Pedagogical Design Principles for Online Learning about the Use of Sources in Academic Writing: Materials Development and Evaluation in a College-level Writing Course

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Pedagogical design principles for online learning about the use of sources in academic writing: Materials development and evaluation in a college-level writing course

by

Huong Le Thi Tram

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Applied Linguistics and Technology

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The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this dissertation. The Graduate College will ensure this dissertation is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University
Ames, IA
2017

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ABSTRACT

This project formulated pedagogical principles for designing teaching materials on source use for students in college-level writing courses through major stages of materials development and evaluation. The pedagogical design principles in the development stage were theoretically informed by Systemic Functional Linguistics, Corpus Linguistics including the hypotheses in the data-driven language learning approach, and the Noticing Hypothesis in Second Language Acquisition. In the evaluation stage, the theory of action framework, which integrated the four criteria in Chapelle’s (2011) CALL task appropriateness framework into the linear logic model by Patton (2008), was used to investigate how the materials on source use that I designed and developed helped the college students in a college-level writing course at a Midwestern land-grant university improve their source use skills.

The evaluation focuses on the appropriateness of the materials on source use in the study context. A total of eight classes under the instruction of four instructors were recruited to participate in the evaluation of the materials. Both quantitative and qualitative analyses were conducted on a number of sources of data. The triangulation of the findings from the quantitative and qualitative analyses showed that the design characteristics of the materials prompted the students to focus on and notice features of source use which led to learning gains in source use although the quantitatively summarized learning gains were not statistically significant. The results also provided positive evidence of the effectiveness of the intended characteristics of the teaching materials in the students’ construction of meaning about source use in documented essays. The findings of learner fit showed most of the users’ positive perceptions of the difficulty, student engagement, and usefulness of the materials, but mixed results were also found on the guided induction approach used in the teaching
materials. The quantitative and qualitative analyses of the survey and interviews revealed the positive impacts of the experiences with the materials on both the instructors and the students. Based on these findings, several implications for pedagogical principles of materials design and implementation for students in college-level composition courses, and future CALL evaluation study are given at the end of the dissertation.

*Key words: CALL evaluation, SFL, genre-based analyses, DDL, SLA, source use, college writing*
CHAPTER 1: INTRODUCTION

College-level writing courses are quite common in most colleges and universities in the United States and all over the world. Aull (2015) even puts forward the specific term "first-year" (FY) writing to refer to such courses as they include “tasks and courses designed to provide general academic preparation for incoming college students. Such courses and tasks are required of hundreds of thousands of native and non-native English-speaking students entering North American colleges each year, and they parallel myriad requirements across the world designed to prepare college students to write academic English” (p. 2). Based on the in-depth historical accounts of writing instruction and academic writing in the United States by Murphy (1990) and Russell (1991), the one- or two-semester college-level writing course requirement is a fairly recent development, established in the last part of the nineteenth century in the United States. According to Murphy (1990), these present-day college-level writing courses also have “their roots” in classical rhetoric which originated from the system of rhetorical education in Athens, Rome, and other centers of ancient civilization. Moreover, in spite of years of adapting the rhetorical education system to writing and numerous changes, rhetoric has been a key component of college-level composition courses.

Due to the popularity of these courses, extensive research has been conducted to understand writing processes in order to improve writing instruction in these courses. As a result, writing instruction in the college-level writing courses has undergone significant changes over the last centuries (Murphy, 1990; Russell, 1991). Throughout much of the nineteenth and twentieth centuries, writing instruction was product-oriented which means that students would work on their writing assignment in a short amount of time for a grade without receiving any external input or feedback from their instructors or other sources for their writing until their
papers were returned. Instructions about writing largely took the form of lectures about prose models or some stylistic, grammatical, or rhetorical feature, with occasional discussions about the content of some readings. Since the mid-1960s, writing instruction has changed from product-oriented to process-oriented thanks to a plethora of research on writing in a real-life situation (Murphy, 1990; Russell, 1991). In this approach, teachers often provide students with strategies for different stages of a writing process, and students receive more input and advice about their writing during the process of completing a paper over a period of time.

However, scholars have recently indicated an important gap with the process-oriented approach in the current college-level writing pedagogy (Aull, 2015; Lancaster, 2014). As Aull (2015) points out, “most process-oriented applications, though useful for introducing less linear approaches to student writing, focused on individual stages rather than collective, language-level practices in FY writing” (p. 29). Moreover, scholars have also criticized the lack of descriptions about both student writing and academic genres for college students in composition courses (Aull, 2015; Lancaster, 2014; Nesi, 2014; Sancho Guinda & Hyland, 2012). Aull (2015) states that “FY writing can be still a kind of specter – mystified, important, menacing – and fueled by hyperbolic claims about how poorly students write” (p. 3). Although college-level writing courses are designed to provide general academic writing preparation for incoming college students to become more skilled at the institutionally recognized practices, the shortage of “adequate descriptions” of academic genres such as common language choices might lead to students’ struggles with understanding the discursive needs and practices of academic communities (Sancho Guinda & Hyland, 2012, p. 6-7). The researchers have thus indicated the potential benefits of enhancing language-level attention in college-level writing instruction.
Moreover, academic writing researchers have shown that incorporating external sources in one’s own writing is an important and challenging skill for college students (Coffin, 2009; Davis, 2013; Harwood, 2010; Hu & Wang, 2014; Hyland, 1999, 2002, 2004; Nesi, 2014; Thompson, 2005a, 2005b; Thompson, Morton, & Storch, 2013; Thompson & Tribble, 2001; Samraj, 2013). Hyland (1999) emphasizes that attributing and incorporating external sources act as a rhetorical feature which is “central to the social context of persuasion” and “the construction of knowledge” (p. 342). In other words, besides its primary function of documenting the source of knowledge used in one’s paper and avoiding plagiarism, attributing and integrating external sources also helps a writer to construct new knowledge in his or her writing by interacting with previous work or other sources through acknowledging, presenting, arguing, refuting, or strengthening one’s argument.

Source use skills have been shown to be challenging for novice writers of English. First, retrospective protocols or interviews with ESL college students have revealed that the students perceived source use as challenging skills, and it took them a lot of time to master in their academic writing development (Harwood, 2009; Petrić, 2007; Petrić & Harwood, 2013; Thompson, Morton, & Storch, 2013; White & Wang, 1997). For example, Thompson, Morton, and Storch (2013) reported that their interviews with 13 undergraduate writers disclosed the students’ inability to see the ultimate goal of source use as a knowledge constructing and expanding tool in academic writing. Similarly, Davis (2013) conducted a longitudinal study to examine student writers’ development of source use by interviewing and examining four main features of source use in their assignment papers of three Chinese postgraduate students throughout their graduate program. Her study showed that the students had to struggle with this skill from the beginning till the end of the program. Moreover, the interviews with the students...
indicated that two out of the three Chinese students were unable to see source use as a learning tool of constructing knowledge in academic writing and to master multiple rhetorical functions of citation.

Other researchers have indicated issues with college students’ integration of sources into their writing. Thompson and Tribble’s (2001) review of citation practices in student papers written at Reading University and the treatment of citation in English for Academic Purposes materials found the following patterns in the student written assignments using external sources: (1) lack of variety of citation types within single texts (e.g., the repeated use of “According to”); (2) lack of linguistic variety and inappropriate selection of verb (e.g., inappropriate use of “claims”); (3) absence of certain categories (e.g., non-author integral reference); (4) over-use of non-citational references to authors/authorities. Moreover, after reviewing the treatment of citation in current academic writing teaching materials for student writers, these authors concluded that most of the teaching materials often simplified the source use process and focused mostly on the mechanics of citing sources (mostly MLA or APA styles) and plagiarism rather than on teaching how to use it effectively. Based on the aforementioned gap in current writing pedagogy in college-level writing courses and the challenge of source use skills for college students, a discussion on the need for providing and improving language-level instruction in college-level writing courses is presented in the next section.

1.1. Improving Language-level Instruction in Writing Pedagogy for College Students

Contemporary research has shown that both native and non-native writers of English can likely benefit from language-level instruction in college-level writing courses (Aull, 2015; Cortes, 2004, 2006, 2007, 2008; Lancaster, 2014; Nesi, 2014; Tardy, 2006). First, as Pierre Bourdieu and Jean-Claude Passeron say, “academic language...is no one’s mother tongue.” (qtd.
in Aull, 2015, p. 6). Supporting this viewpoint, Bailey (2011) further argues that learning English academic writing in college-level composition courses should be considered as a process of acquiring a second language to native speakers of English. Accordingly, the spoken English language is considered as L1 and the written English language is considered as L2. He explains:

Although the most common type of writing being taught in the first year composition (FYC) classroom is writing in the student’s first language (LI), acquiring the written academic variety of language expected of college students is more similar to acquiring a second language (L2) than it is to acquiring a new variety of the LI. The language that the students write with in FYC is a type of interlanguage, a negotiation set up between the writer’s LI and L2. (Bailey, 2011, p.5)

In order to demonstrate that writing instruction in these courses should be seen “as a process of language acquisition rather than as a skill to be learned” (Bailey, 2011, p. 5), the author also examines linguistic features in writing samples of three students in two college-level writing courses. The examination of the writing samples found that features were “indicative of a dynamic, and sometimes even conflicting, negotiation between their LI (spoken language) and L2 (written language)” (Bailey, 2011, p.5). For example, the writing sample by the best student writer had more occurrences of L2 (i.e., written language) features (e.g., relative clauses) than the ones written by the two lower-graded student writers.

Moreover, rigorous empirical evidence has shown gaps in academic writing practices between native college writers and expert writers, supporting the positive stance on providing language instruction for both native and non-native novice academic writers of English. For example, by comparing lexical bundles (i.e., frequently-used word combinations such as on the other hand, in the context of) used by native student writers of English and expert writers, Cortes (2004, p. 413) concluded that even native speaking English students often failed to
acquire and use the variety of lexical bundles appropriate in published academic writing.

