to help students to discern content/information necessary to perform the writing task at hand, i.e., writing an essay comparing and contrasting the work of the two artists. Then, in short, the bold-faced segment above, together with the entire post-reading IC discussion text for Joonho’s group or, alternatively, with the selected text presented in Excerpt 2, completely manifests the category “IC sequence/structure, which served to help the participant to discern content/information necessary to perform the writing task” and the larger theme “the structure/sequence of IC.”

As with Joonho, Cheolsoo also reported during the interview that the pre-reading IC’s provision of a direction and focus for subsequent reading had assisted him in his performance on content. The excerpt below represents the entire pre-reading IC text for Cheolsoo’s group.

Excerpt 11:

Teacher: The texts that you will be reading in this WebQuest lesson are about the world-famous artists Claude Monet and Paul Cezanne. Has any one of you ever heard of the terms “Impressionism” and “Post-Impressionism”?
Blue: not really
Yellow: no
Red: no
Purple: Yes, i’ve heard about them, but i dont remember
Teacher: All right. Then, do you think Monet and Cezanne are somehow associated with Impressionism and Post-Impressionism? If you think so, why?
Yellow: i have no idea
Purple: I don't know. Because I've never heard about them.
Blue: Yes because just now I read first sentence of the articles
Red: I don't know well.
Teacher: Okay. If Monet and Cezanne are associated with Impressionism and Post-Impressionism, knowing about these particular art movements will likely facilitate your performance of the task for this WebQuest lesson, i.e., to write an essay comparing and contrasting the work of Monet and Cezanne. You will soon read materials about Monet and Cezanne. **While reading the materials, try to get to know the similarities and differences between Impressionism and Post-Impressionism;** this will likely help you find similarities and differences between Monet’s and Cezanne’s work.
Teacher: Remember that knowing about Impressionism and Post-Impressionism is only one way to help you perform the task. Thus, as you read, you would also need to attend to other parts of the materials that would help you identify similarities and differences between Monet’s and Cezanne’s work. Now, read silently (and quickly) the two sets of materials on Monet and Cezanne for 20 minutes.

As seen here, the pre-reading IC text for Cheolsoo’s group exhibits a segment that well manifests the category of pre-reading IC’s provision of a direction and focus for subsequent reading. Since Cheolsoo, as with the other two participants, mostly had content in mind when he was reporting on overall WebQuest writing performance, his report on this aspect/feature of IC as a source of assistance for his performance on content coincides with his report for his overall WebQuest writing performance:

As I stated previously [in response to the previous question pertaining to overall WebQuest writing performance], during the first five minutes, the teacher provided a focus and presented a direction for our subsequent reading, and this was very helpful to my reading and writing.

To be more precise, not just the bold-faced segment but also the entire pre-reading IC text (especially, the entire teacher discourse in the text) manifests the pre-reading IC’s role of providing a direction and focus for subsequent reading.

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36 This particular segment represents a feature of the concept-text-application or CTA approach to Instructional Conversation, i.e., reading for a specific purpose related to the concepts or topic introduced. This point will be discussed in Chapter 5.
Among the categories from Gildong’s interview data that led to the theme of the structure/sequence of IC were “pre-reading IC’s provision of a key topic” and “gaining a deeper understanding of content through post-reading IC. The excerpt below, which represents the entire pre-reading IC text for Gildong’s group, contains a text segment that illustrates the first category. Since the pre-reading IC text for Gildong’s group was not presented in an earlier section where the corroborative textual analysis results for the theme of the structure/sequence of IC for overall WebQuest writing performance were presented, I have presented it in its entirety here.

**Excerpt 12:**

1 **Teacher:** The texts that you will be reading in this WebQuest lesson are about the world-famous artists Claude Monet and Paul Cezanne. Has any one of you ever heard of the terms “Impressionism” and “Post-Impressionism”?

2 Blue: yes. I heard about that.

3 Green: yes i heard about that

4 Yellow: heard of it but i don’t knwo the meaning of the term

5 Red: i heard both but dunno what they are exactly

6 **Teacher:** Okay, Green and Blue, tell us more about that.

7 Green: i know that word but donnt know exactly

8 Blue: but I don't know what they are

9 **Teacher:** All right. Then, do you think Monet and Cezanne are somehow associated with Impressionism and Post-Impressionism? If you think so, why?

10 Blue: um.... I know Monet and Cezanne but I don't know about their world. So I can't talk about their Impressiosm and Post-Impressionism.

11 Yellow: i think they are not related with impressionism, i know some picture of monet, those picture try to describe thing real not the way impressionism do,like expressing their feelings, emotion.

12 Red: yeah Monet and Cezanne are the most famous artist who made a lot of paintings about Impressonism and Post-Impressionsm.

13 Green: i think Monet is impressionism... and Cezanne is post...? actually i dont know both of them who are they... just feeling..

14 **Teacher:** Okay. If Monet and Cezanne are associated with Impressionism and Post-Impressionism, knowing about these particular art movements will likely facilitate your performance of the task for this WebQuest lesson, i.e., to write an essay comparing and contrasting the work of Monet and Cezanne. You will soon read materials about Monet and Cezanne. While reading the materials, try to get to know the similarities and differences between Impressionism and Post-Impressionism; this will likely help you find similarities and differences between Monet’s and Cezanne’s work.
15 Teacher: Remember that knowing about Impressionism and Post-Impressionism is only one way to help you perform the task. Thus, as you read, you would also need to attend to other parts of the materials that would help you identify similarities and differences between Monet’s and Cezanne’s work. Now, read silently (and quickly) the two sets of materials on Monet and Cezanne for 20 minutes.

As seen here, the teacher provides a key topic by asking, “Has any one of you ever heard of the terms ‘Impressionism’ and ‘Post-Impressionism’?” (turn 1). To use Gildong’s expression, here the teacher is providing a topic to think about prior to reading: “[T]he teacher provided a topic to think about before reading the materials” (see the subsection entitled “Performance on Content” under “Case 3: Gildong”). In his report on the pre-reading IC’s role in relation to overall WebQuest writing performance, Gildong used the term “key concepts”: “At the beginning of the IC lesson, the teacher asked us questions about the key concepts contained in the materials that we would soon read. … This provided help for my later writing, as well as reading.” Then, Gildong used the terms “key concepts” and “a key topic” interchangeably, hence, the key topic here meaning key concepts. Also, they both refer to an important topic related to readings. It follows from this that the notion of “pre-reading IC’s provision of a key topic” as a category for performance on content is in fact the same as the notion of “pre-reading IC’s provision of opportunities to know the key concepts/content contained in the readings” as a category for overall writing performance.

The point that I am attempting to address is that the teacher’s question “Has any one of you ever heard of the terms ‘Impressionism’ and ‘Post-Impressionism’?” (turn 1) manifests not only the category “pre-reading IC’s provision of a key topic” for performance on content but also the category “pre-reading IC’s provision of opportunities to know the key concepts/content contained in the readings” for overall WebQuest
writing performance. Again, this shows that Gildong was focusing primarily on content when he was responding to the researcher’s questions on overall WebQuest writing performance, as he confirmed during the interview and as was the case with the other two participants.

Also, we can see from the excerpt that there is a text segment that reflects another category from Gildong’s interview data that constituted the theme of the structure/sequence of IC for overall WebQuest writing performance, i.e., pre-reading IC’s cueing of important content to attend to during subsequent reading and later writing. As seen in turn 14, the teacher cues important content to attend to during subsequent reading and later writing by saying, “While reading the materials, try to get to know the similarities and differences between Impressionism and Post-Impressionism.” While this same result was presented earlier using an excerpt from the pre-reading IC session for Joonho’s group (see the presentation of results under Excerpt 1), I have presented it here so that the reader can see that the category is manifested in the Gildong group’s pre-reading IC text.

The key topic (i.e., Impressionism and Post-Impressionism) introduced during the pre-reading IC for Gildong’s group is explored deeply around a theme during the group’s post-reading IC session, thus enabling students “to gain a deeper understanding of content through post-reading IC,” another category from Gildong’s interview data that constituted the theme of the structure/sequence of IC, together with the category of pre-reading IC’s provision of a key topic. While the entire post-reading IC session in which Gildong participated manifests this category, I will only present text segments that show how the post-reading IC for Gildong’s group continued from the sequence of the pre-
reading IC and reading and how it proceeded thereafter. Since the teacher faithfully followed a script in conducting IC lessons across all IC groups, a selected segment from the Gildong group’s post-reading IC text that well illustrates this category for performance on content would be more or less the same as the one from Joonho group’s post-reading IC text that well illustrates the same category for overall WebQuest writing performance as shown in Excerpt 2. To avoid a large overlap, however, some key parts have been extracted.

Excerpt 13:

1 Teacher: Okay, can someone tell me what the two sets of readings are about?
2 Yellow: they both discuss about cezanne and monet’s artistic style and their life, and giving picture as example.
3 Teacher: All right. The authors of the readings address characteristics of Monet’s and Cezanne’s work. … This said, can you tell me some of the characteristics of Monet’s work that you could perceive while reading the materials? Feel free to refer to the Monet readings to answer this question.
4 Teacher: … Then, how about Cezanne? Did he also use real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings?
5 Teacher: How do you know that?
6 Teacher: I mean, tell me where in the readings it is suggested that Cezanne also used real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings. Refer to all the materials that you have read, including the Cezanne readings and the hyperlinked readings.
7 Red: yes his paintings also represented the real world but he liked to distort the structure of the real world
8 Red: 5th paragraph?
9 Red: and 8th maybe
10 Teacher: As stated in the 5th paragraph in “Artist Profile: Paul Cezanne,” “[Pissarro] urged Cezanne to paint landscapes from nature, to discipline himself by studying the landscapes in front of him. Cezanne’s undisciplined style became more steadied under Pissarro’s influence.” This suggests that like Monet, Cezanne painted landscapes (i.e.,
real-life subject matter) outdoors, from nature. Also, from the first paragraph of the hyperlinked Wikipedia material entitled “Post-Impressionism,” we can see that like Monet, who was an Impressionist, Cezanne, as a Post-Impressionist, also used real-life subject matter in his paintings (see the phrase “they (i.e., Post-Impressionists) continued using vivid colors … and real-life subject matter”).

As seen here, in the very beginning of the post-reading IC, the teacher asks students about the main ideas of the readings that they have just completed (turn 1) with the purpose of bringing up and initiating discussion on the theme of characteristics of Monet’s and Cezanne’s work (turn 3). Once the theme has been established, the remainder of the post-reading IC discussion centers on that particular theme (turns 3 through 10). As can be seen from all the bold-faced segments after turn 3, the teacher, together with the students, delves deeper and deeper into key content from the readings, with a focus placed on the theme.

As was the case with the post-reading IC for Joonho’s group, this post-reading IC involves a deeper exploration of the key topic introduced during the pre-reading IC (i.e., Impressionism and Postimpressionism) in relation to a theme (i.e., the theme of characteristics of Monet’s and Cezanne’s work), and hence, it represents an extension of the pre-reading IC on the one hand and involves an exploration of a newly established theme on the other (see an explanation of this point under Excerpt 2). In order to facilitate students’ identification of the characteristics of the two artists’ work from the readings where none about them were addressed in a straightforward manner, the teacher, together with students, is now delving into Impressionism and Post-Impressionism, the key topic introduced during the pre-reading IC, around a theme. In view of these, the bold-faced segments in the excerpt, taken together, can be said to represent the category of gaining a deeper understanding of content through post-reading IC, following the pre-
reading IC and reading. Particularly, when this post-reading IC is considered in conjunction with the pre-reading IC, during which the topic of Impressionism and Post-Impressionism was introduced, it may well be said that the bold-faced segments represent the larger theme of the structure/sequence of IC.

**Thematic focus.** Since a number of excerpts that illustrate the theme of thematic focus and its constituent categories were already presented in an earlier section where corroborative textual analysis results on that particular theme for overall WebQuest writing performance were presented, in this section, two excerpts which were not presented there and were deferred until this point will be presented. This is, as indicated earlier, due to the existence of similar sets of codes for overall WebQuest writing performance and performance on content, stemming from the fact that the interview participant were focusing on content when reporting on the aspects/features of IC that had assisted them in their overall WebQuest writing performance.

The excerpt below, from the main IC discussion session in which Cheolsoo participated, exhibits text segments that illustrate the category “teacher’s provision of summaries related to the theme,” which emerged from his interview data.

**Excerpt 14:**

1 **Teacher:** Yes, in other words, as stated in the 5th paragraph in “Artist Profile: Paul Cezanne,” “[Pissarro] urged Cezanne to paint landscapes from nature, to discipline himself by studying the landscapes in front of him. Cezanne’s undisciplined style became more steadied under Pissarro’s influence.” This suggests that like Monet, Cezanne painted landscapes (i.e., real-life subject matter) outdoors, from nature. Also, from the first paragraph of the hyperlinked Wikipedia material entitled “Post-Impressionism,” we can see that like Monet, who was an Impressionist, Cezanne, as a Post-Impressionist, also used real-life subject matter in his paintings (see the phrase “they (i.e., Post-Impressionists) continued using vivid colors … and real-life subject matter”). To put it differently, like Monet, Cezanne used common, ordinary subject matter (see the second paragraph of the hyperlinked Wikipedia material entitled “Impressionism,” where Impressionist painting characteristics are described).
2 Teacher: Okay. In conclusion, we could state that influenced by realism, both Monet’s and Cezanne’s work represented the real world and were far from Classism and Romanticism. So far we have explored pertinent parts of the readings that support this statement.

3 Teacher: Yes, as Blue said, both Monet’s and Cezanne’s work are characterized by vibrant, lifelike (or vivid) colors. In other words, they both used vibrant, lifelike colors in their paintings (see “Paul Cezanne: Father of Modern Art,” paragraphs 4 (while using the … lifelike colors of the Impressionists) & 7 (like the Impressionists, Cezanne … through using vibrant colors)).

4 Teacher: Yes, we could state something like this: In contrast to Monet’s work, where emphasis was placed on color and light, Cezanne’s work emphasized form and structure in addition to color and light. Thus, unlike Monet, Cezanne restored a sense of order and structure to painting by reducing objects to their basic shapes.

The bold-faced text segments illustrate the teacher’s provisions of summaries related to the theme that was introduced earlier during this main IC session, i.e., characteristics of Monet’s and Cezanne’s work. As can be seen, the teacher first provides a summary of the group’s discussion on Monet’s and Cezanne’s use of real-life subject matter in their paintings (#1). Then, after a few exchanges of turns, the teacher provides a concluding summary of the group’s discussion up to that point in terms of the kind of world that the two artist’s work represented (#2). This is followed by another provision of a discussion summary regarding the artists’ use of colors (#3); this occurred in response to Blue’s, as well as another student’s, answer to a teacher-posed question. Finally, around the end of the IC session, the teacher also provides a summary of their discussion up to that point, this time, in terms of emphasis on color and light vs. emphasis on form and structure (turn 15).
As we have seen, all these summaries provided by the teacher are related to the theme. Hence, the bold-faced text segments in the excerpt well manifest the category “teacher’s provision of summaries related to the theme.” More broadly, this category, along with other categories, such as consistent discussion on the theme (Cheolsoo) and/or teacher’s consistent focus on a theme (Joonho), nicely represent the larger theme of thematic focus.

Now there remains another category that led to the theme of thematic focus which has not been addressed either in an earlier section where the results on this same theme for overall WebQuest writing performance were presented or in this section, namely, “questioning and answering on a theme.” As stated earlier, the entire main IC discussion texts for all the three groups (excluding the parts of the texts before the introduction of a theme) are characterized by questioning and answering on a theme. Therefore, I will present only some of the pertinent segments. The excerpt below is taken from the main IC discussion session for Gildong’s group.

Excerpt 15:

1 Teacher: All right. The authors of the readings address characteristics of Monet’s and Cezanne’s work. … This said, can you tell me some of the characteristics of Monet’s work that you could perceive while reading the materials? Feel free to refer to the Monet readings to answer this question.
2 Yellow: he take painterly approach
3 Green: Monet is really soft and lively as we can feel in his work
4 Red: Monet want to express light and color differently
5 Yellow: and the subject of the work is different, romanticism usually using history,myth but he using landscape as subject of his work
6 Teacher: Okay, Yellow mentions "landscape". Do you think landscape paintings represent the real world or an idealized world? Or something else?
7 Blue: Monet's style is soft color and impressive. but I don't remember well..
8 Red: Before Impressionism, painting a landscape means only paiting of real world.
9 Yellow: in early work of monet he try to describe as real as possible


**Teacher:** Then, how about Cezanne? Did he also use real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings?

**Yellow:** yes

**Teacher:** How do you know that?

**Teacher:** Okay, Red mentioned that Cezanne liked to distort the images in this paintings.

**Teacher:** What makes us say so?

**Red:** he painting the one objects in many diverse perspective

**Teacher:** Yes. Where in the readings is this mentioned?

**Blue:** 8th?

**Teacher:** Okay, Blue. The 8th paragraph of which reading? What is the name of the reading?

**Blue:** atist profile

**Teacher:** Okay, we also previously mentioned Monet's use of color. Then, how could we state this difference with Cezanne? How could we describe the difference?