Furthermore, Lancaster (2014) showed that his sub-corpus of better graded argumentative essays by college students contained a greater variety and sophistication of stance-taking devices (i.e., words or phrases to show one’s attitudes towards a cited proposition or idea such as probably, certainly, evidently, or modal verbs) than lower-graded ones. More specifically, the higher-graded student writers tended to employ contesting resources (i.e., words or phrases conveying negative and critical evaluation such as lack of, flaw) in their papers more often than the lower-graded student writers did.

In addition, the researchers have indicated that an explicit language instruction approach is an effective pedagogy in college-level composition courses for a number of reasons. Aull (2015) provides a compelling argument on the explicit language instruction approach in first-year (FY) college-level writing courses by relying on her review of current literature on writing transfer. According to the author, writing transfer “refers to the ability to apply prior writing knowledge in new rhetorical situations” and is also “a central issue in FY writing” because the goal of the FY writing courses is “to transition into field-specific writing afterwards” (Aull, 2015, p. 172). Also, in order to facilitate writing transfer, it is critical to help students to see existing links or connections between their prior and new writing experiences. Moreover, her review of recent studies on pedagogy to foster writing transfer has shown that “implicit instruction is not conductive to transfer. Instead, transfer seems to occur when writing knowledge is specifically ‘cued, primed, and guided’ (Perkins & Salomon, 1989) so that individuals explicitly recognize similarities between prior and present experiences” (Aull, 2015, p. 173). The author, then, suggests that learners’ awareness and knowledge about language use and genres based on discussions of patterns of language use either in a specific genre or across
genres in academic writing should be of importance to writing transfer, and this potential should be further explored in future studies.

Other researchers in college-level composition and communication have advocated for giving explicit language instruction for undergraduates in college-level writing courses (Davis, 2013; Lancaster, 2014; Nesi, 2014). For example, Davis (2013) supported the use of explicit language instruction for teaching college students how to integrate sources effectively after she found that her undergraduate students had a limited capacity to recognize the “knowledge constructing” function of source use in English academic writing. Therefore, she recommended that instructors should explicitly show students certain textual features that help them see connections between texts and their rhetorical situations as well as linguistic features that are more common in one text type over another so that they can raise more awareness about language choices and genres.

Researchers have also indicated many other potential benefits of incorporating genre-based analysis, which involves an examination of a corpus of texts in a specific socio-cultural and communicative context, into writing instruction in college-level writing courses (Aull, 2015; Cortes, 2006; Friginal, 2013; Hyland, 2002; Lancaster, 2014). First, corpus linguists have recently shown significant variations in academic writing across genres, disciplines, and registers; as a consequence, they have emphasized that even native student writers must be taught how to write in a contextually responsive manner (Cortes, 2006; Friginal, 2013; Hu & Wang, 2014; Hyland, 2002; Swales, 2014). At the same time, researchers have shown the complex nature of writing process as a result of interaction among different factors including speaker, audience, and situational context over the past twenty-five years; therefore, there exists “no formula” for all the kinds of writing (Hesse, 2002, p. 40). Therefore, using language-level
patterns from genre-based analyses, which examines language use in a specific socio-cultural and communicative context, might help demystify ambiguities in FY writing instruction (Aull, 2015). In her definition, language-level patterns do not mean sentence-level errors, but “the recurring words and phrases that, regardless of topic, are shared across FY writing and across expert writing: the features that help writers frame their arguments and lead readers through them” which are also called meta-discourse (Aull, 2015, p. 4). In other words, the incorporation of language-level attention in genre-based analyses into college-level writing instruction allows both instructors and students to have better understanding of the features of FY writing and the target genres of writing, which are very critical to the development of writing skills for student writers.

Receiving explicit genre-based instruction might also allow the learners to develop a metalanguage for talking about texts and increase their rhetorical consciousness as they are able to identify rhetorical functions of elements in a text. For example, the study by Carter et al. (2000), which investigated the effectiveness of an instructional software program on the genre-knowledge development of L1 undergraduate writers, reported the treatment group, who received the explicit instruction from the program, applied scientific reasoning in their written reports more effectively than the other group. Furthermore, in the synthesis of key findings from 60 empirical studies about how writers learn genres, Tardy (2006) found that both L1 and L2 writers recognized the benefits of explicit instruction on genres. Most of these students in these studies showed positive attitudes to explicit genre-based instruction.

Next, data-driven language learning (DDL), which is also known as the direct application of corpus linguistics as it involves direct interaction with a corpus by teachers and students, has also been indicated as a promising approach for improving writing instruction (Boulton, 2009a,
2009b, 2010; Flowerdew, 2009, 2015; Frankenberg-Garcia, 2014; Johns, 1991; Römer, 2011; Smart, 2014; Thompson & Tribble, 2001). According to Johns (1991), DDL is characterized by its provision of “direct access to the data” or “the facts of linguistic performance” for language learners and active involvement of learners in understanding the use of a target discourse feature by interacting with a corpus through concordance lines (Johns, 1991, p.3). For example, Thompson and Tribble (2001) suggested that academic writing learners could look at concordance lines of annotated citing sentences to learn about different forms of citations in a target genre or register.

The first two theoretical pillars of DDL are input authenticity and inductive learning. First, input authenticity refers to the provision of real examples of language use through concordance lines in DDL. This characteristic is claimed to enable learners to see “differences between assumptions about language structure in the abstract and what is found in real-world use” (Johns, 1991, p. 402). This noticing of real language use through concordance examples, thus, might help foster learners’ comprehension and production (Frankenberg-Garcia, 2014).

Secondly, inductive learning, which is also a concept used in SLA, is considered as a heart of DDL. As Johns explains, “inductive data-driven approaches stimulate inquiry and help learners to see patterns and generalizations because the data is primary” (1994, p.194). This approach creates a new teaching and learning style of focusing on form and raising awareness by placing the learner’s discovery of a target language feature at the center of learning. In other words, learners in the inductive learning approach have to be continually active through “inductive processes” such as forming and testing hypotheses on the use of a linguistic feature. Inductive learning is also described as a discovery learning experience where learners have to come up with rules about language use of a specific feature after examining multiple examples.
containing that feature (Bernardini, 2000a, 2000b, 2002, 2004a, 2004b; Cobb & Boulton, 2015; Römer, 2011; Yoon, 2011). The learners in the DDL approach are thus hypothesized to engage in different phases of discovery learning by firstly formulating hypotheses, testing hypotheses, and coming to the final conclusion on language use of a target discourse feature. These learning processes are therefore expected to help students develop observation skills, problem-solving skills, critical thinking and noticing skills while fostering their language awareness and sensitivity with authentic texts, leading to the empowerment of learner autonomy (Cobb & Boulton, 2015; Römer, 2011).

There has also been some empirical evidence of the positive effects of DDL on college student writers to support these DDL hypotheses. Yoon (2008) reported a positive influence of corpora use on L2 academic writing learners; for example, “students assumed more responsibility for their writing and became more independent writers” after interacting with the corpus (p. 31). Similarly, in an attempt to discover the potential of DDL in vocabulary teaching, Boulton (2009b) found that new words through corpus examples resulted in better acquisition of their uses than traditional pedagogical materials such as bilingual dictionaries or usage manuals (p. 50). Moreover, researchers have reported positive impacts of DDL in learners’ improvement in revising and correcting errors in their own writing in their translation and academic writing classes (Bernardini, 2004a; Tono, Satake, & Miura, 2014).

However, the results of DDL impacts on learners’ writing improvements have not always been significant and decisive so far. For example, Chang’s (2012) study yielded mixed results about the impacts of DDL on learners’ inductive learning. For her study, she developed a web-based corpus tool to teach graduate students how to convey a stance in their academic arguments. The tool was based on a corpus of thirty research article introductions which was manually
tagged for stance, and the participants were allowed to use it as a reference tool as writing up the introductions of their research papers. However, her analysis of the working processes of the six graduate users of the tool did not show the involvement of high-level thinking processes as hypothesized in the DDL theory. In fact, these students mostly used low-level thinking processes to understand the concordance examples on display. She thus suggested that further studies should be carried out to reveal learning processes of leaners when directly interacting with corpus tools.

In addition, Cortes (2006) and Friginal (2013) both attempted to introduce DDL activities to help college students to improve their academic writing skills in their target genres written for their courses which are reports or research articles respectively. Their examinations of the writing products of the participants were also, unfortunately, unable to see significant changes in their use of the target discourse features (e.g., reporting verbs, lexical bundles indicating purposes). However, they both reported positive attitudes of the student participants towards the DDL instruction and small changes in their writing quality. They suggested that more rigorous research should be conducted to further understand the value of DDL in language instruction for college student writers.

The literature review of the DDL studies has thus indicated its potential in language learning, but more investment from researchers and practitioners are still needed to expand its theoretical and empirical infrastructure (Boulton, 2009a, 2009b; Flowerdew, 2009; Smart, 2014; Römer 2011). In addition, very few DDL studies have been conducted in college-level writing courses for both native and non-native speakers of English, although researchers have indicated the need for incorporating language-level pattern instruction in such courses. Moreover, a review of the DDL literature has identified two other gaps that should be addressed. First, DDL research
work should be invested in how to create a DDL-friendly learning environment and learning tasks for both teachers and learners where they could easily get involved (Römer, 2011; Boulton, & Pérez-Paredes, 2014). Importantly, the literature in language learning, including second language acquisition (SLA) and computer-aided language learning (CALL), should be consulted to strengthen the theoretical ground for the design of DDL activities (Barbieri, & Eckhardt, 2007; Chapelle, 2001; Ellis, 2010; Flowerdew, 2015).

Based on the discussion above, the proposed DDL approach with its underlying concept of inductive learning might bring a lot of benefits for native and non-native speakers of English in college-level writing courses. The noticing of source use in real language through concordance examples might help foster learners’ comprehension and production of source use. The students are also hypothesized to engage in different phases of guided inductive learning by firstly formulating hypotheses, testing hypotheses, and making conclusions on source use in the target text type. These learning processes can lead to their development of observation skills, problem-solving skills, critical thinking, and noticing skills while increasing their language awareness and sensitivity with authentic texts.