**Blue:** Cezanne's color is more rough

**Teacher:** Okay, Blue. Yes. From what is described in the 6th paragraph of “Artist Profile: Paul Cezanne” (please read that paragraph), …

The entire text in the excerpt nicely reveals questioning and answering on a theme. Early in this main IC session, the teacher introduces a theme for discussion, i.e., characteristics of Monet’s and Cezanne’s work (turn 1). He then poses a broad question concerning the theme: “This said, can you tell me some of the characteristics of Monet’s work that you could perceive while reading the materials?” (turn 1). This question elicits a number of responses from students, which all represent their thoughts concerning characteristics of Monet’s work (turns 2 through 5). Then, capitalizing on one of the responses, the teacher poses a question designed to help students to build a deeper understanding of a key concept related to the theme: “Do you think landscape paintings represent the real world or an idealized world? Or something else?” (turn 6). Again, students responds to the theme-related question (turns 7 through 9).
After a series of question and answer exchanges on Realism between the teacher and students (ellipted turns), the teacher extends the discussion of Monet’s use of real-life subject matter further to Cezanne and asks students whether Cezanne also used real-life subject matter in his paintings and therefore his paintings represented the real world like Monet’s paintings (turn 10). In response to this theme-focused question, a student provides his/her answer (turn 11), and in response to it, the teacher poses a probing question, “How do you know that?” (turn 12).

The third and fourth portions of the text exhibit questioning and answering on Cezanne’s distortion of images and the two artists’ use of color, respectively. In the third portion of the text, the teacher first asks a theme-related, probing question of what makes a student say that Cezanne liked to distort images in this paintings (turn 14) and in response to the student’s answer to that question (turn 15), he asks a further probing question (turn 16). This answering and further probing questioning continue (turns 17 and 18). The fourth portion of the text (turns 18 through 20) also features questioning and answering on the theme, specifically on the two artists’ use of color.

As we have seen, the entire text in the excerpt well manifests questioning and answering on a theme, i.e., the theme of characteristics of Monet’s and Cezanne’s work. In the beginning, the questioning and answering focused on characteristics of Monet’s work. Following this, it extended further to focus on characteristics of Cezanne’s work. And then, finally, it came to focus on characteristics of both of the artists’ work as the discussion unfolded to touch upon a difference in use of color between the two artists. To borrow Gildong’s words, this process represents “talking about topics” within a larger theme through questioning and answering (see the section entitled “Performance on
Then, for Gildong, the topics would be representation of the real world in paintings, distorting images in paintings, and use of color in paintings. Given that all these topics pertain to the theme, i.e., characteristics of the two artists’ work, it follows that this entire text also nicely manifests the larger theme of thematic focus.

Themes on Performance on Overall Writing Quality

IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality. As all the three interview participants reported, IC’s facilitation of understanding of content served to assist them in their performance on the content component of overall writing quality, and their enhanced understanding of content gained through this process in turn exerted a positive influence on their performance on other components of overall writing quality (i.e., organization and/or grammar), hence resulting in improvement in their performance on overall writing quality. Given this, all the text segments presented in the preceding section on themes and codes for performance on content may well be presented in this section, because they would well manifest the category of IC’s facilitation of understanding of content. In fact, what the three interview participants reported regarding performance on overall writing quality supports the legitimacy of this statement. For example, in response to the researcher’s question about aspects/features of IC and IC discourse that served to assist him in his performance on overall writing quality, Gildong briefly reported, “The answer to this question is similar to the one that I gave in response to the previous question [regarding performance on content] … IC … was conducive to my understanding of content and therefore to my writing” (see the section entitled “Performance on Overall
Writing Quality under “Case 3: Gildong”). Also, as we saw earlier, the other two participants also reported that IC facilitated their content understanding and thus provided assistance with their performance on overall writing quality, of which content performance was a component. Like Gildong, they did not repeat what they had said previously regarding aspects/features of IC and IC discourse conducive to their performance on content.

In view of this, the text segments presented in the preceding section on themes and codes for performance on content may well be reproduced here with the pertinent results presented again. To avoid overlaps, however, I will not do so and will only present an excerpt from the IC discussion session for Cheolsoo’s group, because he provided additional information on IC’s facilitation of content understanding during the interview. For the category “IC’s facilitation of understanding of content through exchanges of information,” which emerged from Joonho’s interview data, the reader may also refer to Excerpt 3 and the presentation of results under the excerpt (see the subsection entitled “Interactive participation” within “Themes on Overall WebQuest Writing Performance”) in addition to all the excerpts and pertinent presentations of results in the preceding section on performance on content.37

The excerpt below, from the online IC discussion in which Cheolsoo participated, illustrates the category “teacher’s probing of content around a theme resulting in

37 Joonho’s report concerning “IC’s facilitation of understanding of content through exchanges of information” in relation to performance on overall writing quality is largely in line with what he said in relation to overall WebQuest writing performance that subsequently led to the category “interactive, multi-way exchanges of understandings of reading content/information” and the larger theme “interactive participation.” This suggests that he also had content in mind when he said it in response to the researcher’s questions on overall WebQuest writing performance.
facilitation/enhancement of content understanding,” which Cheolsoo reported had assisted him in his performance on overall writing quality.

Excerpt 16:

1 Teacher: … Then, can you tell me where in the Monet readings we can find evidence that Monet’s paintings, influenced by Courbet’s Realism, represented the real world?
2 Purple: at the fifth paragraph?
3 Teacher: The 5th paragraph of which reading?

4 Teacher: Yes, purple. How do you know that?
5 Blue: He drew real-life subject but he changed the forms and structures
6 Teacher: I mean, tell me where in the readings it is suggested that Cezanne also used real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings. Refer to all the materials that you have read, including the Cezanne readings and the hyperlinked readings.

7 Teacher: Blue and Purple both mentioned Cezanne's structure. How is this different from Monet's style?
8 Red: Monet's were focused on lights and color.
9 Teacher: What makes you say so?

This excerpt nicely exhibits text segments that manifest the category “teacher’s probing of content around a theme resulting in facilitation/enhancement of content understanding.” As the discussion unfolded around the theme of characteristics of Monet’s and Cezanne’s work, the teacher asks a question designed to probe pertinent content from the reading texts: “Then, can you tell me where in the Monet readings we can find evidence that Monet’s paintings, influenced by Courbet’s Realism, represented the real world?” (turn 1). Since the discussion thus far has centered around the established theme, the teacher is in fact probing reading content around that particular theme.
In response to a student’s rather incomplete answer to this question (turn 2), the teacher asks a further probing question, “The 5th paragraph of which reading?” (turn 3). Then, after several turns (ellipted turns), the teacher asks yet another probing question of a student who responded to his previous question: “How do you know that?” (turn 4). This question was designed to probe for the text-based basis of the student’s statement, i.e., to probe for the specific sources in the reading texts upon which the statement was based. As the student does not indicate the textual sources of his statement, however, the teacher asks a more specific, clarifying question, using a declarative/command form this time: “I mean, tell me where in the readings it is suggested that Cezanne also used real-life subject matter (for example, landscapes) in his paintings and therefore his paintings represented the real world like Monet’s paintings” (turn 6).38

After many turns have elapsed (ellipted turns), and as the discussion approaches its end, the teacher takes up two students’ earlier responses and asks another question designed to have students probe further into the content of the readings: “How is this different from Monet’s style?” (turn 7). This is followed by another question designed to probe for the reading-based basis of a student’s statement/response: “What makes you say so?” (turn 9).

As we have seen, the teacher has consistently probed reading content around a theme, i.e., characteristics of Monet’s and Cezanne’s work, by continually asking probing questions. Specifically, the probing questions (and hence the answers) have concerned representation of the real world in Monet’s paintings, Cezanne’s use of real-life subject matter and hence representation of the real world in his paintings, structure in Cezanne’s

38 Since a question is embedded in this declarative sentence, I am treating it as a question.
paintings, and Monet’s focus on lights and color. All these represent the theme of characteristics of Monet’s and Cezanne’s work. This is consistent with what Cheolsoo reported:

The teacher asked a number of questions concerning the content of the readings one by one and in systematic order, for example, questions about Monet and Cezanne, about the characteristics of their work. These questions engaged us in delving deeper and deeper into the details of the reading content. Having gone through this, I was able to write more easily with better content understanding. (see the section “Performance on Overall Writing Quality within “Case 2: Cheolsoo”)

Thus, the bold-faced segments in the excerpt well manifest the category “teacher’s probing of content around a theme resulting in facilitation/enhancement of content understanding.”

Summary

In this chapter, I presented the results of the study in order of its phases, i.e., quantitative followed by qualitative. In summarizing the results, I will also follow the same order. Results concerning research question 3, the mixed methods question, will be presented in the next chapter, because, as indicated earlier, the question, by its nature, can be answered only when an integrated interpretation of the quantitative and qualitative results (i.e., a meta-inference) is made.

Quantitative Results

A series of analyses were performed to answer research question 1(a), “What are the relative effects of online IC vs. online recitation vs. no post-reading instructional scaffold on the overall writing quality, content, fluency, syntactic complexity, and lexical
complexity, respectively, of EFL learners’ WebQuest writing?” First, given significant pretest differences on content among the treatment groups and the existence of correlations among the five dependent variables of overall writing quality, content, fluency, syntactic complexity and lexical complexity, a MANCOVA, with the pretest on content as the covariate, was first conducted on the dependent variables, prior to performing univariate ANCOVAs. As the MANCOVA revealed a significant multivariate effect (Wilk’s lambda = .77, $F(10, 192) = 2.63$, $p = .005$, $\eta^2 = .12$, observed power = .96), follow-up univariate ANCOVAs were conducted on each of the five dependent variables to see on which dependent variables the treatments had significant overall effects. Results of the ANCOVAs showed significant overall treatment effects on overall writing quality ($F(2, 100) = 4.50$, $p = .013$, $\eta^2 = .08$, observed power = .76) and content ($F(2, 100) = 7.84$, $p = .001$, $\eta^2 = .14$, observed power = .95). Then, given that research question 1(a), concerning the “relative” effects of treatments, required an examination of pairwise differences among the three groups following an investigation of significant overall effects on each of the five dependent variables, the univariate ANCOVAs were followed by post hoc pairwise comparisons on the two variables of overall writing quality and content, on which the preceding univariate ANCOVAs had revealed significant overall treatment effects.

Results from this final, post hoc examination of pairwise differences on overall writing quality and content showed that in the area of overall writing quality, the effect of online IC was significantly greater than that of no post-reading instructional scaffold ($p = .004$, $d = .75$). Results also revealed that in the area of content, online IC was more effective than both online recitation ($p = .008$, $d = .66$) and no post-reading instructional
scaffold \((p < .001, d = .96)\). More specifically, the results indicated that students who had received the online IC treatment \((M = 7.88)\) scored significantly higher on overall writing quality, controlling for the effect of the pretest differences on content, than students who had not received any post-reading instructional scaffold \((M = 6.29)\) and that students who had received the online IC treatment \((M = 9.16)\) also scored significantly higher on content, controlling for the pretest difference effect, than students who had received the online recitation treatment \((M = 7.58)\) and students who had not received any post-reading instructional scaffold treatment at all \((M = 6.86)\).

To answer research question 1(b), “What are the relative effects of online IC vs. online recitation vs. no post-reading instructional scaffold on EFL learners’ overall WebQuest writing performance?” two successive analyses were conducted, i.e., a one-way ANOVA followed by post hoc pairwise comparisons using the Tukey HSD and Scheffe tests. Results of the one-way ANOVA showed a significant overall effect of the treatments on students’ overall WebQuest writing performance \((F(2, 101) = 4.28, p = .016, \eta^2 = .08, \text{observed power} = .74)\). Then, since research question 1(b), concerning the “relative” effects of treatments, required an examination of pairwise differences among the three groups following an investigation of a significant overall effect on overall WebQuest writing performance, the one-way ANOVA was followed by post hoc pairwise comparisons.

Results from this post hoc examination of pairwise differences in overall WebQuest writing performance showed that the effect of online IC was significantly greater than that of no post-reading instructional scaffold \((p = .023, d = .68)\). Results, however, revealed that the effects of online IC vs. online recitation, as well as the effects of online
recitation vs. no post-reading instructional scaffold, were not significantly different. More specifically, the results of the post hoc pairwise comparison tests indicated that students who had received the online IC treatment ($M = 300.85$) scored significantly higher on overall WebQuest writing performance than students who had not received any post-reading instructional scaffold ($M = 266.81$).

**Qualitative Results**

To answer research question 2, consisting of three subquestions, within-case and cross-case analyses were performed on the interview data. Upon obtaining results from these analyses, texts from the online IC discussion sessions in which the three interview respondents participated were analyzed to find corroborating evidence for the interview results.

Analyses of the interview data for each case and across cases yielded three themes with regard to aspects and features of IC and IC discourse that might have assisted the EFL learners in their overall WebQuest writing performance: (a) the structure/sequence of IC, (b) interactive participation, and (c) thematic focus. The analyses also yielded themes regarding aspects and features of IC and IC discourse that might have assisted the EFL learners in their WebQuest writing performance in the respective areas of content and overall writing quality. For content, two themes emerged: (a) the structure/sequence of IC and (b) thematic focus. For overall writing quality, a single theme emerged: IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality.

Results from the within-case analysis were represented in such ways as to convince the reader that the themes and codes emerged from the data and as to provide multiple,
divergent views from the participants. With regard to the former, I provided evidence that the themes and codes emerged from the data by citing specific quotes pertinent to codes and by addressing those codes under the theme that they constituted. Regarding the latter, I addressed under each case not only the common themes identified across the cases but also uncommon themes, which were unique to the individual. In representing the common cross-case themes, I used a table (see Table 9) in addition to verbally presenting them in the body text.

Results from the analysis of the texts from the online IC discussions in which the three interviewees participated showed that the common themes identified through the cross-case analysis of the interview data were well manifested or reflected in the IC discussion data, indicating that the IC discussion data provided good corroborating evidence for the interview results. The detailed results of the corroborative analysis of the online IC discussion texts were presented under 16 excerpts from the online IC sessions for the interview participants’ groups. Under pertinent excerpts, detailed results were presented for each theme and by performance area.

The next section will be devoted to discussion of the results presented in this section. Research question 3 (i.e., the mixed methods question), which was not answered in this section, will also be answered in the next section. As indicated in Chapter 3, this mixed methods question will be answered in the course of making an integrated interpretation of the quantitative and qualitative results (see the section on research design in Chapter 3).
CHAPTER 5: DISCUSSION

This mixed methods study investigated the effects of types of post-reading instructional scaffolds on university-level EFL learners’ WebQuest writing performance, as well as examined aspects and features of IC and IC discourse that might have assisted the learners in their WebQuest writing performance. An explanatory sequential design was used, which involved collecting and analyzing quantitative data first and then collecting and analyzing qualitative data second in the sequence to help explain the quantitative results. The first, quantitative phase of the study, which employed an experimental, pretest-posttest control group design, investigated the effects of three post-reading instructional scaffolds, as provided in EFL WebQuest lessons: (a) online IC; (b) online recitation; and (c) no post-reading instructional scaffold. The second, qualitative phase, which employed a multiple case study design, examined aspects and features of IC and IC discourse that might have assisted the EFL learners in the online IC group in their WebQuest writing performance, particularly in the areas for which the quantitative results revealed the online IC group’s superior performance over one or both of the other two groups (i.e., the online recitation and no post-reading instructional scaffold groups).

Quantitative Phase

Summary of the Results

As results from univariate ANCOVAs, following a MANCOVA, showed significant overall effects of treatments on overall writing quality (p = .013) and content (p = .001), post hoc pairwise comparisons were conducted on the two dependent variables. Results from the post hoc comparisons showed (a) that students who had received the online IC treatment scored significantly higher on overall writing quality than students who had not received any post-reading instructional scaffold (p = .004) and (b) that students who had
received the online IC treatment scored significantly higher on content than students who had received the online recitation treatment \( (p = .008) \) and students who had not received any post-reading instructional scaffold treatment \( (p < .001) \). Stated differently, results showed that in the area of overall writing quality, the online IC group outperformed the no post-reading instructional scaffold (i.e., control) group and that in the area of content, the online IC group outperformed both the online recitation and control groups. As for fluency, syntactic complexity, and lexical complexity, no significant pairwise differences were found, because the univariate ANCOVAs had revealed no significant differences among the groups in these areas of WebQuest writing performance.

Regarding overall WebQuest writing performance, results from the post hoc Tukey and Scheffe tests, following a one-way ANOVA \( (p = .016) \), showed that students who had received the online IC treatment scored significantly higher on overall WebQuest writing performance than students who had not received any post-reading instructional scaffold \( (p = .023) \). In other words, results showed that the online IC group outperformed the control group in overall WebQuest writing performance. The difference between the online IC group and the recitation group (as well as the difference between the recitation group and the control group) was not significant.

Interpretation of the Results

The Results in Relation to the Hypotheses

The results from the univariate ANCOVAs support the pre-established general research hypothesis that type of post-reading instructional scaffold would impact EFL learners’ WebQuest writing performance in the respective areas of overall writing quality
and content. The results, however, do not support the other general research hypotheses concerning fluency, syntactic complexity, and lexical complexity, respectively.

The post hoc comparison results pertaining to overall WebQuest writing performance support the research hypothesis that online Instructional Conversation about WebQuest readings would lead to better overall WebQuest writing performance by EFL students than traditional, no post-reading instructional scaffold (see the “Statement of the Hypotheses” sections in Chapters 1 and 3). The results, however, do not support the other research hypothesis concerning overall WebQuest writing performance, which stated that online Instructional Conversation about WebQuest readings would lead to better overall WebQuest writing performance by EFL students than an online recitation review of the readings.

The post hoc comparison results pertaining to the specific areas of WebQuest writing performance support the following three hypotheses concerning overall writing quality and content:

1. Online IC about WebQuest readings will lead to EFL students’ better WebQuest writing performance in the area of overall writing quality than traditional, no post-reading instructional scaffold.

2. Online IC about WebQuest readings will lead to EFL students’ better WebQuest writing performance in the area of content than traditional, no post-reading instructional scaffold.

3. Online IC about WebQuest readings will lead to EFL students’ better WebQuest writing performance in the area of content than an online recitation review of the readings.
As for the other three areas of WebQuest writing performance, i.e., fluency, syntactic complexity, and lexical complexity, the results have failed to support the pertinent hypotheses.

_Tying the Results to the Theoretical and Empirical Literature Reviewed_

The results of this quantitative phase of the study lend support to IC theorists’ theoretical assertion that Instructional Conversation is the critical form of assisting performance through the ZPD (Tharp & Gallimore, 1991). As noted in Chapter 2, Tharp and Gallimore (1991) asserted that given their view of teaching as assisting performance through the ZPD, IC is the critical form of assisting performance through the ZPD over other forms of assistance, such as lectures, demonstrations, cooperative learning, independent textbook reading, and even recitation. This implies that while other forms of teaching (or assistance) cannot effectively enable the teacher to provide responsive assistance through learners’ ZPDs, IC can do so effectively, thereby facilitating their internalization of skills and functions. The quantitative results of this study, which showed the online IC group’s superior performance over the recitation and/or the non-scaffolded, independent reading (i.e., control) group in overall WebQuest writing, as well as in its component areas of overall writing quality and content, support the IC theorists’ assertion that IC is the critical form of assisting performance through the ZPD over other forms of assistance.

The results also support IC’s theoretical proposition that IC promotes learners’ deep understanding of concepts represented in written texts (Goldenberg, 1991, 1992/1993; Tharp & Gallimore, 1988). Particularly, the online IC group’s superior performance on content over both the online recitation and the control group found in this quantitative
phase of the study nicely supports the proposition. Granting that, as the results of Patthey-Chavez and Clare’s (1996) and Saunders and Goldenberg’s (2007) studies revealed, understandings of concepts, ideas, and interpretations gained during IC discussions transfer to students’ writings and become manifested in their writings, the IC group’s superior writing performance on content over the other two groups demonstrates that the IC discussion that the IC students had with the teacher actually fostered their deep understanding of concepts represented in the written WebQuest texts, thereby supporting the proposition advanced by IC theorists (see the discussion of the transfer of a “tracer” to writings in Chapter 2). Additionally, given that learners’ engagement in the process of developing deep understandings of concepts and ideas in written texts leads to their conceptual development (Goldenberg, 1991, 1992/1993; Tharp & Gallimore, 1988), the results of this study also lend support to a larger, extended proposition drawn from the IC theorists’ works: IC promotes learners’ deep understanding of concepts represented in written texts, thereby promoting their conceptual development. On the other hand, results concerning overall writing quality, which showed the IC group’s superiority over the control group, partially support the proposition that IC promotes learners’ deep understanding of concepts represented in written texts, because overall writing quality had content as a component.

As for the other three specific areas of performance, i.e., fluency, syntactic complexity, lexical complexity, for which no significant differences were found among the three groups, it may well be stated that IC failed to play a superior assisting role for students’ performance in these areas per se. Although this is true if we look at the results for these areas and only these areas per se, a different picture emerges if we look at the
results in conjunction with the finding on performance on content. Performance in these three areas can easily be improved by writing about things that are irrelevant to the task at hand, e.g., comparing and contrasting the work of the two artists in the case of this study.

The findings that the IC group outperformed the other two groups in content but the three groups performed equally well in fluency, syntactic complexity, and lexical complexity suggest that IC students’ writings were as fluent and syntactically and lexically as complex as recitation students’ and control students’ writings to the extent that the content of their writings was relevant to the task at hand and that recitation students’ and control students’ writings were as fluent and syntactically and lexically as complex as IC students’ writings to the extent that their writings were not as relevant to the task at hand as the IC students’ writings. Stated differently, the findings suggest that whereas students in the IC group wrote their essays focusing on content relevant to the task at hand and yet achieved the same levels of fluency, syntactic complexity, and lexical complexity, students in the recitation and the control group presented in their essays content relatively irrelevant to the given task and achieved the same levels of fluency, syntactic complexity, and lexical complexity as IC students. Some may have simply copied portions of the WebQuest reading texts, hence resulting in lower scores on content than IC students but comparable scores to those of IC students on fluency, syntactic complexity, and lexical complexity. No matter what the case may be, the findings that the recitation and control groups performed worse on content than the IC group but the three groups performed equally well in fluency, syntactic complexity, and lexical complexity suggest that students in the recitation and control groups wrote as long and syntactically and lexically as complexly as IC students about what is relatively irrelevant to the given task.
Thus, while the results on fluency and syntactic/lexical complexities alone indicate that recitation and no post-reading instructional scaffold were as effective to students’ performance in these areas as IC, if we look at the same results in conjunction with the finding on performance on content, we can see that IC students’ writings, unlike recitation and control students’ writings, focused on content relatively relevant to the task at hand and yet achieved the same levels of performance on fluency, syntactic complexity, and lexical complexity as students in the other groups. This is a hard task and hence merits credit. Now, it may well be stated that IC in fact played a positive assisting role for students’ desired, task-relevant performance in the areas of fluency, syntactic complexity, and lexical complexity. This concerns what Leki and Carson (1987) called text-responsible writing in EAP courses. As these researchers argued based upon their interview findings, in university EAP courses, text-responsible writing, i.e., writing that demonstrates understanding of the content of a specific text or texts, is critically important, especially because professors in content-area courses are concerned predominantly with content accuracy rather than the accuracy of language forms. This importance attached to demonstration of understanding of content from source texts in EAP writings is in line with the historical trend in the general area of ESL/EFL writing that content has been an important component of writing ability since the process approach to writing emerged (see Harris, 1969; Hilcocks, 1986, 1987; Horowitz, 1986; Weigle, 2002). Then, given the importance of text-responsible writing in EAP courses, a critical reader might question the value of the recitation and control students’ writings exhibiting comparable levels of fluency, syntactic complexity, and lexical complexity to
those of IC students’ writings without demonstrating an adequate understanding of text content as required by the task at hand in their task-based, WebQuest EAP lesson.

The results pertaining to performance on content, i.e., the IC group’s superior performance over the recitation and control groups, are consistent with Saunders and Goldenberg’s (2007) finding that IC students’ essays showed a deeper understanding of reading texts than recitation students’ essays. The results are also consistent with Saunders and Goldenberg’s (1999) earlier finding that students in the IC group were significantly more likely to demonstrate a good understanding of text themes in their essays than students in the traditional “read-and-study-alone” group. Relatedly, another finding from both of these experimental studies, together with a finding from Patthey-Chavez and Clare’s (1996) study, provides a supportive ground for a cogent interpretation of the results of this study. In these two experimental studies, Saunders and Goldenberg additionally found that students in the IC group outperformed the control group (i.e., the recitation group for their 2007 study and the read-and-study-alone group for their 1999 study) on non-essay, short-answer posttests of reading comprehension. When this finding is considered in conjunction with Patthey-Chavez and Clare’s (1996) finding that concepts and ideas gained during IC discussions actually transferred to students’ writings and became manifested in their writings, they together provide a potent supportive ground for interpreting the results of this study in such a way that the IC students, who had gained a better understanding of concepts and ideas from the WebQuest written texts through IC discussions, ultimately outperformed the other two groups in presenting essay content by virtue of the transfer of the understandings of
concepts gained during the IC discussions to their writings (see the discussion of the transfer of a “tracer” in Chapter 2).

The interpretation presented in the preceding paragraph represents a literature-based explanation of the quantitative results on performance on content. In the next section, we will look at and discuss research participants’ views on their WebQuest writing performance, including their performance on content. Given that this study adopted a mixed methods design involving a qualitative phase following this quantitative phase so that qualitative data could help explain the quantitative results, results from the second, qualitative phase will essentially serve to provide explanations for the quantitative results.

Qualitative Phase

Summary of the Results

In order to identify aspects and features of IC and IC discourse that might have assisted the EFL learners in the online IC group in their WebQuest writing performance in the particular areas for which the quantitative results revealed the online IC group’s superiority (over one or both of the other two groups), interview data from the three most successful online IC participants were analyzed using within-case and cross-case thematic analysis methods. The analyses of the interview data for each case and across cases yielded three common themes with regard to aspects and features of IC and IC discourse that might have assisted the online IC group EFL learners in their overall WebQuest writing performance: (a) the structure/sequence of IC, (b) interactive participation, and (c) thematic focus. The analyses also yielded themes regarding aspects and features of IC and IC discourse that might have assisted the EFL learners in their WebQuest writing performance in the respective areas of content and overall writing.
quality. For content, two common themes emerged from the data: (a) the structure/sequence of IC and (b) thematic focus. For overall writing quality, a single common theme emerged: IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality.

Results from an analysis of the texts from the online IC discussions in which the three interviewees participated showed that the common themes identified through the cross-case analysis of the interview data were well manifested in the IC discussion data, indicating that the IC discussion data provided good corroborating evidence for the interview results. These results were obtained from a detailed corroborative analysis of the texts contained in sixteen excerpts taken from the online IC discussion sessions for the three interviewees’ groups.

Interpretation of the Results

Since two of the three themes on overall WebQuest writing performance coincide with the two themes on performance on content, I will attempt an interpretation of the results on these two performance areas under the names of the three themes identified for overall WebQuest writing performance. This will be followed by a presentation of an interpretation of the results on performance on overall writing quality under its pertinent theme name. What needs be noted at this point is that while this section is intended for interpretation of the qualitative results per se, this interpretation will serve as a basis for answering the mixed methods question in the next section. In that section, where an integrated interpretation of the quantitative and qualitative results will be presented, the question of how qualitative results help to explain the quantitative results will be answered in the context of making such an integrated interpretation.
Overall WebQuest Writing Performance and Performance on Content

The structure/sequence of IC. For both the general area of overall WebQuest writing performance and the specific area of performance on content, the interview participants reported that the pre-reading IC assisted them with their WebQuest writing by providing a framework, focus, and/or direction for their subsequent reading. As we saw earlier from the excerpts taken from the pre-reading IC sessions for the three participants’ IC groups, the teacher in the IC groups, after introducing the concepts of Impressionism and Post-Impressionism, provided a framework/focus/direction for subsequent reading by saying, “While reading the materials, try to get to know the similarities and differences between Impressionism and Post-Impressionism” (see Excerpts 1, 11, and 12). This in fact represents a feature of what is called the “concept-text-application” or “CTA” approach to Instructional Conversation advanced by the leading IC scholars Wong and Au (1985). The rationale for these IC scholars’ advancement of the CTA approach as an alternative to the previous ETR (experience-text-relationship) approach was that in contrast to ETR, which could appropriately be used for comprehension of narrative texts, CTA was better suited to comprehension of expository texts, especially complex expository texts. Although similar to ETR, the CTA approach proposes that the first stage (C) be spent in introducing major “concepts” that the expository text will require (Tharp & Gallimore, 1988; Wong & Au, 1985). It also proposes that the teacher, after introducing the concepts and assessing what the students already know about them, have students read the text for a specific purpose related to the concepts (Wong & Au, 1985).

As can be seen from the excerpts (i.e., Excerpts 1, 11, and 12), in the beginning of the pre-reading ICs, the teacher introduced Impressionism and Post-Impressionism, two
key concepts represented in the expository WebQuest texts, by asking, “Has any one of you ever heard of the terms ‘Impressionism’ and ‘Post-Impressionism’?” Then, after assessing students’ background knowledge on these two concepts over several discourse turns, he explicitly tells the students to read the texts with a specific purpose, which is related to the concepts: “While reading the materials, try to get to know the similarities and differences between Impressionism and Post-Impressionism.” It has turned out that for IC students, this provided a framework/focus/direction for their subsequent reading, as the interview participants reported.

In terms of the IC model, the teacher’s early introduction of the two key concepts and subsequent assessment of students’ background knowledge about them, following the CTA approach, can be viewed as a manifestation of the second constituent element of IC presented in the IC model, i.e., activation and use of background knowledge and relevant schemata (see Table 1 in Chapter 2). That is, here, the teacher “‘hook[ed]’ into … pertinent background knowledge and [activated] relevant schemata necessary for understanding a text” (Goldenberg, 1991, p. 6). The purpose of activating and using background knowledge and schemata during pre-reading ICs is to connect them to post-reading IC discussions; to use the metaphorical word “weaving,” which IC theorists have often used in describing IC, the background knowledge and relevant schemata are intended to be “woven” into the post-reading IC discussion that follows (see Goldenberg, 1991; Rueda, Goldenberg, and Gallimore, 1992).

Then, relating all these to another key category that emerged which, along with the category of the pre-reading IC’s provision of a focus/framework/direction for subsequent reading, constituted the theme of the structure/sequence of IC (for both overall WebQuest
writing performance and content), it can be stated that the general IC feature (or element) of activation/use of background knowledge and schemata, along with the CTA-specific feature of reading for a specific purpose, served to help the IC students to “gain a deeper understanding of content through post-reading IC, following the pre-reading IC and reading” (see Table 9). To restate this more specifically, on the one hand, the pre-reading IC’s role of having students read the WebQuest texts with a specific purpose in mind, a feature of the CTA approach, aided the IC students in understanding the WebQuest reading texts, and, on the other hand, the activation/use of background knowledge and schemata during the pre-reading IC (or the introduction of major concepts and assessment of students’ background knowledge about them), a general feature of IC, enabled the IC participants to gain a deeper understanding of content during the post-reading IC because the background knowledge and relevant schemata addressed during the pre-reading IC was “woven” into their post-reading IC discussion. This latter is exactly what we saw in the analysis of post-reading IC texts from Joonho’s and Gildong’s groups (see Excerpts 2 and 13 and pertinent results presented under them).

While this structural/sequential aspect of IC turned out to have assisted the IC students in their overall WebQuest writing performance and performance on content, this assistance is by no means incidental. Although IC is conversational in tone and character, it is in fact pointed toward a learning objective or goal (Goldenberg, 1991). As the IC theory developers Tharp and Gallimore (1991) stressed, “[a]ssisting performance through conversation [in teaching situations] requires a quite deliberate and self-controlled agenda in the mind of the teacher, who has specific curricular, cognitive, and conceptual goals” (p. 4). This deliberate (or intentional) dimension of IC, associated with
curricular/learning goals or objectives, is well reflected in the five instructional elements of IC presented in the IC model (see Table 1). The teacher of IC students in this study carefully planned his IC lessons with these instructional elements in mind, and during the IC sessions, he faithfully followed the instructional elements (as well as the conversational elements), e.g., “activation/use of background knowledge and relevant schemata” for the pre-reading IC and “thematic focus” and “promotion of basis for statements/positions,” etc. for the post-reading IC. On the other hand, in planning the lessons, he also carefully selected a theme in consideration of the learning objective for the lessons, i.e., to be able to write an essay comparing and contrasting two artists’ work. Thus, in conducting the IC lessons, he faithfully followed the instructional elements of IC with the learning objective in mind while rendering the lessons conversational at the same time. In view of this, it may well be said that the three exemplary IC participants’ reports on the pre-reading IC’s role and the opportunity to gain a deeper understanding of content through the post-reading IC, following the pre-reading IC and reading, stem fundamentally from the IC lessons’ faithful reflection of the IC elements, especially the instructional elements of IC in the case of this particular theme of the structure/sequence of IC. Had the IC not been pointed toward the learning objective and had the teacher not faithfully followed the IC elements, the interview participants might not have reported that the aforementioned aspects/features of IC had assisted them in their overall WebQuest writing performance, as well as their performance on content.

*Thematic focus.* The interview participants reported that the thematically focused nature of IC assisted them in their overall WebQuest writing performance and in their WebQuest writing performance in the specific area of content. As we saw earlier from a
number of excerpts taken from the post-reading IC sessions for the three participants’ IC groups, the IC teacher introduced a predetermined theme early in the post-reading IC sessions (see Excerpts 7, 8, and 15, among others). At the very moment when he captured the opportunity to initiate discussion on the theme, he introduced it by stating, “As … said, the authors of the readings address characteristics of Monet’s and Cezanne’s work [italics added].” Following this, he initiated a thematically focused IC discussion by asking a general question, “This said, can you tell me some of the characteristics of Monet’s work that you could perceive while reading the materials?” Thereafter, the teacher led the discussion focusing squarely on the particular theme of characteristics of Monet’s and Cezanne’s work (see, for example, Excerpt 8). As can be seen from Excerpts 8 and 15, among others, the teacher consistently led the discussion with a focus on the established theme, and this continued through to the end of the IC session. This theme-focused discussion was by no means a mere coverage of theme-related content from the WebQuest readings, but rather, it involved an in-depth discussion on the theme, as Gildong reported (see Excerpt 9 and pertinent results presented under the excerpt).