These critical arguments on the potential of incorporating SLA, genre-based analyses, and DDL into language-level instruction in college-level writing pedagogy have motivated my further exploration of these theoretical grounds in the design and development of teaching materials on source use for college students in this study.

1.2. Goals of the Study

In order to address the aforementioned gaps in current pedagogy of composition courses for college students, this study aims to explore the effectiveness of a particular technological innovation, in this case a specific use of DDL in combination with the perspectives in SLA and
SFL, and the findings of my genre-based analysis of source use. The ultimate goal of the project is to discover pedagogical principles for developing materials and giving instruction on source use in academic writing for college student writers. These principles are based on the integration of SFL, SLA, and Corpus Linguistics in Applied Linguistics. The researchers and practitioners in the relevant areas including course instructors will learn the principles for designing teaching materials for college student writers and ways of teaching source use skills in college-level writing courses. There were two major phases conducted in this project:

- **Phase 1: Development of the Online Materials on Source Use.** The purpose of this phase was to develop an integrated framework for designing and developing the online materials on source use for the study. The framework was informed by relevant theories and language learning hypotheses in SFL, SLA, and Corpus Linguistics including genre-based linguistic analyses and data-driven language learning. The outcomes of the phase were specific characteristics of the teaching materials that were shaped by the theoretical principles in the framework, and the teaching materials on source use for the instructional context in the study. The teaching materials consist of two components: a web-based corpus tool and a Moodle-based lesson. Descriptions of this phase are presented in Chapter 3 of this dissertation.

- **Phase 2: Evaluation of the Teaching Materials.** The goal of this phase was to evaluate the teaching materials that I developed based on the theoretical principles from SFL, SLA, and Corpus Linguistics. The outcomes of this phase included a theoretical framework for evaluating the online materials, and an evidence-based context-specific argument on the effectiveness of the online materials in the instructional context of the study. Moreover,
based on the empirical results in this evaluation phase, implications for future studies and materials design and development for college-student writers are also provided.

The research carries multiple implications for formulating theoretically informed pedagogical principles for materials design and development for college students. First, the findings on the effectiveness of the proposed design of the online materials on source use will expand the current literature of corpus-based language learning which has been proved promising but still lacks rigorous theoretical and empirical grounds in language learning and technology. Secondly, the integration of my corpus-based findings on source use in the sub-corpus of A graded papers in this study also offers more suggestions for materials development in the current academic writing pedagogy in college-level writing courses. The outcomes of the study will also answer the recent call for integrating language-level patterns from genre-based analyses into writing instruction for college students. Last but not least, by bringing in the perspectives in SFL and SLA as the theoretical grounds for the materials design and development, this study contributes to the current examination of how theoretical linguistics and SLA could help improve writing instruction in English for students in college-level composition courses.

1.3. Outline of the Dissertation

This dissertation consists of seven chapters. The first chapter provides a brief historical and theoretical view of writing pedagogy for college-level composition courses in the U.S. with a focus on the current debate on the genre-based analysis approach to integrate language-level patterns into writing instruction. This brief introduction is intended to contextualize the research, and to give a springboard for the research goals which are stated at the end of the chapter. Chapter 2 reviews the literature on topics relevant to the current study, providing a theoretical
framework for each of the two phases of the study which are developing and evaluating the materials on source use. The second half of the chapter introduces the theory of action framework which connects the design principles of the teaching materials to the intended outcomes for evaluation. The development of this framework also leads to the identification of evaluative criteria for the materials and the articulation of research questions in this study.

Chapter 3 elaborates on the specific instructional context of the study and Phase 1 of the study which is the development of the materials on source use. Chapters 4 to 7 present the results of Phase 2 of the study which is evaluation of the teaching materials on source use for college-student writers. Chapter 4 presents the research approach and provides a detailed description of the participants, materials, procedures, and data analysis. The results on language learning potential, which is a central concept in the guiding conceptual framework by Chapelle (2001) and also the most substantial part of this study, are elucidated in Chapter 5. Chapter 6 presents the findings on three qualities of the materials on source use - meaning focus, learner fit, and impact. Finally, Chapter 7 discusses the multifaceted implications of the results from the study and the limitations of this study followed by suggestions for future research.
CHAPTER 2: THEORETICAL FRAMEWORKS FOR THE DEVELOPMENT AND EVALUATION OF THE MATERIALS ON SOURCE USE

This chapter provides the theoretical frameworks for the development and evaluation of the DDL learning materials on source use in this study. I will first briefly review the literature on source use in academic writing for college students, which provides a foundational concept for the teaching materials. Then, I will delineate the integrated theoretical framework of the development of the materials which consists of the Systemic Functional Linguistics (SFL) perspective with the literature review on genre-based linguistic analyses, the Noticing Hypothesis (NH) in Second Language Acquisition (SLA), and the data-driven language learning (DDL) approach in Corpus Linguistics. Next, guided by Chapelle (2001), Patton (2008, Chapter 10), and Norris (2016), I present the framework for the theory of action of the study, which connects the underlying design principles and the evaluation of the materials. This framework helps me generate research questions for the evaluation study and the selection of SFL as a theoretically informed analysis approach to investigate the users’ perceptions of the materials. A short background of SFL is then provided in order to discuss how the language theory can be applied to bring insights into qualitative analyses of the study. The chapter ends with the nine specific research questions corresponding to the four qualities of the materials based on the theory of action framework.

2.1. Why Is It Necessary to Teach Source Use Skills for College Students?

Academic writing researchers have indicated the need for supporting novice academic writers to learn how to incorporate external sources in their own writing due to the importance of this skill in academic writing (Coffin, 2009; Davis, 2013; Harwood, 2010; Hu & Wang, 2014;
Hyland, 1999, 2002, 2004; Nesi, 2014; Thompson, 2005a, 2005b; Thompson, Morton, & Storch, 2013; Thompson & Tribble, 2001; Samraj, 2013). The source use feature has been investigated as citation in corpus-based studies. Taking Hyland’s (1999) social constructivist view on source use in academic writing, Hu and Wang (2014) define citation as “a direct and explicit means of intertextuality” where ideas or contents are “attributed to sources external to the text….serving myriad cognitive, epistemological, and rhetorical functions such as establishing intellectual linkages, demonstrating paradigmatic allegiance, contextualizing research, enhancing persuasiveness, and managing interpersonal relationships” (p. 15). Therefore, the term “citation” is also used to refer to source use or the integration of external sources into writing in this dissertation.

Source use skills have been shown to be challenging for novice writers of English. First, researchers have attempted to explore how ESL learners incorporate external sources into their writing either by retrospective protocols or interviews and have concluded that source use is a challenging skill which takes learners a lot of time to master in their academic writing development (Harwood, 2009; Petríc, 2007; Petríc & Harwood, 2013; Thompson, Morton, & Storch, 2013; White & Wang, 1997). According to Petríc and Harwood (2013), an effective integration of external sources into a paper is not a simple and direct process of transferring contents of external sources into one’s writing, but a student writer has to comprehend a cited work and think critically about it before incorporating it into his or her writing.

Observations and empirical findings by practitioners and researchers on differences in citation practice between novice and expert academic writers have also supported the argument that citation is a source of considerable difficulty for most novice writers due to its complexities (Harwood, 2009; Hyland, 2002, 2013a, 2013b; Nesi, 2014; Thompson, Morton, & Storch, 2013;
Thompson & Tribble, 2001). At the most basic level, academic writers need to acknowledge sources to avoid accusations of plagiarism and need to be conversant with the mechanics of the referencing system appropriate to their field and the genres they produce (Hyland, 2002). Writers may also have to choose whether to present the names of cited sources or authors in their citations, and how to adapt appropriate rhetorical strategies to situate their claims (Thompson, 2005a, 2005b). For example, they have to select appropriate verbs to correctly report the position or stance of both the writer and their cited authors towards the cited ideas (Bloch, 2010).

At a higher level, academic writers are also expected to use sources for a number of rhetorical purposes such as to support an argument, to compare and contrast different ideas, and to evaluate an argument (Hyland, 2002; Paul, 2000; Petrić, 2007; Petrić & Harwood, 2013). For example, in the study by Mansourizadeh and Ahmad (2011) on citation practices among scientific writers in their research papers, novice writers tended to use a higher number of attribution citations (i.e., to simply attribute a cited proposition to a source) and fewer support citations (i.e., to support one's claim) than expert writers. In contrast, expert writers often used citation for a variety of rhetorical purposes such as showing the significance of their study, establishing links between sources, and supporting their methodology in use.

Another reason for the complexities of citation is its variations across genres and disciplines as shown by recent corpus-based linguistic studies (Hyland, 2000, 2002, 2013; Nesi, 2014; Swales, 2014). For example, in terms of author-integration, Thompson and Tribble (2001) found that doctoral students of Agricultural Botany preferred leaving the names of cited sources or authors in parentheses (i.e., non-author integral citations) whilst doctoral students of Agricultural Economics preferred integrating the names of cited sources or authors into syntactic sentence structures (i.e., author-integral citations) when incorporating external sources in their
writing. Likewise, Nesi (2014) reported that students of Archaeology, Classics, Linguistics and Philosophy seem to prefer non-author integral citations in their in-class writing assignments. Due to generic and disciplinary variations in citation practices, academic writers are advised to be familiar with the specific genre that they are writing in order to incorporate sources effectively (Hyland, 2002, 2013; Nesi, 2014).

Based on the theoretical and empirical need to give source use instruction in college-level writing courses, the next section continues to discuss the potential of integrating SFL, SLA, and the DDL approach from Corpus Linguistics to improve the teaching of source use skills for college students.

2.2. Developing the Integrated Framework for the Development of the Materials on Source Use for College Students

Based on the previous discussion on the need for language-level instruction on source use in college-level writing courses, I will highlight important theoretical grounds for the integrated framework of developing the materials on source use in this study. Specifically, the framework integrates three major theoretical sources about language learning which are SFL, and the role of genre-based linguistic analyses in writing pedagogy, the NH in SLA, and the DDL approach.