Thematic focus is a key defining element of IC (Goldenberg, 1991; Saunders & Goldenberg, 2007). A good IC focuses on a substantive theme that is relevant to the text (Saunders and Goldenberg, 2007), and this text-relevant theme guides the discussion and helps organize the teacher’s attempts to promote text comprehension (Goldenberg, 1991; Rueda, Goldenberg, Gallimore, 1992). In the WebQuest lessons for this study, the WebQuest reading texts were not exclusively about characteristics of Claude Monet’s and Paul Cezanne’s work, and the texts addressed them in the midst of describing things in general about the artists. In this context, the IC teacher deliberately selected this theme
because discussion on the theme would best serve to assist the students in performing the WebQuest task, i.e., writing an essay comparing and contrasting the two artists’ work, thereby attaining the learning objective for the lessons, i.e., to be able to write an essay comparing and contrasting two artists’ work in the target language (i.e., English). The recitation sessions, which involved use of the same WebQuest reading texts, also addressed characteristics of the two artists’ work, but during the sessions, the teacher, due to the nature of recitation, simply “covered” the characteristics of the artists’ work in the context of reviewing the literal details of the texts. In contrast to these recitation sessions, the IC sessions focused squarely on the established theme and explored the theme in depth through to the end of the sessions. This has turned out to have provided assistance to the IC students’ overall WebQuest writing performance and specific performance on content.

Additionally, to view the same situation more broadly, the IC sessions, unlike recitation sessions, had a pre-reading stage of activation and use of students’ background knowledge and relevant schemata, which eventually connected to the thematically focused post-reading IC discussion. To use the “weaving” metaphor again, the background knowledge and schemata addressed during the pre-reading IC were later “woven” into the post-reading discussion, where discussion centered on a theme related to the background knowledge and schemata activated during the pre-reading IC. As we saw earlier, an excerpt from the Joonho group’s IC discussion, as well as an excerpt from the Gildong group’s IC discussion, clearly showed this (see Excerpts 2 and 13). To rephrase what I explicated under those excerpts, because a primary key to identifying the characteristics of the two artists’ work from the WebQuest reading texts was to
understand the two artists’ work in terms of Impressionism and Post-Impressionism, the teacher introduced the two concepts and assessed students’ background knowledge about them during the pre-reading IC (i.e., activation/use of background knowledge and relevant schemata). Then, after students have read the texts, the teacher, together with students, “wove” the background knowledge and schemata (concerning Impressionism and Post-Impressionism), which had been addressed during the pre-reading IC, into the post-reading discussion, where the discussion centered on a theme related to the earlier addressed concepts of Impressionism and Post-Impressionism. This suggests that the assistance which the three most successful IC participants reported they had received from the thematically focused aspect of the post-reading IC could not be appropriately explained without regard to the role of background knowledge and schemata activation/use addressed during the pre-reading IC. It may be that it was primarily by virtue of this connection (or “weaving”) that in-depth discussion on the theme was possible during post-reading IC discussions. In-depth discussion, which Golding reported in relation to thematically focused post-reading IC, is important in IC because IC encourages and promotes deeper understandings of concepts, and this consequently leads to learners’ conceptual development, a major goal of IC. The importance of this in-depth discussion on a theme becomes greater when we think of recitation lessons, where students engage in lower-level reviewing of literal details and hence are deprived of the opportunities to develop conceptually.

A final point that merits a discussion pertains to questioning and answering on a theme, a category which emerged from Gildong’s interview data. We saw earlier that what Gildong reported with regard to questioning and answering on a theme was well
manifested in a text from the online IC session in which he participated (see Excerpt 15 and the results presented under it). Throughout the post-reading IC session, the teacher consistently asked questions concerning the established theme and students answered. These theme-focused teacher questions were mostly posed in response to student contributions, and they were often probing questions, e.g., “How do you know that?” “Where in the readings is it mentioned?” These questions, which were designed to probe for the text-based basis of students’ statements, reflect the fourth instructional element of IC presented in the IC model, i.e., “promotion of bases for statements or positions,” which is described as “[t]he teacher promotes students’ use of text … to support an argument or position. … the teacher probes for the bases of students’ statements” (Goldenberg, 1992/1993, p. 309). That is, by asking these questions, the teacher refers students to the text that they have read. This is an important aspect of IC because IC is essentially talk about text and it was originally defined in terms of a “weaving” of previous understanding with written text (see Tharp & Gallimore, 1988).39 Thus, the teacher’s posing of these questions can be viewed as an attempt to promote students’ use of text, thereby promoting learning. Again, it is intentional and “instructional.” One thing that needs to be noted is that by asking such probing questions, the teacher is not simply relating any discussion (or any previous understanding) to the text, but rather, he is relating “theme-focused” discussion to the text. Given that a theme in IC represents a key concept or a set of key concepts from the text, this process of relating the discussion

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39 This is the original metaphorical use of “weaving” by IC scholars, which is different from our previous metaphorical use of the word.
to the text will efficiently promote students’ learning. The importance of the careful selection of a theme lies here.

In this study, the theme for IC in the WebQuest lessons was selected in careful consideration of the task, i.e., the post-IC WebQuest task of writing a compare-and-contrast essay using texts as source materials. As a result, the theme came to be selected in consideration of the learning objective for the lessons, because a learning objective in task-based learning is associated with the task. By virtue of this carefully selected theme, the IC teacher’s attempts at theme-based weaving of discussions (or students’ previous understandings) with the WebQuest texts through probing questions most likely played an important assisting role for students’ WebQuest writing performance. This, I believe, is what Gildong implied when he reported that questioning and answering on a theme during his IC session was conducive to his overall WebQuest writing performance.

Interactive participation. Interactive participation is an aspect of IC that the interview participants reported had assisted them in their overall WebQuest writing performance. It appears that the three participants reported on this IC aspect largely in terms of IC’s conversational features/elements of “responsiveness to student contributions” and “connected discourse” (see Table 1 in Chapter 2). As an analysis of a text from Joonho’s IC group showed (Excerpt 3), Joonho’s interview report on interactive, multi-way exchanges of understandings of reading content/information concerned “connected discourse,” which Goldenberg’s (1992/1993) IC model describes as “The discussion is characterized by multiple, interactive, connected turns; succeeding utterances build upon and extend previous ones” (p. 319). On the other hand, Cheolsoo’s report on the teacher’s provisions of summaries in response to multiple students’
contributions, as well as Gildong’s report on teacher questioning in response to student contributions (e.g., “How do you know that?” and “What makes you say so?”) concerned “responsiveness to student contributions,” which the IC model describes as “the teacher is … responsive to students’ statements and the opportunities they provide” (p. 309). Additionally, Gildong’s report on students’ active participation and interaction seems to concern both connected discourse and responsiveness to student contributions (see Excerpt 6 and pertinent results presented under the excerpt).

These IC features/elements reflect a high degree of responsiveness and dynamic interaction among participants, which are typical of natural conversations; for this reason, Goldenberg (1992/1993) subsumed the last five elements of IC presented in the IC model, including these two elements, under the category of “conversational” elements. Although the discourse in ICs looks conversational, the discussion, however, is in fact guided by the teacher’s curricular goals and learning objectives (see Rueda, Goldenberg, & Gallimore, 1992). Hence, IC is characterized as conversational in quality on the one hand but instructional in intent on the other hand (Goldenberg, 1991). Tharp and Gallimore (1991) describe these dual dimensions of IC as follows: While IC is pointed toward learning objectives by the teacher’s intention, “even the most sophisticated learners may lose consciousness of the guiding goals as they become absorbed in joint activity with the mentor” (p. 5).

Excerpt 5, from the online IC session for Gildong’s group, illustrates the dual dimensions of IC. Teacher questions in the excerpt, such as “How do you know that?” and “What makes you say so?” were briefly discussed in a preceding paragraph in terms of responsiveness to student contributions because they showed that “the teacher is …
responsive to students’ statements and the opportunities they provide” (Goldenberg, 1992/1993, p. 309). The questions indeed well represent the teacher’s responsiveness to student contributions and thus are conversational; as in natural conversations, the questions were asked in response to, and taking up on, the interlocutors’ contributions. This renders the interactions spontaneous and free from the didactic characteristics normally associated with formal didactic teaching. However, if we look at the questions from a different angle, they also represent “promotion of bases for statements or positions,” an instructional element in the IC model, which involves a teacher’s deliberate attempt to promote learning (see Table 1 in Chapter 2). As discussed above under the theme of thematic focus, these questions, which refer students to the text at hand, are designed to promote learning; hence, they are intentional and “instructional.”

This shows that interactive participation, which the interview participants reported, would need to be interpreted as meaning interactive participation with both the conversational and instructional dimensions. This is evident in such constituent categories of interactive participation as “interactive, multi-way exchanges of understandings of reading content/information” (Joonho) and teacher’s provision of summaries [on discussion content] in response to multiple students’ contributions. In short, although it may appear on the surface that the interview participants reported on interactive participation solely in terms of IC’s conversational aspects/features, it is most likely that they in fact had in mind both the conversational and instructional dimensions of interactive participation. This suggests that the conversational and instructional dimensions of IC, as they are interlockingly related to each other, always go along together, and importantly, they should go along together, as IC theorists have suggested
This in turn implies that in planning IC lessons, the teacher should consider these two dimensions together, or “weave” these two dimensions, if s/he is to promote student learning.

**Performance on Overall Writing Quality**

*IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality.* The interview participants reported that IC’s facilitation of understanding of content served to assist them in their performance on the content component of overall writing quality, and their enhanced understanding of content gained through this process in turn exerted a positive influence on their performance on other components of overall writing quality (i.e., organization and/or grammar), hence resulting in improvement in their performance on overall writing quality. Cheolsoo and Gildong reported that their enhanced understanding of content gained through IC served to provide help for organizing their writings, while Joonho reported that his heightened understanding of content gained through IC led “automatically” to improvement in the organization and grammar of his writing. Thus, what all the three interview participants indicated was that IC, by facilitating their understanding of the content of the reading texts, first, and foremost, provided assistance with their performance on the content component of overall writing quality, and then, their enhanced understanding of content gained through the IC naturally provided help for, or automatically led to, improvement in other components of overall writing quality.

This suggests that IC’s role in facilitating content understanding is potentially pivotal in improving students’ performance on overall writing quality, because improvements in the other two components, i.e., organization and grammar, result naturally from enhanced
understanding of content gained through IC, as the interview participants reported. As it seems that these interview findings on overall writing quality are informative to the field of EAP, as well as the general field of EFL/ESL, especially when they are interpreted in terms of the dual goals of IC, i.e., conceptual and language development, and some key principles of task-based language teaching and communicative language teaching (CLT), I will allocate a new subsection to discuss the findings in terms of the IC goals and key principles of task-based language teaching and CLT.

**Interpretation of the findings on overall writing quality in relation to IC’s dual goals and key principles of task-based language teaching and CLT.** From Vygotsky’s (1978) perspective, conceptual (or cognitive) development and learning occur through learners’ interaction with more capable others in the ZPD. Vygotsky holds that language learning, like all other learning, occurs in interaction with more competent others in the ZPD. At the same time, from his view (Vygotsky, 1962), language plays a central role in conceptual development through the ZPD; to put it differently, language interactions in the ZPD are a primary vehicle for conceptual development through the ZPD.

Now, let me relate these Vygotskian views to Instructional Conversation, which has its theoretical roots largely in Vygostsy’s theory. IC theorists claim that IC, which takes place in the ZPD, assists learners in gaining deeper understandings of concepts represented in written texts, thereby promoting their conceptual development through the ZPD (Tharp & Gallimore, 1988, 1992; Goldenberg, 1991, 1992/1993). Because IC theorists, following Vygotsky, also view language as a primary vehicle for conceptual development, IC involves use of language by learners and a more competent other person,
i.e., the teacher, in the ZPD. As Tharp and Gallimore (1988) stated while describing conceptual and language development, which are the dual goals of IC,

The entire group of teacher and students share both verbal language and written text, and so is intermental. Simultaneously, the meanings are internalized for each member. … That which is social, …, becomes psychological in the higher cognitive processes of each member” (p. 132).

This statement indicates that IC involves sharing of verbal language by learners and the teacher. Also, it nicely describes how concepts (or meanings) are internalized through the shared use of verbal language and written text by learners and the teacher. Despite this, however, it does not provide a description of how IC promotes language development. Although IC theorists’ work in the extant literature does not inform the reader in sufficient detail about how IC promotes language development, one can infer this from some of their work.

Following Vygotsky, IC theorists also hold that language learning, like all other learning, occurs in interaction with more competent others in the ZPD (Tharp & Gallimore, 1988). Since IC involves sharing of verbal language around shared written text, as seen above, it leads to both conceptual and language development. Conceptual development occurs through learners’ engagement in developing deep understandings of concepts and ideas represented in written text; to be more precise, in IC, the teacher assists learners in gaining deeper understandings of concepts and ideas represented in written text in the course of verbally interacting (i.e., sharing verbal language) with the learners, and this leads to the learners’ conceptual development through the ZPD.

Language development and learning, on the other hand, occur naturally in the course of
learners’ verbal interactions with the teacher. Then, it can be stated that in IC, language is at once a vehicle for conceptual development and a result of students’ verbal interaction in the ZPD.

While IC theorists do not provide an explicit account of how language development occurs through IC, Tharp and Gallimore’s (1988) detailed description before their introduction of IC of how children learn and develop language and concepts in natural settings suggests that IC leads naturally to students’ language learning and development in the ZPD (see Chapter 5 in Tharp & Gallimore, 1988). This is an important point in relation to our findings on overall writing quality because it coincides with what our interview participants reported. As noted above, they all reported that their enhanced understanding of content gained through IC naturally or automatically led to improvement in the other two language components of overall writing quality, i.e., grammar and organization.

IC theorists would certainly consider grammar and organization (e.g., coherence, use of cohesive devices, etc.) to be components of language ability, as language assessment theorists and researchers traditionally have. In terms of writing ability in particular, given the current tendency in the areas of writing assessment and writing research that the construct of writing ability is often viewed and defined as consisting of content, organization, and grammar (as in this study), the consistency of what the interview participants reported about the natural causal relationship between content understanding and improvement in the language components of overall writing quality with IC theorists’ view that IC leads naturally to students’ language learning and development, along with
the finding on the importance of content understanding in overall writing quality, is indeed enlightening to the field of EAP, as well as the general filed of EFL/ESL.

The interview participants’ report is also consistent with key principles of task-based language teaching as addressed by Ellis (2003), as well as those of communicative language teaching (CLT) (Ellis, 2003; Howatt, 1984, as cited in Ellis, 2003; Savignon, 2001). As described earlier in Chapter 2, task-based language teaching, which constitutes a strong version of CLT, involves use of a task that “requires the participants to function primarily as ‘language users’ … [t]hus, any learning that takes place is incidental”’ (Ellis, 2003, p. 3). In a similar vein, a strong version of CLT claims that “language is acquired through communication” (Howatt, 1984, p. 279, as cited in Ellis, 2003); that is, “learners … discover the [structural] system of [a language] in the process of learning how to communicate” (Ellis, 2003, p. 28). Thus, “the strong version of CLT … involves providing learners with opportunities to experience how language is used in communication” (Ellis, 2003, p. 28). Here, we can see a crucial commonality shared by the strong version of CLT and task-based language teaching: “Both CLT and task-based language learning teaching/learning emphasize meaningful use of language through communication, with learning taking place as a result of it” (see p. 53, Chapter 2 in this dissertation). This is indeed consistent with IC theorists’ view on conceptual development and language learning/development and is also consistent with the interview finding on the natural causal relationship between enhanced content understanding and improvement in the language components of overall writing quality. It is consistent with IC theorists’ view that IC, which promotes students’ understandings of concepts through meaningful interactive use of language (and thereby fosters their conceptual
development), naturally results in students’ language learning and development. It is consistent with the interview participants’ report that their enhanced understanding of content gained through IC naturally or automatically led to improvement in the other two language components of overall writing quality, i.e., grammar and organization. In addition to this consistency, the aforementioned consistency between IC and task-based language teaching (as well as CLT), which was discovered in the course of this discussion, merits attention in that it informs us that IC shares a commonality with task-based language teaching in its views of how language is used (i.e., meaning-focused as opposed to form-focused and dialogic/interactive as opposed to monologic) and how learning takes place (incidental as opposed to intentional as in grammar exercises).

Turning to the empirical literature, what the interview participants reported is consonant with findings from some empirical research in the extant literature. First, the interview participants’ report on their enhanced understanding of content (gained through the IC) providing help for improvement in other components of overall writing quality is consistent with Langer’s (1984) and McCutchen’s (1986) findings that there was a strong positive relationship between students’ content knowledge and the coherence (i.e., a key component of organization) of their writings (see Chapter 2). Second, the participants’ report also reveals some consistency with Tedick’s (1990), Chesky and Hieberts’ (1987), and Langer’s (1984) findings that students’ content knowledge had an impact on the overall writing quality of their writings (see Chapter 2), since overall writing quality, as indicated above, is typically assessed in terms of content, organization, and grammar.
Quantitative and Qualitative Phases Combined

When presenting the research questions for this study in Chapters 1 and 3, I indicated that while many researchers using a sequential explanatory mixed methods design render the mixed methods question implicit in their research reports, I had explicitly presented a mixed methods question in this report and added that this question would be answered. This section is designed for an integrated interpretation of the qualitative and quantitative results, in the course of which the mixed methods question will also be answered.