2.2.1. Systemic Functional Linguistics and Its Relevance to the Materials Development

Overall, SFL is a coherent theory of language based on the work of Michael Halliday (1978, 1985, 1989, 1994), and it has been developed over time. The theory sees language as a resource of choices from which users can construct different kinds of meanings to perform different communicative functions based on contexts. The fundamental unit in SFL is text, and the examination of text meanings in SFL is always situated within their social contexts. The SFL approach to language is envisioned by Halliday (1994) and Mohan (1986) to provide analytical
tools to help analyze discourse and meaning construction by examining the lexico-grammar of the text, as Halliday (1994) states:

A discourse analysis that is not based on grammar is not an analysis at all, but simply a running commentary on a text: either an appeal has to be made to some set of non-linguistic conventions, or to some linguistic features that are trivial enough to be accessible without a grammar, like the number of words per sentence (and even the objectivity of these is often illusory); or else the exercise remains a private one in which one explanation is as good or as bad as another. A text is a semantic unit, not a grammatical one. But meanings are realized through wordings; and without a theory of wordings – that is, a grammar – there is no way of making explicit one’s interpretation of the meaning of the text (pp. xvi-xvii)

Instead of focusing on sentence-level form and discerning content and context of use, the SFL view engages with the relationship between language and content within a context. Moreover, texts are considered as acceptable and informative units of analysis in SFL (Halliday & Martin, 1993). In other words, SFL offers a way to theorize language and content in texts and provides tools to investigate the integration of language and content in a specific context.

Two important components in the SFL perspective that are used to examine text are genres and registers. First, genres are defined as “staged, goal-oriented social processes through which social subjects in a given culture live their lives” (Martin, 1997, p. 43). As Martin (1997) explains, the construction of a text involves the interaction between the producers and consumers of that text who share the same culture to achieve a specific goal in their jointly valued and recognized practice. Genre is realized through its register, in that registers are defined as resources for creating meaning potential of a text that are typically associated with a particular social context (Martin, 1997, p. 37). Registers are often described in terms of three main variables that influence the way we use language: field, tenor, and mode. Each of these variables then affects language resources to create each type of meaning in language (Halliday, 1978,
Field is concerned with the activity being pursued or the subject matter that the activity revolves around, and relates to language resources for the ideational meaning (i.e., the resources for representing our experience of the world). Tenor refers to the social roles and relationships between the people involved and influences language resources for the interpersonal meaning (i.e., the resources for enabling interaction). The third variable is mode, which is the medium and role of language in the situation and is linked with language resources for the textual meaning (i.e., the resources for constructing coherent, connected texts).

The explanations of genres and registers show the difference in the levels of context for examining text between genre and register. While register is concerned with the relationship between the level of context of situation and language, genre considers the level of context of culture and its relationship with situation. In Martin’s words, “register (encompassing field, tenor and mode) contextualizes language and is in turn contextualized by genre” (Martin, 1997, p. 37).

Martin’s (1997) expansion of the SFL theory based on Halliday’s works (1978, 1985, 1989, 1994) has brought two major important implications for SFL genre-based analysis and academic writing instruction. First, SFL genre-based analysis has moved from the sole attention to generic structural elements to an analysis of language resources such as lexico-grammatical features to construct types of meanings in a text’s register. Secondly, in terms of writing pedagogy, SFL advocates that learners of academic discourse should be explicitly taught about generic features when learning how to write text types. “The genre-based approach is a convincing demonstration of the value of approaching language as a medium of learning from the perspective of systemic functional linguistics, which takes a functional perspective on the study of language, studies the relation between texts and their contexts, and provides analytical tools for the description of discourse and the resources of lexicogrammar of English” (Mohan,
Martin’s (1997) work has also led to the formation of the composition teaching-learning cycle introduced by Bawarshi and Reiff (2010, p. 34), which consists of three stages: modeling, joint negotiation of text, and independent construction of text. Accordingly, the first stage gives teachers and students a chance to discuss cultural and situational contexts and social purposes of generic features in example texts of the target genre, and the language features of register in those texts. They are then engaged in the joint negotiation and construction of a text within the genre. Finally, students have to produce a text of the target genre by undertaking a number of stages such as brainstorming ideas, drafting, and conferencing. These two important implications from SFL have thus created an important theoretical foundation for the pedagogical design of the teaching materials in this study. Based on this discussion, I will continue to elucidate how genre-based linguistic analyses underpin the materials design.

**Genre-based linguistic analysis and its Relevance to the materials development**

Researchers have indicated the potential for incorporating genre-based linguistic analysis in Corpus Linguistics into writing pedagogy for college students for a number of reasons. First, the outcomes of these analyses, which are linguistic patterns and features, are essential to language instruction in academic writing. Integrating these patterns into language instruction is claimed to help foster students’ awareness of language use in academic writing (Aull, 2015; Lancaster, 2014; Nesi, 2014). As Aull (2015) explains, the ultimate goal of examining and introducing recurring patterns in language use in a specific genre in language instruction in FY writing courses is not simply to help students “blindly imitate norms” in the target genre by expert writers, but to help them gain awareness of common linguistic patterns and their underlying values in a specific genre. According to her, common linguistic patterns do not simply give us writing templates for writers to use, but they allow us to understand and be aware
of underlying values by the community of a target genre. And such awareness is of importance to any student’s writing development. In her words, Aull (2015) asserts that:

Sharing corpus-based patterns with students is ideally a way of helping students become more able to recognize the connection between writing expectations and concrete choices they have for their writing. In this fashion, it is a way to present students with options for their writing along with opportunities for deciphering why such patterns are convincing in a given rhetorical task. (Aull, 2015, p. 161)

Supporting this viewpoint, Hyland also emphasizes that the integration of corpus-based analysis into writing instruction enables students to “critically engage with the values of institutional goals and practices” (2000, p. x). In this manner, students are able to better understand faculty expectations given the fact that previous studies are reported to show “a disconnect between faculty expectations and student interpretations of what is involved in student writing” (Aull, 2015, p. 162).

Considering the aforementioned variations of citation practices across different factors such as genres, registers, disciplines, and writing proficiencies, Nesi (2014, p. 212) states that “students in need of writing skills support are thus best served by descriptions of the practices of successful writers undertaking the same sort of assessment tasks as themselves, in their own disciplines and genres.” In other words, the examination of the target feature in a similar writing context would help provide concrete and informative suggestions for those students who need more writing instruction.

Lancaster (2014) emphasizes that investigating and sharing linguistic patterns of written language use with students in college-level writing courses can also bring a lot of positive effects on their learning. First, discussions on patterns of written language use in academic writing raise learners’ awareness and attention to language use and genres. Such awareness and attention are important to their L1 writing development. Moreover, learning about written language use by
exploring its patterns of use in a target genre also helps individuals recognize similarities and differences between prior and present experiences. Such recognition is beneficial to their writing transfer and their growth as an independent writer.

In terms of teaching students how to integrate external sources effectively into their writing, researchers recommend that source use instruction should include both linguistic forms and rhetorical functions of citation. Drawing on their findings on how undergraduates engage in source-based writing and reading, Hirvela and Du (2013) assert that paraphrasing, a form of source use, should be taught through both linguistic resources and their rhetorical functions in a specific context. For example, paraphrasing in the English academic writing should be taught as a learning tool of knowledge transforming, not simply knowledge telling.

Moreover, my pilot study, which is a corpus-based investigation into source use by college students in their documented essays in a college-level writing course, has revealed both shared patterns and some differences in source use between the group of A graded papers and the group of B graded papers. These corpus findings on source use are of importance to my design of source use instruction for college students in a FY writing course in this study. The investigation included an examination of linguistic form of citations in 129 student papers, and an analysis of citation functions in twelve student papers. The adapted framework for citation features integrates four major aspects of citation forms (citation density, author integration, textual integration, and reporting verbs) under the unifying perspective of dialogic engagement, and the citation function taxonomy with eleven citation functions.

The dialogic engagement perspective is taken from SFL. In the dialogic engagement perspective, the use of external sources in academic writing helps writers engage their target audience in a conversation with other experts on the topic under examination. In other words, the
use of citation is not simply to restate what others say but to act as an important tool to construct a conversation with readers and cited authors in order to build new knowledge on a certain topic.

Based on the adapted framework for citation, four features of citation were examined under the unifying perspective of dialogic engagement in the pilot study. They are: (1) *citation density*; (2) *author integration*, which refers to how an author or a source is integrated into a citing sentence; (3) *textual integration*, which considers how a cited proposition is integrated into a citing sentence; and (4) *writer stance* through reporting verbs which concerns how the writer expresses their stance or position towards the cited proposition through the selection of reporting verbs. In the dialogic perspective, each of these four features has its own sub-categories each of which might act either as resources for contracting or expanding a conversation between the cited authors and the target audience. For example, the *named-author integral* citation type, where the name of a cited source is integrated as a syntactic constituent of a sentence, has a greater emphasis on the source of the cited proposition than the *non-author integral* citation type, where the name of its source is often left in parentheses. In other words, the cited proposition in the *named-author integral* citation type is presented as a perspective of an individual, whereas the cited proposition in the *non-author integral* citation type is presented as a generalized view or a fact. Therefore, the *named-author integral* citation type might be more likely to invite alternative thoughts of the readers to challenge the presented idea which helps expand the conversation. In contrast, the *non-author integral* citation type is more factual, and thus is more likely to invite the readers to accept it which helps contract the conversation between the readers and the writer.

My corpus-based pilot investigation into the citation practices of college writers has yielded important findings that can be integrated into citation instruction for college students in
college-level writing courses. First, the corpus-based analysis on 129 English 250’ documented essays showed shared patterns in citation practices of highly graded student writers in this specific genre in the perspective of dialogic engagement. Specifically, the student writers used citation frequently in this paper type and employed multiple textual and author integration features to expand the conversation among the cited authors and the readers of their papers. However, there are still some slight differences in terms of distributions of citation frequencies across sub-categories of each citation aspect between the two sub-corpora. For example, the sub-corpus of A graded papers had more citations where the names of cited authors or sources are put in parentheses (the non-author integral citation type) than the sub-corpus of B graded papers. Similarly, citations in the sub-corpus of A graded papers also contained a wider variety of reporting verbs than those in the sub-corpus of B graded papers.