Following what was described in the section on the research design for this study in Chapter 3, I will integrate findings from the quantitative and qualitative phases to interpret the results in terms of the mixed-methods research question, i.e., “In what ways do the qualitative data help to explain the quantitative results?” The reason why this mixed methods question was not answered in Chapter 4, along with the qualitative and qualitative questions, and instead will be answered here is that it can only be appropriately answered in the context of making an integrated interpretation of the quantitative and qualitative results following separate interpretations of them (see the section entitled “Research Design” in Chapter 3).

*Integrated Interpretation: In What Ways Do the Qualitative Data Help to Explain the Quantitative Results?*

Based on the interpretation of the qualitative results presented in the preceding section, I will present an integrated interpretation of the quantitative and qualitative results by each area of performance, in the context of which the mixed methods question will be answered. Given that interpretation of the qualitative results was already presented in the preceding section, I will present for each area of performance the
answers to the mixed methods question first and then address the pertinent interpretation. This sequence of presentation, I believe, will also enable the reader to clearly identify the answers to the mixed methods question for each area of performance.

Results from the quantitative phase of the study showed the online IC group’s superior performance over one or both of the other two groups (i.e., recitation and control groups) in the areas of overall writing quality and content, as well as in the general area of overall WebQuest writing performance. On the other hand, analyses of qualitative, interview data revealed a number of themes with regard to aspects and features of IC and IC discourse that might have assisted the EFL learners in the online IC group in their performance in these three areas. The subsections that ensue address the answers to the mixed methods question for each area of performance, as well as pertinent interpretations. I will begin with content, because a proper understanding of presentation on overall writing quality, which has a category concerning facilitation of content understanding, presupposes reading the presentation on content and because overall WebQuest writing performance has content as a component.

**Content**

Generally stated, results from the qualitative data help to explain the quantitative results showing the online IC group’s superior performance on content by revealing that (a) the structure/sequence of IC and (b) thematic focus during IC assisted students in their performance in this area of WebQuest writing. While this statement certainly represents a description of how the qualitative data help to explain the quantitative results, it does not represent an appropriate answer to the mixed methods question, “In what ways do the qualitative data help to explain the quantitative results?” Thus, based upon the
interpretation of the qualitative results on performance on content presented in the preceding section, an integrated interpretation of the quantitative and qualitative results will be made in order to answer the mixed methods question appropriately. As stated above, I will present the answer to the mixed methods question first.

*The structure/sequence of IC.* In terms of the structure/sequence of IC, results from the qualitative data help to explain the quantitative results on performance on content in the following way: The teacher’s activation and use of background knowledge and relevant schemata and his giving explicit instructions for students to read texts for a specific purpose during pre-reading ICs not only provided the IC students with a framework, focus, and/or direction for their subsequent reading but also enabled them to gain a deeper understanding of content during post-reading ICs. This structural/sequential aspect of IC consequently assisted the IC students in their performance on content, thereby leading to their superior performance in this area over the recitation and control groups.

To restate this in terms of the IC model and the CTA approach to IC, the intentional, instructional element of activation/use of background knowledge and relevant schemata as addressed in the IC model, along with the CTA-specific feature of reading for a specific purpose, served to assist the IC students in their performance on content, thereby enabling them to outperform the other two groups in the area of content. More specifically, on the one hand, the pre-reading IC’s role of having students read the WebQuest texts with a specific purpose in mind, a feature of the CTA approach, aided the IC students in understanding the WebQuest reading texts, and, on the other hand, the activation/use of background knowledge and schemata during the pre-reading IC (or the
introduction of major concepts and assessment of students’ background knowledge about them), a general feature of IC, enabled the IC participants to gain a deeper understanding of content during the post-reading IC because the background knowledge and relevant schemata addressed during the pre-reading IC were “woven” into their post-reading IC discussion.

**Thematic focus.** In relation to the thematically focused aspect of IC, results from the qualitative data help to explain the quantitative results on performance on content in the following way: The teacher’s and students’ focus on a task-related and text-relevant substantive theme and their in-depth exploration of that theme throughout the post-reading IC sessions assisted the IC students in their performance on content, thereby enabling them to outperform the other two groups in this area of WebQuest writing.

The theme for IC was selected in such a way as to be related to the WebQuest task, i.e., writing an essay comparing and contrasting two artists’ work, and consequently to the learning objective for the WebQuest lessons. The theme, as suggested by Saunders and Goldenberg (2007), was also a substantive one that was relevant to the WebQuest texts. Throughout the post-reading IC sessions, students, together with the teacher, explored this task-related and text-relevant theme in depth while continually relating (or “weaving”) their discussions of the theme to the texts at hand. This has turned out to have provided assistance for the IC students’ performance on content, because in-depth exploration of the task-related, text-relevant theme around the texts enabled them to gain deeper understandings of task-related concepts represented in the written texts. Students’ engagement in deeper understanding of concepts from written texts is important in IC
because it leads to learners’ conceptual development, a major goal of IC (see Tharp & Gallimore, 1988; Goldenberg, 1991; 1992/1993).

In contrast to this, students in the recitation group simply reviewed the literal details of the same texts with no established theme and therefore with no thematic focus. Although the teacher in the recitation sessions also addressed the characteristics of the two artists’ work, he simply “covered” them in the context of reviewing the literal details of the texts, without exploring them deeply with students. This likely led the recitation students to gain lower-level, shallow understanding of task-related concepts represented in the WebQuest texts, thus performing at a lower level on content than IC students. In terms of conceptual development, since they engaged in a lower-level thinking activity, they were deprived of the opportunities to develop conceptually.

Overall Writing Quality

Results from the qualitative data help to explain the quantitative results on overall writing quality. Generally stated, by revealing that IC’s role of facilitating students’ understanding of content, along with the resulting improvement in other components of overall writing quality, assisted students in their performance on overall writing quality, the qualitative results help to explain the online IC group’s superior performance on overall writing quality. Based upon the interpretation of the qualitative results on performance on overall writing quality presented in the preceding section, an integrated interpretation of the quantitative and qualitative results will be made in order to answer the mixed methods question appropriately.

IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality. In relation to this aspect of IC, results from
the qualitative data help to explain the quantitative results on performance on overall writing quality in the following way: IC’s role of facilitating deeper understanding of content through instructionally oriented verbal interactions, along with improvements in other components of overall writing quality resulting naturally from the IC-facilitated deeper, enhanced understanding of content, assisted the IC students in their performance on overall writing quality, thereby leading to their superior performance in this area.

In IC, the teacher focuses on facilitating students’ understanding of content from written text by assisting the students in gaining deeper understandings of concepts and ideas represented in the written text in the course of verbally interacting (i.e., sharing verbal language) with the students, and this leads to the students’ conceptual development (see Tharp & Gallimore, 1988; Goldenberg, 1991, 1992/1993). These verbal interactions, or the sharing of verbal language (Tharp & Gallimore, 1988), have both conversational and instructional dimensions. As will be described in further detail in the next subsection, the teacher in IC leads discussions in a conversation-like way, but yet, he has clear instructional intent. This is manifested in two categories concerning IC’s role of facilitating understanding of content: “IC’s facilitation of understanding of content through exchanges of information” (Joonho) and “teacher’s probing of content around a theme resulting in facilitation/enhancement of content understanding” (Cheolsoo) (see Table 9). An excerpt from the IC session for Cheolsoo’s group which exhibited text segments illustrating the latter category, for example, showed the teacher posing probing questions in the course of verbally interacting with students (see Excerpt 16) This exemplifies the instructional dimension of verbal interactions in IC. Thus, it can be stated that IC’s role of facilitating deeper understanding of content through
instructionally oriented verbal interactions first provided assistance with IC students’
performance on the content component of overall writing quality. Then, their deeper,
enhanced understanding of content gained through the IC naturally or automatically led
to improvement in the other two language components of overall writing quality, as the
interview participants reported, thereby assisting them in their performance on overall
writing quality. This report by the interview participants is consistent with IC theorists’
view that language learning and development occur naturally in the course of learners’
verbal interactions with the teacher. It is also consistent with key principles of task-based
language teaching and CLT, especially in that in both CLT and task-based language
teaching, language learning is viewed as taking place incidentally, as a result of learners’
engaging in meaningful use of language through communication (see Ellis, 2003).

Overall WebQuest Writing Performance

Generally stated, results from the qualitative data help to explain the quantitative
results showing the online IC group’s superior performance on overall WebQuest writing
performance by revealing that (a) the structure/sequence of IC, (b) thematic focus during
IC, and (c) interactive participation assisted students in their performance in this general,
composite area of WebQuest writing. Since the first two themes (i.e., the
structure/sequence of IC and thematic focus) coincide with the two themes for
performance on content and since the codes that led to these themes for overall
WebQuest writing performance are similar to those that led to the same themes for
performance on content, the answers to the mixed methods question in relation to these
themes for overall WebQuest writing performance, as well as pertinent interpretations,
would be largely the same as those for performance on content. Therefore, for these two
themes, what I presented in relation to these themes in the subsection entitled “Content” could well be reproduced here. I will do so here, but yet, a key modification would need to be made to the reproduced text, as we will see in the next paragraph.

As noted a number of times throughout Chapters 4 and 5, the codes that led to these two themes for overall WebQuest writing performance are similar to those that led to the same themes for performance on content because the interview participants, as they all confirmed, were focusing on the content component of overall WebQuest writing performance when they were reporting on the aspects/features of IC that had assisted them in their overall WebQuest writing performance and consequently reported more or less the same things for performance on content as for overall WebQuest writing performance. For this reason, we have two common themes across performance on content and overall WebQuest writing performance with their constituent categories more or less the same across the two performance areas. In short, the interview participants had content in mind when reporting on the structure/sequence of IC and thematic focus as aspects of IC that had assisted them with their overall WebQuest writing performance. Then, it follows from this that a point would need to be added to the aforementioned reproduced text from the subsection on content to the effect that the aspects of IC represented by these two themes first assisted the IC students in their performance on content and consequently in their overall WebQuest writing performance; this is what the interview participants meant in their interview reports. This is what I will do for these two themes, and I will highlight modified portions of the text which address that point in italics. Any reader who has a good understanding of what I have stated thus far may read
The structure/sequence of IC. In terms of the structure/sequence of IC, results from the qualitative data help to explain the quantitative results on overall WebQuest writing performance in the following way: The teacher’s activation and use of background knowledge and relevant schemata and his giving explicit instructions for students to read texts for a specific purpose during pre-reading ICs not only provided the IC students with a framework, focus, and/or direction for their subsequent reading but also enabled them to gain a deeper understanding of content during post-reading ICs. This structural/sequential aspect of IC assisted the IC students in their performance on content and consequently in their overall WebQuest writing performance, thereby leading to their superior performance in this general, composite area of WebQuest writing.

To restate this in terms of the IC model and the CTA approach to IC, the intentional, instructional element of activation/use of background knowledge and relevant schemata as addressed in the IC model, along with the CTA-specific feature of reading for a specific purpose, served to assist the IC students in their performance on content and consequently in their overall WebQuest writing performance, thereby leading to their superior performance in the general area of overall WebQuest writing. More specifically, on the one hand, the pre-reading IC’s role of having students read the WebQuest texts with a specific purpose in mind, a feature of the CTA approach, aided the IC students in understanding the WebQuest reading texts, and, on the other hand, the activation/use of background knowledge and schemata during the pre-reading IC (or the introduction of major concepts and assessment of students’ background knowledge about them), a
general feature of IC, enabled the IC participants to gain a deeper understanding of content during the post-reading IC because the background knowledge and relevant schemata addressed during the pre-reading IC were “woven” into their post-reading IC discussion.

Thematic focus. In relation to the thematically focused aspect of IC, results from the qualitative data help to explain the quantitative results on overall WebQuest writing performance in the following way: The teacher’s and students’ focus on a task-related and text-relevant substantive theme and their in-depth exploration of that theme throughout the post-reading IC sessions assisted the IC students in their performance on content and consequently in their overall WebQuest writing performance, thereby leading to their superior performance in this general area of WebQuest writing.

The theme for IC was selected in such a way as to be related to the WebQuest task, i.e., writing an essay comparing and contrasting two artists’ work, and hence to the learning objective for the WebQuest lessons. The theme, as suggested by Saunders and Goldenberg (2007), was also a substantive one that is relevant to the WebQuest texts. Throughout the post-reading IC sessions, students, together with the teacher, explored this task-related and text-relevant theme in depth while continually relating (or “weaving”) their discussions of the theme to the texts at hand. This has turned out to have provided assistance for the IC students’ performance on content and consequently their overall WebQuest writing performance, because in-depth exploration of the task-related, text-relevant theme around the texts enabled them to gain deeper understandings of task-related concepts represented in the written texts. Students’ engagement in deeper understanding of concepts from written texts is important in IC because it leads to
learners’ conceptual development, a major goal of IC (see Tharp & Gallimore, 1988; Goldenberg, 1991; 1992/1993).

In contrast to this, students in the recitation group simply reviewed the literal details of the same texts without any established theme and therefore with no thematic focus. Although the teacher in the recitation sessions also addressed the characteristics of the two artists’ work during the sessions, he simply “covered” them in the context of reviewing the literal details of the texts without exploring them deeply with students. This likely led them to gain lower-level, shallow understanding of task-related concepts represented in the WebQuest texts, hence performing at a lower level on content and consequently on overall WebQuest writing than IC students. In terms of conceptual development, it may well be stated that since they engaged in a lower-level thinking activity, they were deprived of the opportunities to develop conceptually.

*Interactive participation.* In relation to interactive participation, results from the qualitative data help to explain the quantitative results on performance on overall WebQuest writing performance in the following way: Not just conversationally but also instructionally interactive aspects of IC and IC participation assisted the IC students in their overall WebQuest writing performance, thereby leading to their superior performance in this general, composite area of WebQuest writing.

While it may appear on the surface that the three interview participants reported on the IC aspect of interactive participation solely in terms of IC’s conversational aspects/features, such as “connected discourse” and “responsiveness to student contributions” (see Goldenberg, 1992/1993), if we examine closely the participants’ statements on this IC aspect and the categories that constituted the theme of interactive
participation, we can see that they reported on it in terms of IC’s instructional aspects/features as well. That is, when they were reporting on IC’s aspect of interactive participation, they were addressing it as it was related to the learning objective of the lesson, i.e., to be able to write an essay comparing and contrasting two artists’ work. The teacher, who had selected a task-related and text-relevant theme with the learning objective in mind, was in fact intentionally and instructionally attempting to promote students’ understanding of content related to the task and thus to the learning objective in the context of conversationally interactive participation. For example, he was attempting to “promote bases for statements or positions” by asking such questions as “How do you know that?” and “What makes you say so?” in response to, and taking up on, students’ contributions (see, for example, Excerpt 5 in Chapter 4). It follows from this that what our participants meant in their reports was that not just conversational but, presumably more dominantly, instructional aspects involved in interactive participation also assisted them in their overall WebQuest writing performance. This presumably more dominant focus on instructional aspects is well manifested in the following categories which led to the theme of interactive participation: “interactive, multi-way exchanges of understandings of reading content”; “modifying misunderstandings of reading content through such exchanges”; “teacher’s provisions of summaries [on content] in response to multiple students’ contributions”; and “teacher questioning [on the content of the reading texts] in response to student contributions.”

Implications

The results of this study have implications in a number of ways. In this section, implications of the study’s results will be addressed in both theoretical and practical
terms. The first two points concern theoretical implications, and the next two concern practical implications.

First, in terms of theory, results from this study inform us that IC, as used in the context of EFL WebQuest lessons, can serve as a legitimate, viable means for fostering both the conceptual and the language development of EFL students, who have traditionally been deprived of opportunities to engage in performing language learning tasks within their zones of proximal development, i.e., beyond their current cognitive developmental levels. With regard to conceptual development -- one of two goals of IC (see Tharp & Gallimore, 1988; Goldenberg, 1991, 1992/1993) -- results from the quantitative and qualitative phases of the study, which revealed greater effectiveness of IC in the area of content as compared to recitation and independent reading and IC’s key role in facilitating understanding of content, respectively, as well as the meta-inferential results pertaining to the mixed methods question, suggest that IC promotes and facilitates EFL learners’ deep understanding of concepts from written text, thereby fostering their conceptual development (see Tharp & Gallimore, 1988; Goldenberg, 1991, 1992/1993; Chapter 2 in this paper for discussions of the relationship between conceptual development and engagement in deep understanding of concepts). This informs us that IC, as used in the context of EFL WebQuest lessons, can serve as an effective, and hence viable, means for fostering the conceptual development of EFL students. This potential of IC provides a legitimate basis for using IC in EFL WebQuest lessons, and this is especially so given that EFL students, like ESL students, have traditionally been deprived of opportunities to engage in performing language learning tasks within their zones of proximal development, i.e., beyond their current conceptual developmental levels.
(Vygotsky, 1978; see Saunders & Goldenberg, 2007 for a discussion of ESL students’ lack of engagement in higher-level thinking activities). With regard to language development -- the other goal of IC -- results from the qualitative phase of the study showed that students’ enhanced, or deepened, understanding of content/concepts gained through IC led naturally to their improvements in the language components of overall writing quality, i.e., grammar and organization, thereby informing us that IC, as used in EFL WebQuest lessons, can serve as a legitimate, viable means for fostering not only the conceptual and but also the language development of EFL students. In the area of writing, the importance of grammar and organization as language components cannot be overemphasized, particularly because grammar and organization, along with content, have typically constituted the construct of writing ability since the process approach to writing emerged (see Harris, 1969; Hilcocks, 1986, 1987; Horowitz, 1986; Weigle, 2002).