Although the corpus-based analysis of citation use indicated little difference in the use of citation forms between the A graded papers and the B graded papers, the functional analysis of citation use in my pilot study found a clearer difference in the diversity of citation functions between these two sub-corpora. For example, the A graded papers contained many citations whose purpose is to give definitions of concepts or topics under examination, but none of these were found in the B graded papers.

In support of Mansourizadeh and Ahmad’s (2011) finding about variations in citation functions across registers or sections within a research article (e.g., attribution was the dominant citation type in the introduction section of novice writers’ papers), my pilot study also found a pattern in the location of citation function in the source-based writing by college writers. For example, most of the student writers integrated external sources to establish the context of their essay in the introductions of their essays.
Based on the linguistic and functional patterns of citation in students’ documented essays revealed in my pilot study, the next section continues to discuss the potential of SLA theories in improving writing pedagogy in college-level writing courses. It presents the NH in SLA that helps inform the theoretical framework for the development of the materials on source use in this study.

2.2.2. Second Language Acquisition and Its Relevance to the Materials Development

In this section I will first explain several associations between SLA theories and the writing pedagogy for college students, all of which have been theoretically and empirically supported. Following is my rationale for the use of the NH as a basis for my proposed instruction on source use for college students. These discussions are aimed at providing a sound theoretical foundation for using SLA in the development of the writing teaching materials for college students.

Researchers have indicated the potential of using SLA theories to improve FY writing pedagogy by showing their relationships in a number of ways. Bailey (2011) maintains that SLA theories can lend a new perspective to first-year writing pedagogy by introducing the *interlanguage* concept from SLA to the writing instruction for college students. The term of *interlanguage* in SLA refers to “the systematic knowledge of an L2 which is independent of both these learners’ L1 and the target language” (Ellis, 2012, p.968). Bailey (2011) uses this term to argue for the existence of a systematic and coherent linguistic system in college students’ writings produced in their college-level composition courses. In his reasoning, the spoken language is considered as the native language or L1, and the written language is the target language or L2. He purports that “the language that the students write with in FYC is a type of interlanguage, a negotiation set up between the writer’s LI and L2” (Bailey, 2011, p.5). The
argument on the need for seeing writing as an acquired system of language use for native
speakers of English is strongly grounded on the assumption that the spoken and written English
languages are distinct systems.

The assumption of the distinction between conversation and writing has been well-
supported with both theoretical and empirical evidence of the unique features of each language
system. Significantly, Biber, Gray, and Papoon (2011) have found that most clausal
subordination measures (e.g., Wh-clause, that-clause) are more common in conversation than in
academic writing while most phrasal complexity measures (e.g., complex noun phrases) are
more pervasive in academic writing than in conversation. Based on their comparison of
grammatical complexity features in conversation versus academic writing, Biber et al. (2011)
have provided a strong hypothesis about “the developmental progression” of linguistic
complexity in L1. According to them, because conversation is acquired before the acquisition of
the grammar of writing, the grammatical structures in formal writing represent a much higher
complexity level than those in conversation. Also, the acquisition of these grammatical structures
in formal writing does not happen naturally to native speakers of English.

In order to test Biber et al.’s (2011) hypothesized developmental sequence, Staples,
Egbert, Biber, and Gray (2016) conducted the first corpus-based study to examine the
development of phrasal and clausal complexity features across level of study, discipline, and
genre among college-level L1 writers. The results of the study indicated that the undergraduates,
who are native speakers of English in their study, follow the hypothesized developmental
progression. For example, as the educational level increases, student writers will use fewer finite
dependent clauses and more dependent phrases including noun phrases with more noun
modifiers. This strong evidenced-based argument on academic writing development among L1
English college students has corroborated the position that academic writing is not anyone’s mother tongue, and expecting students to learn to write like professionals or to produce academic prose in FY composition courses by themselves may be not realistic.

Many other studies have also investigated the linguistic features of college-level student writings to illuminate the first-language writing development of L1 college writers. First, Bailey’s (2011) analysis of linguistic features in writing samples of three undergraduates has shown that the written language produced by college students is a type of SLA interlanguage between the spoken language and written language. The three student writers in his study were described to represent three different writing levels in two different courses of a college-level writing program. The linguistic examination of the writing samples has revealed that linguistic features are “indicative of a dynamic, and sometimes even conflicting, negotiation between their LI (spoken language) and L2 (written language)” (Bailey, 2011, p.5). For example, the sample by the student writer at the lowest level of L2 acquisition has more occurrences of L1 features (e.g., dominant use of relative clauses introduced by “that” in a repetitious manner) than the ones written by the two student writers at higher levels of L2 acquisition.

The findings of large-scale studies on language-level patterns of college student writings across writing levels have added more empirical support for Bailey’s (2011) argument for the existence of the *interlanguage* by college students in their process of acquiring the written language. First, different from academic expert writers who equally use both hedges (e.g., *sometimes, may, might*) and boosters (e.g., *always, never, should, must*) to construct their claims, the first-year college writers tend to use many boosters and construct “less measured claims” (Aull, 2015, p.97). Furthermore, the student writers of higher-graded essays are more likely to employ contesting resources (i.e., words or phrases conveying negative and critical evaluation
such as *lack of, flaw* more often in their writings than those of lower-graded papers (Lancaster, 2014). The student writers of higher-graded argumentative essays also use a greater variety and sophistication of stance-taking devices (i.e., words or phrases to show one’s attitudes towards a cited proposition or idea such as *probably, certainly, evidentially,* or *modal verbs*) than those of lower-graded ones. These findings on written language development among college students have strengthened Bailey’s (2011) recognition of the *interlanguage* by L1 students of English in their FY writing courses.

According to Bailey (2011), the introduction of the *interlanguage* concept to college-level writing pedagogy brings a new perspective on first-language writing development which will lead to changes in instructors’ expectations about student writings in college-level composition courses and modifications to their pedagogy in these courses. These changes will better reflect how students acquire the written language throughout their college years and beyond. He suggests that college-level writing instruction should take a more acquisition-centered approach in order to help students to develop their writing skills effectively. Bailey (2011) provides a plethora of ideas to improve college-level writing pedagogy. For example, an instructor should surround students with target written language that they are required to produce. Also, students should be provided with some metalinguistic awareness, which is defined as “awareness of what language is, of how it works, of terms that can be used to describe it,” because such knowledge will facilitate students’ acquisition of academic writing in a long term (Bailey, 2011, p.206).

On the grounds of the potential benefits of introducing SLA theories to college-level writing pedagogy, I will provide my rationale for the incorporation of the Noticing Hypothesis in SLA into my proposed instruction on source use for college students. The Noticing Hypothesis
has been considered as a critical theoretical view in SLA. It explains that learners’ acquisition of linguistic input is more likely to increase if their attention is consciously drawn to linguistic features. Schmidt (1990, 2001), who was the first to propose this hypothesis, maintains that noticing precedes understanding and is a condition which is necessary for converting input into intake (as cited in Ellis, 2012, pp. 265-272). The next subsection provides specific claims in the Noticing Hypothesis that are relevant for the development and evaluation of the materials in this study.

**Noticing Hypothesis**

The Noticing Hypothesis (NH) postulates the roles of noticing in second language acquisition, and the importance of attention in noticing and awareness in the acquisition process. The NH has several claims that can be summarized below:

1. Schmidt claims that learners need to notice language in order to learn it. This idea is contrary to the belief that learners just pick up language from being immersed in an environment with plentiful linguistic input. In his words, noticing is “the necessary and sufficient condition for the conversion of input into intake” (Schmidt, 1993, p. 209), where intake in SLA is usually defined as a subset of the input that has been taken in or comprehended by the learner, and affects their developing language system, and it also occurs at a preliminary stage along the acquisition process (Van Patten & Benati, 2015).

   Schmidt (2010) also makes a clear distinction between noticing and understanding by indicating that they are two levels of awareness. In SLA, awareness is defined as “a particular state of mind in which an individual has undergone a specific subjective experience of some cognitive content or external stimulus” (Tomlin & Villa, 1994, p. 193). It may be demonstrated through (a) some resulting behavioral or cognitive change,
(b) a meta-report of the experience but without any metalinguistic description of a targeted underlying rule, or (c) a metalinguistic description of a targeted underlying rule (Leow, 2001). According to Schmidt (2001), noticing is the lower level of awareness and refers to the conscious registration of attended specific instances of language, or attention to “elements of the surface structure of utterances in the input, instances of language, rather than any abstract rules or principles of which such instances may be exemplars.” (p.3). On the other hand, understanding is at the higher level of awareness, and includes generalizations across instances such as knowledge of rules and metalinguistic awareness of linguistic features (Schmidt, 2001).

According to the hypothesis, whereas awareness at the level of noticing leads to mere intake, the awareness level of understanding promotes deeper learning marked by restructuring and system learning and is underscored by learners’ ability to analyze, compare, and test hypotheses. In other words, noticing is necessary for SLA, and understanding is facilitative but not required. Therefore, the only linguistic elements in the input that learners can acquire are those elements that they notice.

2. Attention, which is also defined as a cognitive process involving the ability to select and focus on particular stimuli from the environment while ignoring others, is responsible for noticing and controls access to awareness (Schmidt, 2001, p. 3). Therefore, learners must actively attend to linguistic stimuli in order to learn. In addition, learners’ acquisition of linguistic input is more likely to increase if their attention is consciously drawn to linguistic features (Schmidt, 1990, 1993, 2001, 2010). While many features and characteristics of the target language might influence and determine whether learners are able to notice a form in the input (e.g., frequency; perceptual saliency, and
communicative value of a given form/structure), other external factors including complexity and distributional characteristics of input, instructional treatment, and task characteristics (e.g., task requirements, task instructions, and input enhancement techniques) can affect what learners attend to and notice in input processing.

Barbieri and Eckhart (2007) also continue to expand the discussion on how corpus-based teaching materials help learners with noticing in order to learn a language feature based on White’s (1998) hypothesis on the role of input enhancement in noticing. Accordingly, it is hypothesized that an input flood coupled with typographical enhancement will help direct the learners’ attention to the targeted features and facilitate noticing. In SLA, an input flood refers to one particular type of learning opportunity where learners are exposed to multiple instances of the particular linguistic feature to be learned. Typographical enhancement is a relatively implicit technique of input enhancement, which is broadly defined as an attempt to make a certain linguistic form salient to L2 learners by manipulating characteristics of input to direct learners’ attention and increase perceptual salience. For example, Chapelle (2001) discusses various ways that computer-assisted language learning resources can enhance input such as the use of different colors to facilitate learners’ attention and noticing of crucial aspects of the input.

The processes of noticing (i.e., registering formal features in the input) and noticing the gap (i.e., identifying how the input to which the learner is exposed differs from the output the learner is able to generate) are distinct and both essential in L2 acquisition (Schmidt, 2010, p.724). The greatest distinction is that noticing the gap is more likely to occur during learners’ production. Because producing the language requires precision, learners will be able to notice the gap when knowledge is missing to produce the precise language
needed. As a result, noticing the gap helps them avoid errors in their production.

Therefore, Schmidt (2010) suggests that instruction should facilitate learners’ ability to notice the gap between their output and target language input in order to help them acquire a language feature effectively.

Overall, noticing is hypothesized to provide favorable conditions for second language acquisition in SLA theories. Meanwhile, as discussed earlier, the learning to write of L1 English undergraduates in college-level writing courses can be conceived of as a process of acquiring a second language. Therefore, the integration of the NH into my proposed pedagogy on source use is expected to facilitate students’ acquisition of using external sources in their writings. The next section continues to present how the DDL approach in Corpus Linguistics can be incorporated in the integrated theoretical framework for the development of the teaching materials in this study.

2.2.3. Data-driven Language Learning and Its Relevance to the Materials Development

The term of data-driven language learning (DDL), which was initially coined by Johns (1991), refers to a learning approach where learners are given access to more substantial amount of corpus data through the direct use of a corpus (i.e., a systemic collection of naturally occurring discourses including both spoken and written language) and a concordancer (i.e., an electronic tool to display concordances of actual examples of language use). Therefore, to adopt this pedagogy, two resources including a corpus and a tool to exploit the corpus are necessary (Gilquin & Granger, 2010). According to Johns (1991), giving learners direct access to concordances is the best way to explore the facts of linguistic use and develop their life-long language learning skills. The approach has also been developed and expanded since then (Aull, 2015; Flowerdew, 2015; Gilquin & Granger, 2010). There have been several claims about language learning and teaching in this approach, which are summarized below.
First, learners study the patterns of language use in a corpus mostly through observing concordances, and they figure out for themselves how a word or a phrase is used in the DDL approach (Johns, 1991, 1994). Aull (2015) further discusses how the patterns of language use through genre-based linguistic analyses can help student writers learn about writing. According to her, “sharing corpus-based patterns with students is ideally a way of helping students become more able to recognize the connection between writing expectations and concrete choices they have for their writing. In this fashion, it is a way to present students with options for their writing along with opportunities for deciphering why such patterns are convincing in a given rhetorical task” (Aull, 2015, p. 161).

As a result, inductive learning, which stimulates inquiry and helps learners to see patterns or generalizations because they are working with linguistic data, is the heart of the DDL approach. Moreover, learners have to become active in order to succeed in this learning approach, and teachers become facilitators of the learners’ inductive learning. Learners in the DDL approach are thus described as “travelers” (Bernardini, 2002, p.22) or “researchers” (Johns, 1997, p. 101). However, the DDL approach has been criticized because of its high cognitive demand on learners, although Johns believes that most students are “remarkable” enough to handle it (1994). Moreover, Gilquin and Granger (2010) argue that because inductive learning includes the element of discovery, it makes DDL more fun and motivating to learners.

Secondly, the NH with its underlying psycholinguistic processes plays an important role in the DDL approach (Flowerdew, 2015; Papp, 2007). Papp (2007, p. 209) states that the noticing hypothesis helps explain how learners can notice the discrepancies between the language they produce and the language they encounter in DDL activities:

First of all, learners need to be paying attention to form (Schmidt 2001; Robinson 2003), and they need to be able to consciously notice features of their
interlanguage grammar (ILG) and the target language (Truscott, 1998). Then, they need to be able to use inductive learning mechanisms to be able to make generalizations, analogies, and discern patterns in the target (Shaffer 1989). Next, they need to compare their ILG with the L2 (Klein 1986:62; James & Garret 1991:19), and find mismatches and discrepancies. This is what Kavaliauskiene [2003] called ‘a qualitative leap to conscious cognition.’

In addition, Flowerdew (2015, p. 20) argues that “concordance-based tasks requiring students to attend to recurrent phrases would seem to be an ideal means for enhancing learners’ input via noticing, leading to uptake.” She asserts that inductive learning as a mainstay of DDL “is entirely dependent on noticing,” which can be either student-initiated, involving spontaneous noticing by the learner, or teacher-directed. In teacher-directed noticing activities, students are prompted by the teacher to examine specific language points.

Many scholars have been supporting the guided induction approach in DDL activities in order to promote learners’ inductive learning so that students can develop habits of observing language in use and noticing usage, and become aware of language choices. Johansson (2009) defines the guided-inductive learning approach as “a combination of an inductive and a deductive approach where the elements of explanation and corpus use are tailored according to the needs of the student” (p. 42). Smart (2014) continues to expand the concept of guided induction by describing it as “an approach that provides a structured, scaffolded framework for inductive learning, places the learner at the center of the learning task, with the learner seeking to discover the nature of the grammar structure through interacting with the language” (p. 187). In other words, DDL instruction should be given to scaffold language learners to help them develop input processing strategies and activate the higher-order cognitive skills associated with inductive learning when working on DDL activities. Specifically, guided inductive learning instruction should facilitate learners’ selective attention to form and meaning connections of the
input by devising instructional activities that equip learners with conscious rules, or help them interpret the functional meanings of specific forms in the input. An example of guided induction is the ‘4Is’ DDL instruction proposed by Flowerdew (2009, p. 407). These 4Is stand for (1) illustration (looking at data), (2) interaction (discussion and sharing observations and opinions), (3) intervention (optional phrase where teachers facilitate learners’ inductive learning), and (4) induction (making one’s own rule for a particular feature).

Thirdly, the DDL approach helps learners focus on language use and raises their awareness about it, which results in a much more nuanced understanding of language use because their discovery of the target features is placed at the center of learning (Aull, 2015; Flowerdew, 2015; Johns, 1994). Johns elaborates that if we are concerned with both language function and form then we must use a “far more extensive, authentic, unmodified data than has been traditional in language teaching” (1994, p.294). In addition, because DDL affects both the process and the product of language learning, it is more transferable. Supporting Johns’ claim, Aull (2015) also asserts that that sharing and discussing linguistic patterns of language use across contexts also help foster students’ awareness of language use and the underlying values or expectations about language use within each context or genre. That awareness is also indicated to be important for developing students’ writing knowledge beyond academic genres or facilitating their transfer (Aull, 2015, p.161).

Gilquin and Granger (2010) continue to rely on the proposed cognitive processes in DDL by O’ Sullivan (2007) to support the claim on the higher likelihood of transfer through DDL activities. According to O’ Sullivan (2007), learners can acquire a number of crucial learning skills through the use of DDL activities which are “predicting, observing, noticing, thinking, reasoning, analyzing, interpreting, reflecting, exploring, making inferences (inductively or
deductively), focusing, guessing, comparing, differentiating, theorizing, hypothesizing, and verifying” (p. 277). According to Gilquin and Granger (2010), “since these skills are general cognitive skills, they may be also transferred to other fields of study.” (p. 360).

Because inductive learning is considered as the essence of DDL (Johns, 1991, 1994), this approach has been shown to “correspond closely to concurrent thinking in educational research in general, and in language learning pedagogy in specific” (Chambers, 2010, p. 345). According to Hyland, the DDL approach provides a way “for learners to take more active, reflective, and autonomous roles in their learning” (2002, p.120). According to him, in DDL activities, learners are encouraged to observe corpus data, make hypotheses, and formulate rules in order to gain insights into language. Therefore, they become more involved, more active, and ultimately more autonomous as well as empowered in their learning process. These factors are also directly related to their gain in confidence as a language user.

Furthermore, Flowerdew (2015) has associated DDL with the constructivist learning theory, which is described as “an educational philosophy which views acquisition of knowledge as a dynamic process, with learners in the driving seat” (p. 18). According to her explanations, learners in this approach have to be active in their language learning through inductive processes such as forming and testing hypotheses on the use of a linguistic feature. They also have to “apply their general cognitive problem-solving mechanisms and existing background knowledge to foster an understanding of new data” (Flowerdew, 2015, p.19). Furthermore, giving learners multiple perspectives into new data increases the likelihood of uptake. Therefore, a corpus-based tool in the DDL approach should provide learners with multiple ways of entry to a corpus to match their needs and learning style preferences.
The next section continues to illustrate how the three theoretical grounds including the SFL perspective and genre-based analyses, the Noticing Hypothesis in SLA, and the DDL approach helped the development of the language teaching materials on source use for college students in my study.

2.2.4. The Integrated Framework for the Development of the Materials on Source Use

The claims from the genre-based approach in SFL, the NH in SLA, and the DDL approach from Corpus Linguistics provide a firm theoretical ground for the development of the materials on source use in this dissertation. The characteristics of the materials are thus intended to facilitate learners’ selective attention to specific features of the target language feature so that they can notice how each specific feature is used in the documented essay genre and induce rules of its usage in the specific context.