Second, also in terms of theory, results from this study inform us that IC-supported WebQuests can serve as an effective and appropriate lesson format for task-based language teaching within the paradigm of sociocognitive CALL. In Chapter 2, I presented a view of a WebQuest as a lesson format for task-based language teaching within the sociocognitive CALL paradigm based upon a review of the theoretical literatures on CALL approaches, task-based language teaching, and the WebQuest model. The results of the quantitative phase of the study, which showed IC’s greater effectiveness than recitation and/or traditional, no post-reading instructional scaffold (i.e., independent reading) in overall WebQuest writing performance and in major areas of WebQuest writing performance suggest that IC-supported WebQuests can serve as an effective lesson format for task-based language teaching within the sociocognitive CALL
paradigm. The results also suggest that IC-supported WebQuests can serve as an appropriate (or compatible) lesson format for task-based language teaching within the sociocognitive CALL paradigm, particularly because IC, in contrast to recitation or independent reading, is in line with task-based language teaching by sharing a commonality with task-based language learning in its views of how language is used (e.g., meaning-focused as opposed to form-focused and dialogic/interactive as opposed to monologic) and how language learning takes place (e.g., incidental as opposed to intentional as in grammar exercises or recitation) (see, for a discussion, the section on performance on overall writing quality in this chapter). Furthermore, given that IC is also compatible with a WebQuest (as we saw in Chapter 2), it follows that IC, WebQuests, and task-based language teaching can go along well together within the sociocognitive CALL paradigm.

Third, in terms of practice, the results of this study inform EFL teachers of the need to consider using IC-supported WebQuests as a critical task-based language lesson format that serves to improve their students’ overall writing performance, as well as to promote their conceptual development, language development, and higher-order thinking. Particularly, the results of the quantitative phase of the study, which showed the IC group’s superior performance over the recitation and/or the control group in overall WebQuest writing performance, as well as in the areas of overall writing quality and content, suggest this point nicely.\(^{40}\) Aside from overall WebQuest writing performance, the IC group’s superior performance in the area of overall writing quality alone suggests the same point nicely because, as mentioned in a preceding paragraph and elsewhere, the

\(^{40}\) Higher-order thinking, a key feature of a WebQuest, is closely related to conceptual development, suggesting that a WebQuest and IC can go along with each other.
construct of writing ability has typically been defined as consisting of content, organization, and grammar, and all of these constituted overall writing quality in this study.

Fourth, and relatedly to the third, the results of this study inform EFL teachers about the potentially optimal anatomy of a task-based WebQuest language lesson by suggesting that IC can be utilized as a critically important pre-task activity which serves to scaffold EFL students’ performance of the main WebQuest writing task. As explicated in Chapter 2, in a task-based language lesson, teachers can use the “pre-task – during-task (i.e., (main) task) – post-task” framework in a variety of ways; that is, while the lesson format minimally consists of the during-task phase, it can also include either a pre-task or a post-task or both of these. In this study, the main task was to write an essay comparing and contrasting two artists’ work. Given this lesson structure, the results of this study inform EFL teachers that in a task-based EFL lesson, IC can be utilized as the most effective, hence a critically important, pre-task activity that serves to scaffold EFL students’ performance of the main task.

Limitations

This study reveals limitations in two distinct ways. One concerns the operational definition of overall WebQuest performance, and the other concerns the study’s provision of corroborating evidence for a category which constituted the single theme on performance on overall writing quality. Should there be any other limitations, I cordially invite the reader’s comments.

First, the construct of content was reflected twice in the operational definition of overall WebQuest writing performance, thereby resulting in the content variable carrying
more weight than the other variables in constituting the composite variable of overall WebQuest writing performance. As can be seen from the description of the operational definitions of the dependent variables for this study (see the section entitled “Instruments” in Chapter 3), content is included in the construct of overall writing quality (thus serving as one of the three criteria for holistic scoring on overall writing quality), while it also stands alone as a dependent variable. Although this did not result in content carrying double the weight of each of the other variables in constituting the composite variable of overall WebQuest writing performance, it certainly resulted in content carrying more weight than the other variables in constituting the composite variable.

Granting that this is certainly a limitation of this study, yet, the basis for including content twice in this study merits some explanation: In defining the construct of writing ability for the writing pretest and posttest, this study drew on both Bachman and Palmer’s (1996) model of communicative language ability and Skehan’s (1996, 1998) theory of linguistic ability and defined writing ability as consisting of (a) content, (b) organization, (c) grammar, (d) fluency, (e) syntactic complexity, and (f) lexical complexity (see the section on instruments in Chapter 3). The reason why I defined writing ability so broadly in this study by drawing on both of the theories was that on the one hand, many empirical studies on task-based language learning in the extant literature investigated fluency and syntactic/lexical complexities drawing on Skehan’s theory, which addresses fluency, complexity, and accuracy as aspects of language performance and that on the other hand, the communicative language testing paradigm, as Ellis (2003) indicated, fits well with task-based language assessment. Then, reflecting the tendency in the particular area of writing that many writing researchers have defined the construct of writing ability as
consisting of content, organization, and grammar since the emergence of the process approach to writing, I used the term “overall writing quality” as an umbrella term encompassing content, organization, and grammar; this was also in line with what most writing researchers did, as shown in the literature. Then, since this study investigated the effect of IC as compared to the effects of two other types of post-reading instructional scaffold, I needed to tease out content as a separate dependent variable to investigate whether deeper understanding of content as asserted by IC theorists is actually promoted more effectively by IC than by the two other types of scaffold, thereby lending support to (or rejecting) IC’s alleged goal of conceptual development. This explains why content had to stand alone as a dependent variable in addition to being included in overall writing quality, thus carrying more weight than the other variables in constituting the composite variable of overall WebQuest writing performance. This, however, certainly represents a limitation of this study.

Second, while corroborating evidence was provided for the interview participants’ report on IC’s facilitation of understanding of content, which constituted one of the two common categories for the single theme on overall writing quality, corroborating evidence could not be provided for what they reported about the positive influence of IC’s facilitation of content understanding on improving other components of overall writing quality, i.e., organization and grammar (see the section entitled “Themes on Performance on Overall Writing Quality” in Chapter 4). The nature of the statement in this particular report made it impossible for the analysis of the online IC discussion texts to provide corroborating evidence for what the interview participants stated. Should confirming evidence be given for what the three interview participants said about the
positive influence of IC’s facilitation of content understanding on improving those two other components of overall writing quality, the bold-faced segments in Excerpt 16, among others, along with that evidence, would strongly support the larger theme, i.e., “IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality.” This would require another investigation, e.g., an investigation involving an analysis of IC students’ writings or, more desirably, a comparative analysis of IC, recitation, and control students’ writings. This was out of the scope of this study, however. I will address these alternative investigations as recommended future studies in the next section.

Recommendations for Future Research

In this section, I will present five possible future studies. Some of these could well have been incorporated into this current study, but, as will be indicated, they could not be done so because they were out of the scope of this study. I will allocate a paragraph for each of the five recommended future studies.

First, an experimental study of the relative effects of the ETR (experience-text-relationship) and CTA (concept-text-application) approaches to IC on EFL/ESL learners’ WebQuest writing performance or general task-based writing performance involving students’ use of source texts would provide the ESOL community with useful information concerning the issue of choice between the two text-based instructional approaches to IC (see Tharp & Gallimore, 1988). Although it has been claimed by IC theorists and scholars (e.g., Wong & Au, 1985; Tharp & Gallimore, 1988) that in contrast to ETR, which can appropriately be used for comprehension of narrative texts, CAT is better suited to comprehension of expository texts, there has been no experimental...
validation to date. Results from such an experimental study would shed light on the issue of choice between the two IC approaches that involves talk about “text” (see Tharp & Gallimore, 1988 for other IC approaches for children under the age of literacy).

Second, studying the relative effects of types of post-reading instructional scaffolds on the “task-relevant” fluency, syntactic complexity, and lexical complexity of ESOL students’ WebQuest writings or task-based writings involving use of source texts would prove to be informative to the ESOL community. By “task-relevant” fluency and syntactic/lexical complexities of writings, I mean fluency and syntactic/lexical complexities of student writings as the writings address content that is required by the task at hand. The need for such a study stems from the results of this study concerning performance on content and performance on fluency, syntactic complexity, and lexical complexity. The results suggested that IC students, although, as the study’s result on performance content suggested, they presented task-relevant content in their essays as compared to the other two groups, they were still considered to be only as good as the other two groups in performance on fluency, syntactic complexity, and lexical complexity because the mean scores on these three variables were found to be equal across the three groups. Given that what counts in task-based lessons involving a writing task that requires use of source texts is students’ demonstration of content- or task-relevant writing -- or to borrow Leki and Carson’s (1987) term, text-responsible writing - - an investigation of task-relevant fluency, syntactic complexity, and lexical complexity of ESOL students’ writings would provide “meaningful” information about students’ performance on these variables. Perhaps portions of student writings that are relevant to
the given task in terms of content could be scored to investigate the relative effects of
types of post-reading instructional scaffolds on these variables.

Third, a study investigating the correlations between ESOL learners’ content
knowledge and the organization of their WebQuest writings completed in IC-supported
WebQuest lessons and between their content knowledge and the grammar of their
WebQuest writings completed in IC-supported WebQuest lessons would also merit
consideration. Results from such a study would shed light on what the interview
participants in this study reported about the positive, natural influence of IC’s facilitation
of content understanding on improving the organization and grammar of their WebQuest
writings. What needs to be noted in relation to measuring content knowledge is that the
researcher of such a study would need to use an instrument designed to measure deep
understanding (or deep knowledge) of the content concerned rather than lower-level
understanding of the content, because IC is designed to promote deep understanding of
content and what our interview participants reported also concerns IC’s facilitation of
understanding of content at the deep level. To this end, the instrument that Langer (1984)
used in assessing students’ topic-specific content knowledge could appropriately be used,
since it includes measures of “high” levels of content knowledge (see Chapter 2 for a
brief description of Langer’s study).

Fourth, and in relation to one of the limitations of this study presented in the
preceding section, a study involving an analysis of IC students’ writings, or more
desirably, a comparative analysis of IC, recitation, and independent-reading students’
 writings would need to be conducted in the future in order to reveal the relationships
between content and organization and between content and grammar in ESOL students’
writings. As indicated in the preceding section, in this study, while corroborating evidence was provided for the interview participants’ report on IC’s facilitation of understanding of content, which constituted one of the two common categories for the single theme on overall writing quality, corroborating evidence could not be provided for what they reported about the positive influence of IC’s facilitation of content understanding on improving other components of overall writing quality, i.e., organization and grammar. This was because the nature of the statement in this particular report made it impossible for the analysis of the online IC discussion texts to provide corroborating evidence for what the interview participants stated. Should confirming evidence be provided for what the three interview participants said about the positive influence of IC’s facilitation of content understanding on improving those two other components of overall writing quality, results from the analysis of online IC discussion texts conducted in this study, along with that evidence, would strongly support the larger theme, i.e., “IC’s facilitation of understanding of content, along with the resulting improvement in other components of overall writing quality.” Therefore, if a study involving an analysis of IC students’ writings, or more desirably, a comparative analysis of IC, recitation, and independent-reading students’ writings is conducted as a follow-up to this study, results from that study will serve to strongly support the single theme on overall writing quality identified in this study by corroborating what the interview participants reported about the positive influence of IC’s facilitation of content understanding on improving the language components of organization and grammar in their WebQuest writings.
Fifth, and finally, a study involving a comparative analysis of online IC and online recitation texts, whether it is conducted as a follow-up to an experimental study or as an original study, would serve to strengthen the qualitative findings from this study. Especially if such a study is conducted as a follow-up to an experiment which has revealed the online IC group’s superior performance over the online recitation group, an analysis of texts from the recitation sessions, as it is conducted as part of the comparative analysis, would provide disconfirming evidence for the finding. This present study could have employed this type of analysis, but it did not do so because it was out of the scope of the study.

Summary and Concluding Remarks

Chapter Summary

In this chapter, I presented a discussion of the study’s results. Beginning with the quantitative phase, I presented interpretations of the results for each of the two phases of the study, i.e., quantitative and qualitative. This was followed by a presentation of an integrated interpretation of the quantitative and qualitative results. I then discussed the study’s implications and its limitations, respectively. Finally, I recommended a number of future studies for the research community.

For the quantitative phase of the study, I first interpreted its results, showing the IC group’s superior performance in overall writing quality, content, and overall WebQuest writing, in relation to the research hypotheses presented earlier in Chapters 1 and 3. I then tied the results to the theoretical and empirical literature reviewed in Chapter 2, during which I indicated that the results lend support to IC theorists’ theoretical assertion that IC is the critical form of assisting performance through the ZPD, as well as IC’s
theoretical proposition that IC promotes learners’ deep understanding of concepts represented in written texts. With regard to the non-significant differences found in the areas of fluency, syntactic complexity, and lexical complexity, I addressed the importance of task-relevant performance in these areas by presenting a combined interpretation of the results on content and on these three areas and by citing Leki and Carson’s (1987) work which addressed the importance of text-responsible writing in EAP courses. This was followed by a comparison of the study’s results with those from other empirical studies in the literature.

For the qualitative phase of the study, I interpreted its results on the three areas of overall writing quality, content, and overall WebQuest writing under each of the theme names yielded through the cross-case analysis, following the within-case analysis. The interpretation was made largely in relation to the theoretical literature on IC. For the area of overall writing quality, I also tied the results to prior empirical studies to show that the interview participants’ reports on overall writing quality were consistent with results from those studies. The interpretation of the qualitative results, as had been foreshadowed prior to the presentation of the interpretation, served as a basis for answering the mixed methods question in the next section.

In the following section, I integrated findings from the quantitative and qualitative phases to interpret the results in terms of the mixed methods question, i.e., “In what way do qualitative data help to explain the quantitative results?” Based upon the interpretation of the qualitative results presented in the preceding section, I presented an integrated interpretation of the quantitative and qualitative results by each area of performance, in the context of which the mixed methods question was answered. As for
the two themes for overall WebQuest writing performance, i.e., the structure/sequence of IC and thematic focus, which coincided with the two themes for performance on content, I reproduced what I had presented earlier in relation to these themes in the subsection on content, with an important modification made to the reproduced text. This modification, as explained in some detail there, was intended to reflect the interpretation that the aspects of IC represented by the two themes assisted the IC students in their performance on content and consequently in their overall WebQuest writing performance.

Following this, I discussed implications of the study’s results in both theoretical and practical terms. This was followed by a presentation of the study’s limitations. Finally, I recommended five studies for future research, of which two were experimental, one was correlational, and the other two were qualitative studies.

_A Brief Summary of the Study_

The purpose of this mixed methods study was to investigate the effects of types of post-reading instructional scaffolds on university-level EFL learners’ WebQuest writing performance, as well as to identify aspects and features of IC and IC discourse that might have assisted the learners in their WebQuest writing performance. Using an explanatory sequential design, the first, quantitative phase of the study investigated the effects of three post-reading instructional scaffolds, as provided in EFL WebQuest lessons: (a) online IC, (b) online recitation, and (c) no post-reading instructional scaffold. The second, qualitative phase was conducted as a follow-up to the quantitative phase to help explain the quantitative results. Results from the quantitative phase of the study showed that the online IC group outperformed one or both of the other two groups in overall WebQuest writing performance and in the specific areas of overall writing quality and
content. An analysis of qualitative interview data revealed a number of themes that helped to explain the quantitative results. Common themes identified through a cross-case analysis of the interview data were corroborated by an analysis of online IC discussion texts.

These results have implications for both theory and practice. In terms of theory, results from the study inform us that IC, as used in EFL WebQuest lessons, can serve as a legitimate, viable means for fostering both the conceptual and the language development of EFL students through the ZPD and that IC-supported WebQuests can serve as an effective and appropriate lesson format for task-based language learning within the paradigm of sociocognitive CALL. In terms of practice, the results inform EFL teachers of the need to consider using IC-supported WebQuests as a critical task-based language lesson format that serves to improve their students’ overall writing performance, as well as to promote their conceptual development, language development, and higher-order thinking. The results also inform EFL teachers that IC can be utilized in task-based language lessons as a critically important pre-task activity which serves to scaffold EFL students’ performance of the main WebQuest writing task.