In order to achieve that noticing goal, a web-based corpus tool was developed with a menu containing different features of source use. A student can explore each specific feature such as how the name of a source can be integrated into a paper by clicking on the corresponding tab in the menu and looking at the collection of examples where the target feature is color-coded. In addition, the 4Is approach in the guided induction theory in the DDL approach also gives a theoretical framework on how the delivery of the teaching materials (the lesson) is structured in order to facilitate learners’ inductive learning when working with concordance lines. For instance, the lesson in my study was designed to consist of four stages. In the first stage of illustration students are given descriptions and examples of different features of source use that they learn in the lesson. After that, they are guided to attend to several specific features of source use by answering multiple-choice questions in the interaction stage. In the intervention stage, instructors could provide one-on-one support for students by answering any questions about the
lesson. Finally, students are asked to generate strategies about source use in the target genre that they are writing in the *induction* stage.

Moreover, based on the claim in the NH about the importance of noticing the gap in improving the quality of learners’ production, the instructions and questions in the lesson specifically require learners to attend to specific features of source use, and focus on comparing their practice of source use in their first drafts with the patterns of source use in the A graded papers. This development of the lesson and the selection of the A graded papers as the input for student writers are thus intended to enhance learners’ attention to specific features and their recognition of any gap about source use in their language output from that in the A graded papers. Further detailed descriptions of how these theoretical grounds were applied in the development of the materials on source use are provided in Chapter 3.

### 2.3. Developing the Theoretical Framework for the Evaluation of the Materials

Researchers have made a number of suggestions for CALL evaluation studies (Chapelle, 2001; Norris, 2016; Patton, 2008). Chapelle (2001) argues that an evaluation of CALL materials should be based on a set of criteria informed by language learning theories. Moreover, she points out that CALL researchers need to take into account contextual settings in their descriptions of CALL materials and to develop CALL evaluation as a context-specific argument due to the influence of contextual factors. In other words, researchers should describe and interpret the results of their evaluation studies within the specific context of implementation. Chapelle (2001) also provides a framework of CALL task appropriateness with six criteria for evaluation.

Supporting the development of a theoretical framework in CALL evaluation studies, Norris (2016) has recently indicated the need to develop a theory of action in CALL evaluation studies as an important direction for future studies. According to him, the provision of the theory
of action in a CALL evaluation study allows researchers to understand their underlying mechanisms between the implementation of CALL materials and changes in learners’ and teachers’ behaviors, attitudes, and knowledge, which is very important to the implications of CALL evaluation studies.

As the goal of my evaluation is to examine if the principled design of the materials would work for the target learners or not, the linear logic model introduced by Patton (2008) was found sufficient to capture the nature of the problem under investigation. Particularly, the linear logic model helps theorize how the pedagogical design principles of the materials on source use are intended to prompt effects on the learning of the students who use the materials in my project. Therefore, the evaluation criteria in Chapelle’s (2001) framework for CALL task appropriateness and Patton’s (2008, Chapter 10) guidance were combined to develop the theory of action framework for the teaching materials in my study. In the following sections, I will describe the development before explaining the framework and its implications for my evaluation of the teaching materials in the study.

2.3.1. The Linear Logic Model of the Theory of Action for the Evaluation of the Materials on Source Use

The development of the theory of action framework for the teaching materials on source use in my study involves the integration of the three theoretical grounds of the teaching materials (i.e., SFL, Corpus Linguistics, and the NH in SLA), and the criteria in Chapelle’s (2001) CALL task appropriateness framework into the linear logic model presented by Patton (2008). The identification of the three theoretical grounds in SFL, Corpus Linguistics, SLA and the criteria in Chapelle’s (2001) framework was critical to the development of the theory of action framework for the teaching materials in my study.
The claims in each of the theoretical grounds provide a principled approach for the evaluation of the materials thanks to their specific hypotheses about the intended learning impacts of the material characteristics. First, the claims in SFL about the genre-based approach enabled me to define the characteristics of the materials and the criteria to evaluate them. Based on the methodology in Corpus Linguistics, a collection of A graded papers in that target genre that learners were going to write was collected and analyzed for the materials development. This design principle is intended to direct learners’ attention to understand the feature of source use in the target context of use and gauge their interest and engagement in learning the materials. As a result, the evaluation of the design principle concerns how the materials would lead to learners’ focus on the meaning of the source use features in the target genre and their perceptions of the appropriateness of the materials. Similarly, the claims on the role of attention in noticing and noticing in SLA in the NH led to the characteristics of the materials and criteria for my evaluation. These claims were used to generate hypothesized learning processes prompted by the material characteristics. For example, the claims in the NH led to the provision of color-coded multiple examples of citing sentences in the A graded papers and visuals which help students notice specific features of source use. As a result, one of the evaluation criteria of the materials is whether the noticing of these features would lead to any students’ gains in knowledge about source use, their awareness about source use, and their revision of source use in their papers. Finally, the claims in the DDL approach led to the use of concordance lines in the web-based corpus tool and guided induction in the Moodle-based lesson of the teaching materials. The claims on the effects of these characteristics on the students’ learning processes then allowed me to generate directions for my evaluation of the materials.
The six qualities in Chapelle’s (2001) framework on CALL task appropriateness were also instrumental in shaping the evaluation criteria of the theory of action framework for the teaching materials. The integration of Chapelle’s (2001) framework is explained by the strong association with SLA theories of the framework. Particularly, the development of Chapelle’s (2001) framework is also based on the instructed SLA theory, so the six qualities in her framework capture the characteristics of the materials that are supposed to provide good learning opportunities for learners’ acquisition of a second language. Moreover, the framework is broadly developed so that each researcher can make specific questions on each criterion based on his or her own research context. The six criteria for evaluating CALL task appropriateness in Chapelle’s (2001) framework are (1) language learning potential, (2) learner fit, (3) meaning focus, (4) authenticity, (5) positive impact, (6) practicality. All these six criteria are summarized in Table 1.

Table 1. *Criteria for CALL Task Appropriateness (Chapelle, 2001, p. 55)*

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<th>Criteria</th>
<th>Explanations</th>
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</thead>
<tbody>
<tr>
<td>Language-learning</td>
<td>The degree of opportunity present for beneficial focus on form.</td>
</tr>
<tr>
<td>potential</td>
<td></td>
</tr>
<tr>
<td>Learner fit</td>
<td>The amount of opportunity for engagement with language under appropriate</td>
</tr>
<tr>
<td></td>
<td>conditions given learner characteristics.</td>
</tr>
<tr>
<td>Meaning focus</td>
<td>The extent to which learners’ attention is directed toward the meaning of</td>
</tr>
<tr>
<td></td>
<td>the language.</td>
</tr>
<tr>
<td>Authenticity</td>
<td>The degree of correspondence between the CALL activity and target language</td>
</tr>
<tr>
<td></td>
<td>activities of interest to learners out of the classroom.</td>
</tr>
<tr>
<td>Positive impact</td>
<td>The positive effects of the CALL activity on those who participate in it.</td>
</tr>
<tr>
<td>Practicality</td>
<td>The adequacy of resources to support the use of the CALL activity.</td>
</tr>
</tbody>
</table>
The first criterion, *language learning potential*, is based on theoretical approaches to SLA, referring to the degree to which a task promotes focus on form. At the same time, the task should also enhance *meaning focus* which refers to the need for learners’ attention to be directed toward the meaning of the language required to complete the task. Also, a task design should consider *learner fit*, including learner characteristics such as learning style, age, and willingness to communicate. The next criteria, *authenticity*, refers to the links between classroom and real-world language use centering on tasks and texts that learners can find relevant in their language use beyond the classroom. Beyond *language learning potential, positive impact* is to describe effects of a CALL task on learners such as learner autonomy and metalinguistic and pragmatic awareness. The final criterion, *practicality*, considers the number of resources needed for the task implementation. Four out of these six criteria in Chapelle’s (2001) framework are selected to integrate into the theory of action framework for the evaluation of the teaching materials. They are *language learning potential, meaning focus, learner fit, and impact*. The integration of these four qualities into the development of the theory of action framework not only allowed me to define but also to operationalize each criterion in the framework fully. The final theory of action framework for the teaching materials on source use is presented in *Figure 1* below.
**Figure 1.** The Theory of Action Framework for the Evaluation of the Materials on Source Use
As shown in the figure, there are five major components in the model, and their linear causal relationships are presented using arrows. The first component is the underlying theories for the principles and characteristics of the design and development of the teaching materials on source use. It includes three theoretical principles which directly lead to the second component, which relates to design characteristics and components of the teaching materials on source use. The three specific theoretical grounds are the genre-based approach in SFL, the NH by Schmidt (2001, 2004, 2010) in the instructed SLA field, and the DDL approach proposed by Johns (1991, 1994). Specific claims and principles from each of the theoretical grounds are then shown to inform the characteristics of the materials. For example, the second characteristic, which is the combination of input flood and input enhancement, is based on the claims on the importance of noticing in inductive language learning and language acquisition as well as the role of input and instruction in enhancing noticing.

The characteristics of the materials in the second component are shown to cause immediate reactions and action mechanisms listed under the hypothesized learning processes in the third component. The third column of the figure presents the hypothesized immediate reactions including actions and behaviors of learners when working with the materials. These immediate reactions are then directly linked to the three major aspects of learning processes informed by Chapelle’s (2001) framework. As described above, the four criteria in Chapelle’s (2001) CALL task appropriateness framework are integrated as a crucial part of the framework because these criteria capture the favorable learning processes and outcomes as informed by SLA theories. As shown in the fourth and fifth columns of the figure, the criteria include language learning potential, meaning focus, learner fit, and impact. As shown in the third
column, the learners are hypothesized to use the web-based corpus tool to complete the lesson and to spend time on exploring the features of source use.

Further explanations about the causal relationships of immediate reactions and action mechanisms in the framework are provided here. As shown in the third column of the figure, the students will follow the instructions given in the lesson, and use the tool at the same time to observe patterns in each feature of source use in the A graded papers. That exploration will lead to their noticing of differences in their source use practice in their drafts and the practice in the A graded papers. For instance, they might notice a formatting error in citations that they have in their first papers. They might also spend time looking at the provided citing sentences in the tool to understand each feature. After answering the questions in the lesson, they should click on the “Check” button to double check their answer, and then read the provided explanations to fully understand each feature of source use. Moreover, as described in the fourth column of the figure about learner fit, the students may feel interested when completing the materials as they are relevant to the assignment that they are doing in the course. They may also find the working experience with the lesson sufficiently challenging, engaging, and useful for them.