Concluding Remarks

This mixed methods study investigated the effects of types of post-reading instructional scaffolds on university-level EFL learners’ WebQuest writing performance, as well as examined aspects and features of IC and IC discourse that might have assisted the learners in their WebQuest writing performance. The results of this study add to the existing body of knowledge on IC by shedding light on IC’s role in promoting both the conceptual and the language development of EFL students. The results also add to the
body of knowledge in the extant literatures on CALL and task-based language teaching by suggesting that IC-supported WebQuests can serve as an effective and appropriate lesson format for task-based language teaching within the paradigm of sociocognitive CALL. In terms of practice, the results suggest that IC-supported WebQuests can be used effectively as a task-based language lesson format that serves to improve EFL students’ overall writing performance, as well as to promote their conceptual development, language development, and higher-order thinking.

As the reader may remember, I devoted the first paragraph of this research report to addressing the importance of language teachers’ principled use of technology based upon theoretically sound frameworks drawn from the literature. I began the paragraph by stating that “[a]mid current proliferation of technology in the language classroom, it seems imperative for teachers of a foreign or second language to pursue principled use of technology based upon theoretically sound frameworks drawn from the literature on language learning and teaching in general and on computer-assisted language learning (CALL) in particular, as well as some pertinent literature on education more broadly.” I then added that this seems to be an important issue for language teachers because adequate provision of assistance in students’ learning of the target language becomes possible only when teachers use technology based upon sound theoretical principles drawn from the literature. As can be seen, the theoretical and practical implications of this study described in this chapter (i.e., Chapter 5) are essentially geared toward what is addressed by these statements. I hope that this theory-based empirical study of use of technologies in the context of language teaching and learning has provided a useful insight for foreign and second language teachers.
References


Appendix A

IC Scale

ELEMENTS OF THE INSTRUCTIONAL CONVERSATION
CONVERSATIONALELEMENTS

1. A challenging but non-threatening atmosphere (ZOPD)

The teacher successfully creates a "zone of proximal development." That is, the teacher creates a challenging yet positive affective atmosphere where students feel comfortable to contribute and participate and where risky, speculative answers are acceptable. Although the teacher is the "more competent other," evaluation of student answers and talk is not the guiding feature of the discourse, and the goal of the lessons is not to evaluate the correctness of answers to "known-answer" questions. The teacher is more a collaborator in the discussion than an authoritative evaluator and creates an atmosphere that challenges and allows students to negotiate the meaning of the text and generate emerging hypotheses about the possible multiple meanings that may be constructed from the text.

SCORING CRITERIA

(0) The role of students appears to be confined to supplying answers for teacher evaluation, and the affective tone of the lessons is "school-like." Students rarely or never venture emerging or incomplete hypotheses about the text or come up with text-related ideas of their own in the absence of a direct cue or a teacher question. The tone or climate is primarily evaluative, and students appear to be reticent to venture answers that may not be "correct." There are no instances of meaning negotiation or alternative interpretations of the text.

(1) Although the tone of the lesson is mostly school-like and often evaluative, it is sufficiently non-threatening that students occasionally venture speculative answers, which the teacher rejects, doesn’t use, or censures.

(2) The teacher promotes a non-threatening yet challenging atmosphere where students feel free to venture emerging or incomplete hypotheses, which the teacher uses to build upon the theme. The students appear to be comfortable being actively engaged in trying to understand the text and often come up with text-related ideas of their own in the absence of a direct cue or question. There are instances of meaning negotiation and possible alternative interpretations, which the teacher reinforces and uses to build upon the overall goal of the lesson.

2. Responsivity to student contributions

The teacher’s response to student contributions to the discussion is based on a constantly
updated understanding of students’ background knowledge and current level of understanding with respect to the text. While having an initial plan and maintaining the focus and coherence of the discussion, the teacher is responsive to unanticipated opportunities provided by students. Moreover, the teacher’s response to student statements recasts and expands upon the students’ efforts without rejecting what they have accomplished on their own. Student contributions are used to extend the discussion or to explore new but relevant themes. The teacher must understand the text well and listen to students carefully to decide how best to take advantage of unanticipated opportunities they provide.

SCORING CRITERIA

(0) Students are rarely observed to make unanticipated or unsolicited contributions relevant to the discussion, or if they do, these are ignored or rejected by the teacher. Moreover, teacher questioning is scripted, inflexible, and mostly involves literal recall.

(1) Students occasionally make unanticipated or unsolicited contributions, which the teacher recognizes but does not build upon to further their understanding of the text. Although much of the questioning is scripted and inflexible, there is occasional evidence of questioning that is responsive to students.

(2) The teacher recognizes and builds upon students’ contributions to further their understanding of the text in a way that is consistent with and related to the overall theme and goal of the lesson. Moreover, teacher questions are responsive to students’ current level of understanding.

3. Promotion of discussion

While the teacher might pose some factual questions to establish a basic, literal comprehension of key elements of the text, much of the discussion will center on questions and answers that are less "black and white," that is, for which there might be more than one correct answer.

SCORING CRITERIA

(0) The teacher relies mainly on literal level recall and known-answer questions.

(1) The teacher’s use of literal level recall questions is mixed with some discussion-generating questions

(2) There is a predominance of discussion-generating questions around the theme of the story.

4. Connected discourse

The discussion is characterized by multiple, interactive, connected turns, where
succeeding utterances by teachers and students build upon and extend previous ones. Although the discourse is like that found in everyday conversational settings, the discussion is guided by the teachers thematic focus and curricular goals, which are evident throughout all phases of the lesson.

**SCORING CRITERIA**

(0) The discourse is characterized by unconnected questioning sequences or extended monologues, and there is an absence of talk on the same topic over several sums. The topics frequently shift after every question-answer sequence.

(1) Although there is some evidence of connected discourse, it is infrequent or is not well connected to the theme or overall goal of comprehending the text.

(2) The lesson is characterized by multiple, interactive, connected turns that build upon previous ones. Moreover, this topic cohesion is closely related to the theme or goal of understanding the text.

5. General participation, Including self-selected turns

All students are encouraged to participate, and the teacher uses a variety of strategies to arrange for participation by all. At the same time, the teacher does not hold exclusive right to determine who talks, and students are encouraged to volunteer or otherwise influence the selection of speaking turns as is characteristic of natural conversational settings.

**SCORING CRITERIA**

(0) The discussion and interaction are characterized by teacher-controlled speaking turns and a predominance of teacher talk.

(1) There are occasional instances of broad participation in the discussion, but overall the teacher controls the speaking turns and participation or otherwise inhibits a more natural participatory structure.

(2) Speaking turns are relatively equal with constant sum-taking among partners. No individual dominates the conversation, and the broad participation is characterized by democratic or self-selected speaking turns.

**INSTRUCTIONAL ELEMENTS**

6. Thematic focus

The teacher selects a theme or idea based on the text being used, to serve as a starting point for focusing the discussion. The theme or idea is appropriate for the text and worthwhile, and the teacher feels it will be meaningful for the students. The teacher has
a general plan for how the theme will unfold and has decided on a strategy for "chunking" the reading of the text to permit optimal exploration of the theme.

SCORING CRITERIA

(0) The teacher appears not to have a clear goal in conducting the lesson, and there is no obvious theme that ties together the discussion and questions.

(1) Although the teacher has a goal or theme guiding the lesson, it is not clearly connected to comprehending the text, or it may be evident at one phase of the lesson but not throughout.

(2) The entire lesson is goal driven and thematic. The theme is relevant to the text and is used to tie together questions and discussion throughout.

7. Activation and use of background knowledge and relevant schemata

Before focusing on the text, the teacher investigates and tries to "hook into" student background knowledge pertinent to the development of story theme(s). The teacher activates relevant schemata in the students’ minds to assist them in the comprehension of text. The teacher also assesses whether students have requisite background knowledge to comprehend the text. Relevant background knowledge and pertinent schemata are then woven into the text-based discussion that follows.

SCORING CRITERIA

(0) The teacher does not focus on students’ prior knowledge or relevant schemata, but begins immediately with the text or other unrelated activity.

(1) The teacher begins to explore students’ background knowledge, but does so randomly or does not discriminate which aspects will build upon the text or relevant theme. Alternatively, if background knowledge is activated, it is not brought to bear in comprehending the text in later phases of the lesson.

(2) The teacher makes a special effort to investigate and activate background knowledge as a "hook" into the story before beginning to read the text. Moreover, the teacher supplies relevant prior knowledge as necessary and helps tie the students’ emerging understandings of the text to this prior knowledge throughout the lesson.

8. Direct teaching

When necessary, the teacher provides direct teaching of a skill or concept. This is done not with the intent of teaching decontextualized skills, but within the context of, and directly related to, understanding the larger lesson. Instead of fishing for a known-answer response or having students guess what the teacher is thinking, the teacher moves the discussion forward by providing information or direct teaching when needed.
The teacher is also skilled at knowing when direct instruction is not needed.

**SCORING CRITERIA**

(0) The teacher provides instruction out of context and in an inflexible, predefined sequence unrelated to promoting understanding or does not provide such teaching when needed to move the lesson forward.

(1) The teacher provides teaching of a skill or concept where needed, but does so excessively, or the teaching is not related to promoting the larger goal or theme of the story. Alternatively, the teaching is sometimes, but not consistently, provided as needed.

(2) The teacher provides instruction in context and in the service of assisting understanding and does not provide it when it is not necessary.

**9. Promoting more complex language and expression**

The teacher stretches students’ performance by promoting and eliciting more extended and complex language and expression. The teacher uses a variety of elicitation techniques, such as questions, restatements, pauses (increased "wait time"), and invitations to expand (e.g., "Tell me more about that"). Questions and other elicitation techniques are also used to model more complex language and expression. The teacher is efficient and strategic in his or her talk, saying enough to move the discussion along, but not so much as to inhibit student talk or dominate the discussion or veer from the overall goal of comprehending the text.

**SCORING CRITERIA**

(0) The lesson is characterized by brief and unconnected IRE sequences or a predominance of yes/no questions. Moreover, students are not challenged to elaborate on their understanding of the text, and the teacher is not observed to use modeling or other devices to promote more complete expression and language.

(1) The lesson is characterized by sporadic instances where the teacher attempts to elicit more complex thinking and language, but students are not consistently pushed to produce more complete language and expression.

(2) The lesson is characterized by the teacher’s use of a variety of techniques to promote more complex thinking and language development. The teacher’s talk is consistently designed to promote and elicit ever increasing levels of linguistic expression and more elaborate verbalization of current understanding of the text.

**10. Promoting bases for statements, hypotheses, and conclusions**

The teacher promotes students’ use of text, pictures, and reasoning to support an argument, a position, or emerging hypotheses and conclusions. While speculative
answers are acceptable, the teacher moves studentstoward basing answers, arguments, and positions on evidence, reasoning, and careful consideration of alternatives. The teacher questions students regarding the basis for their statements. Examples include "How do you know?", 'What makes you think that?”, and even 'Why?'".

SCORING CRITERIA

(0) The teacher routinely accepts answers as right or wrong only and/or does not give consideration to how the student arrived at an answer. Moreover, the teacher rarely or never challenges students to defend tentative responses.

(1) Students are occasionally but not regularly encouraged to explain or defend the basis for their contributions to the discussion.

(2) Students are systematically and regularly encouraged to explain and defend their statements, emerging hypotheses, and conclusions.

SCORING SHEET IC RATING SCALE

Tape: ____________________________________________ ___________ Total Score:
Rater: ____________________________________________
Date: ________________

Creating a Challenging but Non-threatening Atmosphere

(ZOPD)

0.................................1.................................2

The climate of the lesson is primarily non-challenging (doesn’t push understanding), unstimulating, or intimidating. The climate of the lesson is primarily challenging (consistently pushes understanding), stimulating, and non-threatening.
Responsivity to Student Contributions

0……………………………1…………………………2

The teacher’s talk is rarely or never responsive to students’ initiations, contributions, or current level of understanding.  
The teacher’s talk is frequently or always responsive to students’ initiations, contributions, or current level of understanding.

Promotion of Discussion

0……………………………1…………………………2

The teacher relies mainly on literal level recall and known-answer questions, and rarely or never uses thematic, discussion-generating questions.  
The teacher rarely uses literal level recall and known-answer questions, but frequently uses thematic, discussion generating questions.

Use of Connected Discourse

0……………………………1…………………………2

There is a complete or almost complete absence of connected discourse related to the theme of the story.  
The lesson is always or almost always characterized by connected discourse related to the theme of the story.
General Participation

0.........................1..............................2

The discourse is teacher-controlled and participation is teacher-dominated. The control of the discourse is shared between teacher and students, and participation is widespread.

Text-Related Thematic Focus

0.........................1..............................2

No or minimal evidence of a text-connected goal or theme. Overwhelming evidence of a text-connected goal or theme.

Focus on Background Knowledge and Relevant Schemata

0.........................1..............................2

No or minimal attempts to assess, activate, supply, or make use of relevant background knowledge. Consistent, systematic attempts to assess, activate, supply, or make use of background knowledge.
Direct Teaching

0…………………………1…………………………2

Direct teaching is provided out of the context of the story, is inflexible, excessive, or not given when needed.

Promoting Complex Language and Expression

0…………………………1…………………………2

There are few or no instances in which the teacher either elicits or models elaboration of the language used in the lesson.

Promoting Bases for Statements, Hypotheses, and Conclusions

0…………………………1…………………………2

The teacher rarely or never elicits the reasoning behind, or defense of, students’ statements, hypotheses, and conclusions.

The teacher frequently elicits students’ reasoning and defense of statements, hypotheses, and conclusions.
### SUMMARY SCORE SHEET

Tape: ____________________________________________ Total Score: 
Rater: ____________________________ 
Date: 

<table>
<thead>
<tr>
<th>IC Elements</th>
<th>Comments</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Challenging but Non-threatening Atmosphere (ZOPD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Responsivity to Student Contributions</td>
<td></td>
<td></td>
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<tr>
<td>3. Promotion of Discussion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Use of Connected Discourse</td>
<td></td>
<td></td>
</tr>
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<td>5. General Participation</td>
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</tr>
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<td>6. Text-Related Thematic Focus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Background Knowledge and Schemata</td>
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<td></td>
</tr>
<tr>
<td>8. Direct Teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Promoting Complex Language/Expression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Promoting Bases for Statements, Hypotheses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL
Appendix B

Researcher-Developed Scale for Assessing Implementation Fidelity for the Online IC Treatment

SCORING SHEET

Total Score: _____________
Rater: ____________________________
Date: _____________________________

1. Activation of background knowledge and relevant schemata

Before students read the text (i.e., WebQuest reading materials), did the teacher either “hook into,” or provide students with, background knowledge pertinent to the development of the selected theme of “characteristics of Monet’s and Cezanne’s work” and activate relevant schemata necessary for understanding the text in students’ minds?

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<th>1</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>did not do it</td>
<td>did so moderately</td>
<td>did so completely</td>
</tr>
<tr>
<td>at all</td>
<td></td>
<td>or nearly completely</td>
</tr>
</tbody>
</table>

2. Establishing the main ideas and/or important details of the text, capitalizing on opportunities to initiate discussion on the theme

After students read the text, did the teacher establish the main ideas and/or important details of the text, capitalizing on opportunities to initiate discussion on the theme?

<table>
<thead>
<tr>
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<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>did not do it</td>
<td>did so moderately</td>
<td>did so completely</td>
</tr>
<tr>
<td>at all</td>
<td></td>
<td>or nearly completely</td>
</tr>
</tbody>
</table>

3. Focus on the theme

After introducing/establishing the theme, i.e., characteristics of Monet’s and Cezanne’s work, did the teacher focus on the theme throughout the talk during the post-reading IC session, trying to build a deeper understanding of the theme gradually?

<table>
<thead>
<tr>
<th>0</th>
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<th>2</th>
</tr>
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</tr>
<tr>
<td>at all</td>
<td></td>
<td>or nearly completely</td>
</tr>
</tbody>
</table>
4. Relating the theme to the text

After the theme was introduced/established, did the teacher relate the theme to the text whenever possible during the talk?

0 ........................................1........................................2
did not do it did so moderately did so completely
at all did so moderately or nearly completely

______________________________
SUMMARY SCORE SHEET

Total Score: _________________________
Average Score: _______________________
Rater: ______________________________
Date: ______________________________

Elements of Assessment Comments Score
1. Activation of background knowledge and relevant schemata
2. Establishing the main ideas and/or important details of the text
3. Focus on the theme
4. Relating the theme to the text

TOTAL:

AVERAGE:
Appendix C

Researcher-Developed Scale for Assessing Implementation Fidelity for the Online Recitation Treatment

SCORING SHEET

Total Score: _____________
Rater: ____________________________
Date: _____________________________

1. Asking known-answer questions

Did the teacher repeatedly ask questions to which he already knows the answers that required the students to display their mastery of the factual, literal details of the text (i.e., WebQuest reading materials)?

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<thead>
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<th>Score</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>1</td>
<td>did so moderately</td>
</tr>
<tr>
<td>2</td>
<td>did so completely or nearly completely</td>
</tr>
</tbody>
</table>

2. Consistent provisions of an evaluative remark or no remark in response to students’ answers

In response to the students’ answers to these known-answer questions, did the teacher consistently either provide an evaluative remark (such as Good, Right, or any other evaluative remark that is typically short in length) or provide no remark at all?

<table>
<thead>
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<th>Score</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>did not do it at all</td>
</tr>
<tr>
<td>1</td>
<td>did so moderately</td>
</tr>
<tr>
<td>2</td>
<td>did so completely or nearly completely</td>
</tr>
</tbody>
</table>

SUMMARY SCORE SHEET

Total Score: _________________________
Average Score: _______________________

336
<table>
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<th>Elements of Assessment</th>
<th>Comments</th>
<th>Score</th>
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</tr>
<tr>
<td>2. Consistent provisions of an evaluative remark or no remark in response to students’ answers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL:**

**AVERAGE:**
Appendix D

Researcher-Developed Scale for Assessing Implementation Fidelity for the Control Treatment

SCORING SHEET

Total Score: _____________
Rater: ____________________________
Date: _____________________________

1. Giving clear instructions about the reading time

Before students began to read the text (i.e., WebQuest reading materials), did the teacher clearly instruct students to read the text for 50 minutes?

0 ..............................1 ..............................2
Gave no instructions gave instructions, but gave clear instructions  
the instructions were not clear

2. Continuing to read the text for the same amount of treatment time for the other two groups

Following the 20-minute reading time allotted commonly to the three treatment groups, did students in the control group continue to read the text for another 30 minutes, i.e., for the same amount of time that the online IC and online recitation groups spent in receiving their treatments?

0 ..............................1 ..............................2
did not do so did so but somewhat incompletely did so completely  
(e.g., did not abide by the total reading time of 50 minutes)

__________________________________________

SUMMARY SCORE SHEET
<table>
<thead>
<tr>
<th>Elements of Assessment</th>
<th>Comments</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Giving clear instructions about the reading time</td>
<td></td>
<td></td>
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<tr>
<td>2. Continuing to read the text for the same amount of treatment time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for the other two groups</td>
<td></td>
<td></td>
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</tbody>
</table>

**TOTAL:**

**AVERAGE:**
Appendix E

Writing Posttest (Time: 40 minutes)

Based upon the WebQuest readings about Monet and Cezanne that you completed in today’s class, write an essay comparing and contrasting the work of the two artists. Focus on some aspects and/or characteristics of their work for the comparison and contrast. While you may well address some similarities in their work, try to address “differences” in their work as much as possible. Remember that you must compare and contrast the “work” of the two artists, not the artists themselves.

You will be evaluated on the overall quality (content, organization, and grammar as a whole), length, syntactic complexity (i.e., structural complexity of sentences), lexical complexity (i.e., use of a variety of words), and content of your writing. Use the additional sheets provided to you.

Before you begin to write, you may use this space to organize your thoughts.

Start to write your essay on the next page.
Appendix F

Writing Pretest (Time: 40 minutes)

Based upon the readings about Van Gogh and Gauguin, write an essay comparing and contrasting the work of the two artists. Focus on some aspects and/or characteristics of their work for the comparison and contrast. While you may well address some similarities in their work, try to address “differences” in their work as much as possible. Remember that you will be comparing and contrasting the “work” of the two artists, not the artists themselves.

You will be evaluated on the overall quality (content, organization, and grammar as a whole), length, syntactic complexity (i.e., structural complexity of sentences), lexical complexity (i.e., use of a variety of words), and content of your writing. Use the additional sheets provided to you.

Before you begin to write, you may use this space to organize your thoughts.

Start to write your essay on the next page.
Appendix G

Holistic Scoring Rubric for Evaluation of Overall Writing Quality

A. Criteria to be used for holistic scoring: content, organization, and grammatical accuracy

B. Operational definitions of criteria:

• Content: evidence of understanding of content from the source texts, as demonstrated in the context of performing the compare-and-contrast essay writing task. Content consists of details, concepts, ideas, and their relationships. Content will be evaluated in terms of its accuracy, thoroughness, and completeness.

• Organization: evidence of an appropriate organization of information/content, as demonstrated in the context of performing the compare-and-contrast essay writing task. Organization refers to the structure or plan of development and the relationship of one point to another; it serves to signal both the relationship of the supporting ideas to the main ideas, theme, or unifying point and the connections or transitions between and among sentences or ideas.

• Grammatical accuracy: evidence of accurate use of syntactic structures and vocabulary items.

6 Level: Very Good

An essay at this level

• demonstrates the writer’s excellent understanding of content from the sources texts in the context of performing a compare-and-contrast essay writing task; the content is accurate, complete, and thorough.
• is very well organized; ideas are very well developed and connections and transitions between and among sentences or ideas are very well demonstrated.
• demonstrates an excellent control of syntax and vocabulary in terms of accuracy.

5 Level: Good

An essay at this level

• demonstrates the writer’s good understanding of content from the source texts; the content is generally accurate, complete, and accurate.
• is generally well organized; ideas are generally well developed and connections and transitions between and among sentences or ideas are generally well demonstrated.
• demonstrates a good control of syntax and vocabulary in terms of accuracy.
4 Level: Moderate

An easy at this level

• demonstrates the writer’s adequate understanding of content from the source texts; the content is accurate, complete, and thorough to an adequate, acceptable degree
• is adequately organized; ideas are adequately developed and connections and transitions between and among sentences or ideas are adequately demonstrated.
• demonstrates an adequate control of syntax and vocabulary in terms of accuracy.

3 Level: Below Moderate/Above Poor

An easy at this level

• demonstrates the writer’s above poor but below adequate understanding of content from the source texts; thus, the content exhibits an above poor but below adequate level of accuracy, completeness, and thoroughness.
• is not adequately organized; ideas are not adequately developed and connections and transitions between and among sentences or ideas are not adequately demonstrated.
• demonstrates a below adequate but above poor control of syntax and vocabulary in terms of accuracy.

2 Level: Poor

An easy at this level

• demonstrates the writer’s poor understanding of content from the source texts; the content exhibits a poor degree of accuracy, completeness, and thoroughness.
• is poorly organized; ideas are poorly developed and connections and transitions between and among sentences or ideas are poorly demonstrated.
• demonstrates a poor control of syntax and vocabulary in terms of accuracy.

1 Level: Minimal/None

An essay at this level

• exhibits such a minimal level of evidence for content, grammar, and organization as to make it difficult for raters to score the work holistically based upon the criteria.
• or contains no response, merely copies the topic presented in the prompt, is written in a language other than English, or consists of illegible characters.

Note: In developing this rubric, I referred to a number of reliable sources. In brief, this rubric is an outcome of a synthesis and a subsequent adaptation of the exemplary rubrics
from these different sources. In writing the scale descriptors, I made use of both Bachman and Palmer’s (1996) method of specifying levels and the verbal description method as adopted in the TOEFL writing scoring rubric. The reason for combining these two methods in developing this rubric was that use of this kind of rubric in this study was likely to result in a higher level of inter-rater and intra-rater reliability than use of either of the other two types of rubrics. By incorporating level specifications into verbal descriptions, not only the distinctions between and among the levels but also the progression along the line of levels has became clearer; I also established a center point on the scale by setting both Minimal and None at the score point of 1 and then setting the level of “Moderate” at the point of 4. I believe that use of this rubric will enhance intra- and interrater reliability of scoring in this study.

In developing the titles of levels and the verbal descriptions, however, I did not follow either Bachman and Palmer’s (1996) level titles or the verbal descriptions in the TOEFL writing scoring rubric. I needed a six-point scale because the majority of the studies that investigated overall writing quality used a six-point scale; Bachman and Palmer’s scale, however, had five points including zero. The TOEFL writing scoring rubric, on the other hand, was not designed specifically for use in EAP courses, where content is important and students often use source texts for writing. Therefore, I first developed the operational definitions of content, organization, and grammar that serve the purposes of this particular study and then subsequently developed the above rubric that exactly reflects the operational definitions of the criteria. In defining content, I paid particular attention to Goldenberg’s (1991, 1992/1993) conceptualization of content as understandings of not just details but also complex concepts and ideas (see Chapter 2), as well as to Weigle’s (2002) emphasis on the importance of the accuracy, thoroughness, and completeness of content in academic writing in EAP courses.
Appendix H

Scoring Rubric for Evaluation of Content

• Operational definition of content: evidence of understanding of content from the source texts, as demonstrated in the context of performing the compare-and-contrast essay writing task. Content consists of details, concepts, ideas, and their relationships. Content will be evaluated in terms of its accuracy, thoroughness, and completeness.

6 Level: Very Good

An essay at this level

• demonstrates the writer’s excellent understanding of content from the sources texts; the content is accurate, complete, and thorough in the context of compare-and-contrast essay writing involving use of content from the source texts.

5 Level: Good

An essay at this level

• demonstrates the writer’s good understanding of content from the source texts; the content is generally accurate, complete, and accurate in the context of compare-and-contrast essay writing involving use of content from the source texts.

4 Level: Moderate

An essay at this level

• demonstrates the writer’s adequate understanding of content from the source texts; the content is accurate, complete, and thorough to an adequate, acceptable degree in the context of compare-and-contrast essay writing involving use of content from the source texts.

3 Level: Below Moderate/Above Poor

An essay at this level

• demonstrates the writer’s above poor but below adequate understanding of content from the source texts; thus, the content exhibits an above poor but below adequate level of accuracy, completeness, and thoroughness in the context of compare-and-contrast essay writing involving use of content from the source texts.
2 Level: Poor

An easy at this level

- demonstrates the writer’s poor understanding of content from the source texts; the content exhibits a poor degree of accuracy, completeness, and thoroughness in the context of compare-and-contrast essay writing involving use of content from the source texts.

1 Level: Minimal/None

An essay at this level

- exhibits such a minimal level of evidence for content as to make it difficult for raters to score the work based upon the criterion.

- or contains no response, merely copies the topic presented in the prompt, is written in a language other than English, or consists of illegible characters.
Appendix I

Interview Protocol

Time of Interview:
Date:
Interviewee’s Name:

Questions:

● Introductory Remarks and the General Question

First of all, I congratulate you on being one of the most successful WebQuest learners. You have been chosen to participate in this interview because, of all the students who participated in the IC sessions, you achieved the most remarkable improvement in writing.

Question 1: Now, tell me about your general impression of IC and your IC experience in terms of their role in providing assistance in your WebQuest writing.

● WebQuest Writing Performance (as the term is not defined; that is, as questions are asked without the definition of WebQuest writing performance being provided)

Question 2: What aspects and features of IC and IC discourse do you think assisted you in your WebQuest writing? Here, I am making a distinction between IC and IC discourse. Simply put, IC refers to instructional conversation in its general sense, while IC discourse refers specifically to the discourse, or text, of IC, that is, the “mal” or “damhwa” (in Korean) of IC. As for the terms “aspects” and “features” used in the question, you do not need to distinguish them in answering the question, but you need to note that “aspects of IC and IC discourse” as used here and throughout the remainder of this interview refers to some broad things about IC and IC discourse, for example, its structure or general discourse flow, while “features of IC and IC discourse” refers to specific characteristics of IC and IC discourse. Okay, the question, again, is “what aspects and features of IC and IC discourse do you think assisted you in your WebQuest writing?”

● (Overall) WebQuest Writing Performance (as the term is defined)

Now, I will provide a definition of WebQuest writing performance and then ask you two questions. In this interview, WebQuest writing performance is defined as consisting of the overall writing quality, fluency, syntactic/lexical complexities, and content of your WebQuest essay writing (about Monet’s and Cezanne’s work). Overall writing quality refers to the writing quality of your essay as the quality is judged by overall, general impression of your writing, particularly in terms of its content, organization, and grammar as a whole. Fluency is simply the length of your writing. Syntactic and lexical complexities refer to the structural complexity of the sentences and the use of a variety of words in your writing, respectively. Finally, the content of your writing refers to your demonstration of understanding of the content of the Monet and Cezanne readings in your writing.
Now, given these definitions, I will ask you the following two questions:

**Question 3**: What aspects and features of IC do you think assisted you in your WebQuest writing performance, as the term WebQuest writing performance is defined as a whole of overall writing quality, fluency, syntactic/lexical complexities, and demonstration of understanding of the content of the WebQuest readings.

**Question 4**: What aspects and features of IC discourse, or IC “mal” or “damhwa,” do you think assisted you in your WebQuest writing performance, as WebQuest writing performance is defined as a whole of overall writing quality, fluency, syntactic/lexical complexities, and demonstration of the content of the WebQuest readings?

- WebQuest Writing Performance in the Respective Areas of Overall Writing Quality, Fluency, Syntactic Complexity, Lexical Complexity, and Content

Now comes the final set of questions. I will finally ask you questions about aspects and features of IC and IC discourse that assisted you in your WebQuest writing performance in each of the specific areas of writing: overall writing quality, fluency, syntactic complexity, lexical complexity, and content. As I defined earlier, overall writing quality refers to the writing quality of your essay as the quality is judged by overall, general impression of your writing, particularly in terms of its content, organization, and grammar as a whole. Fluency, again, is simply the length of your writing. Syntactic complexity refers to the structural complexity of the sentences in your writing, as opposed to structural simplicity as shown by short, simple sentences, and lexical complexities refers to the use of a variety of words in your writing. The content of your writing, as defined earlier, refers to your demonstration of understanding of the content of the Monet and Cezanne readings in your writing. Now, I will ask you five questions for these specific areas of your WebQuest writing. First, I will read all of the questions to you successively and then ask you each of the questions one by one.

**Question 5**: What aspects and features of IC and IC discourse do you think assisted you in your performance on the content of your writing, or your demonstration of understanding of the content of the Monet and Cezanne readings in your WebQuest writing?

**Question 6**: What aspects and features of IC and IC discourse do you think assisted you in your performance on the overall writing quality of your essay, or the writing quality of your essay as the quality is judged by overall, general impression of your writing, particularly in terms of its content, organization, and grammar as a whole?

**Question 7**: What aspects and features of IC and IC discourse do you think assisted you in your performance on the fluency of your writing, or the length of your WebQuest writing?
Question 8: What aspects and features of IC and IC discourse do you think assisted you in your performance on the syntactic complexity of your writing, or the structural complexity of the sentences in your WebQuest writing?

Question 9: What aspects and features of IC and IC discourse do you think assisted you in your performance on the lexical complexity of your writing, or the use of a variety of words in your WebQuest writing?

(Thank the interviewee for participating in the interview. Assure the interviewee of confidentiality of responses and ask him or her if I can contact him/her in case that I need further information.)
Appendix J

Timeline for Completing the Study

Pre-experiment Period

February – March 2012: Prepared and submitted the IRB protocol

April 2012: • The university’s IRB approved the protocol.

May 2012: • Defended the dissertation proposal successfully.  
  • Arrived in Seoul, Korea. Meetings with the cooperating teacher\textsuperscript{41} at the 
    Korean university’s EFL program. (These meetings continued throughout 
    the project period at the university.) 
  • Meetings with four classroom teachers of 12 classes, including the 
    cooperating teacher.

May – July 2012: 
  • Visited all computer labs on the university campus and decided on two computer 
    labs for the study 
  • Created the WebQuest site. 
  • Prepared for the training of the experimental and control teachers -- 
    preparing training materials, lesson plans, etc. 
  • Reserved two computer labs.

August – September 2012: 
  • Training sessions for the experimental and control teachers. 
  • Checked computer hardware and software at the computer labs and installed 
    programs necessary for the experiment, such as the Skype client.

Late August – Early September 2012: 
  • The university opened for the fall 2012 semester. 
  • Checked the course add/drop period for the semester to determine the first date of 
    the experiment. (The experiment began immediately after the add/drop period.) 
  • Meetings with the four classroom teachers

Early September – Mid-September 2012: 
  • Add/drop period for courses 
  • Checked the computers. 
  • One classroom teacher withdrew from the project

Experimental Period

\textsuperscript{41} The cooperating teacher was a senior faculty member at the EFL program who had cooperated with me in this project. He not only arranged for the 8 classes from which the sample was randomly selected but also assisted and cooperated in all other facets of this research project.
Third week of September 2012: • Conducted pretests on reading and writing for the first six classes. Obtained informed consent prior to conducting the tests

Fourth week of September 2012: • The experiment began.

Fifth week of September 2012: • Conducted pretests on reading and writing for the last two classes. Obtained informed consent prior to conducting the tests

Third week of October 2012: • The experiment ended.

Post-Experiment Period

Late October – Early December 2012:
• Pre-scoring training sessions
• Two raters scored the writing pretest and posttest. The researcher scored the reading pretest.
• Conducted data analyses for the quantitative part of the study.
• Selected cases (three participants) for the qualitative phase of the study.
• Contacted the participants and scheduled one-on-one interviews.

Early December – Mid-December 2012:
• Conducted interviews with the three participants over a four-weekday period

January – February 2013
• Returned to Albany.
• Conducted data analyses for the qualitative part of the study (transcription, within-case and cross-case analyses, and an analysis of online IC discussion texts).
• Began to write Chapter 4 of the dissertation.

March – April 2013
• Submitted a signed Annual Continuing Review Request form to the IRB.
• Consulted with the chair of the committee regarding the draft of Chapter 4.
• Wrote Chapter 5 of the dissertation.
• Consulted with the chair of the committee regarding the draft of Chapter 5, as well as the dissertation’s abstract.
• Submitted the final draft of the dissertation to the committee members and the chair.

May 8, 2013: • Dissertation defense.