The intended learning processes in the third component result in the learners’ learning gains and other impacts on both the learners and instructors who use the materials as described in the fourth component of the framework. As shown in the fifth column of the figure, the intended effects of the characteristics of the materials on source use include three major learning gains and two important impacts. In terms of learning gains, the learners will increase their knowledge about source use such as different forms and functions of source use in documented essays. For instance, they can learn about different reporting verbs to report an external source by interacting with the corpus-based tool. Such understanding will help them raise their metalinguistic and
pragmatic awareness about source use in the target genre and language use in general.

Particularly, the observing and explaining of the patterns of source use in the A graded corpus will lead to their increased awareness about the relationship between the patterns of language use and its context of use, and the connection between the features of language use and its rhetorical effects. Thirdly, the learners are hypothesized to increase knowledge about revision strategies for their first drafts after the training. For instance, by comparing their practice of source use and that in the A graded papers, they will be able to identify weaknesses in terms of source use in their first drafts. The use of the teaching materials on source use will also bring positive impacts on both the learners and instructors. They will feel positive about their learning and teaching experiences and find the materials beneficial to their learning and teaching. Finally, these intended effects in the fourth component are then used to inform the revisions of the materials design and development principles, which is the fifth component of the framework and the ultimate goal of the project.

Overall, the theory of action framework for the evaluation of the teaching materials shows the relationships between the pedagogical design principles of the materials on source use and the intended impacts on learning processes and experiences of the users. The linear logic model of the theory of action framework helps conceptualize the complexities involved in the learning of the materials which are essential to the evaluation of the materials under implementation. It also helps connect the theoretically based design principles and the evaluation of the materials through hypotheses on changes in learners’ learning processes and intended effects while and after working with the materials. In the next section, I will continue to highlight the two important implications of the development of this framework in my study.
2.3.2. Implications of the Theory of Action Framework for the Study

There are two major implications of the theory of action framework for the evaluation of the teaching materials on source use. The development of this framework first informed the articulation of research questions for this study including the inclusion of process-based research methods in the evaluation of the effectiveness of the materials. The second implication of the framework was to opt for a theoretically informed data analysis approach to investigate learners’ perceptions about the materials. Each of these implications is presented below.

The articulation of research questions

The theory of action framework for the materials on source use directed the CALL evaluation in this study. Accordingly, the four major criteria in the hypothesized learning processes and intended effects of the framework were used to shape the four areas of investigation in this project. These areas are language learning potential, meaning focus, learner fit, and impact. In terms of language learning potential, two major relevant aspects are whether the characteristics of the materials lead to the learners’ focus and notice of source use features, and whether these focusing and noticing processes result in their learning gains. Regarding meaning focus, the research question is whether the characteristics of the materials helped the learners’ construction of meaning of source use features in the target genre. Similarly, corresponding to the three aspects of learner fit as presented in the framework, three research questions for this quality of the materials are how the users perceived the difficulty, the student engagement, and the usefulness of the materials. The last quality of the materials, impact, is evaluated based on the perceptions of the users about their experiences with the materials. The specific research questions of the study are presented in the next section.
Importantly, as hypothesized learning processes are a crucial component of the framework which lead to intended effects of the materials, process-based research methods were recruited and played an important role in the research design of this study. Particularly, because the linear causal relationships between the design principles and characteristics of the materials and the intended effects on the users of the materials are based on the hypothesized learning processes from the three theoretical grounds in the framework, using process-based research methods is critical to reveal if the hypothesized processes on the learners by the materials happen. The inclusion of the process-based research approach in this study also aligns with Chapelle’s (2001) suggestion on the importance of process-based research methods in CALL evaluation research which has also been shown as a missing piece in the current body of work in DDL (Boulton, 2010). Accordingly, the evaluation studies of DDL materials development have so far mostly relied on assessing learners’ outcomes and collecting learners’ attitudes or perceptions of the effectiveness of DDL instruction (Cobb, 2006; Cobb & Boulton, 2015; Champers, 2007; Römer, 2011; Smart, 2014).

Chapelle (2001) supports her suggestion on the incorporation of process-based research methods in CALL evaluation studies with two main reasons. The first reason is that the long-term nature of language acquisition makes it difficult to examine the effects of CALL on autonomy or inductive learning. Moreover, assessing learning outcomes by test scores on their mastery of a targeted discourse feature are “too limiting” because the results are unable to provide detailed descriptions of learning gains (Chapelle, 2001, p. 94). Therefore, it could also be challenging for researchers to interpret whether the measured changes in learners’ outcomes could be attributed to the use of CALL or other factors, contributing less to the theoretical and empirical infrastructure of CALL learning tasks. She explains:
First, CALL is typically used as one source of language practice for learners in a larger program of instruction, so the idea that learners would “master” the language of the CALL activity is not realistic… Assessment of outcomes alone gives a very gross summary of results of CALL use rather than the more delicate analysis that holds promise for improving CALL tasks. (Chapelle, 2011, p. 94)

In her reasoning, process-based studies which investigate how students use technology would possibly provide meaningful insights for CALL evaluation research. For example, taking the interactionist perspective in SLA theories which places the importance of interaction in the acquisition of language, Chapelle (2001) explains that it will be meaningful to know which learning processes are provoked by a learning task when a learner completes a designed task with specific characteristics. Understanding how the designed feature of a learning task involves expected learning processes during learner-computer interaction will contribute to the evaluation of the effectiveness of a CALL learning task. Therefore, it is recommended that process-based CALL evaluation research should have a description of learning goals of the task which are stated in terms of desired learning processes. Some process-based learning goals are (1) negotiation of meaning; (2) noticing gaps. As a result, depending on the learning goals and task types, CALL process data could be examined for evidence of one of these learning process goals.

The next subsection continues to illuminate the second implication of the linear logic model of the theory of action in this study which is the selection of SFL as a theoretical framework to explore users’ perceptions of the four qualities of the materials.

**Using Systemic Functional Linguistics to explore users’ perceptions of the materials**

Based on the first implication of the developed theory of action framework for the materials in this study regarding the role of process-based research methods and the importance of exploring users’ perceptions of the materials in CALL evaluation research, this section continues to present how SFL can bring insight into the users’ learning and teaching experiences
with the experimental CALL teaching materials. Several researchers have shown how SFL could provide a concrete framework for qualitative analysis in order to obtain insights into texts, such as participants’ in-depth perceptions or behavioral patterns (Howley, Mayfield, & Rosé, 2013; Huffman, 2015; To, Le, & Le, 2015). According to these researchers, SFL provides a systematic framework to examine language resources for their meaning potential, which will allow researchers to understand the participants’ construction of meaning through the language resources that they use in a specific situational and cultural context. To, Le, and Le (2015) assert that SFL “plays a significant role in analyzing qualitative data, as it opens windows into the process of understanding, evaluating, and interpreting the texts” by providing “both research tools and theoretical insights for understanding and interpreting texts” (pp. 135-136).

Other researchers have indicated that SFL also provides a framework that addresses language as a means of learning (Mohan & Slater, 2005, 2006; Slater & Butler, 2015; Slater & Mohan, 2010). Accordingly, SFL views language as the primary means of learning about the world. It views knowledge as meaning, a resource for understanding and acting on the world, and it sees learning as a process of making meaning through language. As Halliday (1978, p. 30) puts it, learning is considered as “a linguistic process.” An important concept offered by the SFL theory for studying language as a means of learning is social practice which is explained as a unit of culture that “involves cultural knowledge and cultural action in a theory-practice or reflection-action relation” (Mohan, 1986, p. 13). For example, learning source use skills in documented essays is learning a social practice as it involves students’ acquiring of both knowledge and practice skills to integrate sources within a specific context.

Taking the functional view of language as discourse in the context of social practice, Mohan (1986, 2001) introduces the Knowledge Framework (KF), which can be applied to
investigate knowledge structures in learning. The framework “provides a theoretical basis for aspects of language as a medium of learning” and “links between second language development and first language development and between language development and educational development generally” (Mohan, 2001, p. 107). In Mohan’s KF (1986, 2001), there are two levels of discourse: the knowledge or theory level, which includes the knowledge structures (KS) of classification, principles, and evaluation, and the action or practice level, which includes the corresponding KSs of description, sequence, and choice. Each of the KSs has both language features and thinking skills associated with it. For example, the “be” verb is the language most frequently associated with the classification KS as it is used to indicate a relational process (e.g., it is complex) and existence (e.g., there are).

Because the goal of this study is to investigate users’ perceptions of their learning and teaching experiences with the designed teaching materials on source use, SFL is found to be appropriate as it helps provide a theoretical framework for analyzing users’ responses. The theoretically grounded linguistic analyses of users’ responses may uncover shades of meaning in their learning and teaching experiences with the materials. In other words, applying the concepts and techniques in SFL can afford a systematic examination of the users’ perceptions of the qualities of the teaching materials because their evaluations are lexico-grammatically realized, this approach will yield an insightful understanding of their experiences.

Based on the research goals of this study, the ideational meta-function and the appraisal system in the interpersonal meta-function are of great potential to investigate the users’ perceptions of their experiences through their interview and introspective data in this project. While the ideational meta-function involves how a person represents his or her experience of the world through his choice of language resources, the appraisal system in the interpersonal meta-
function deals with how language resources are used to show his or her evaluation or attitude to that experience. These two systems would provide relevant analytic concepts to examine the learners’ expression of their experiences with the CALL materials in this study meaningfully and insightfully. Further descriptions of the key analytic concepts are briefly given here.

First, the ideational system, which is also called the grammar of experience by Halliday (1994), assists in identifying different types of working processes involved in learning experiences, and their associated circumstances. According to Halliday (1994), a language user uses language resources to construct his or her experience of the world, and these can be examined in terms of processes, participants, and circumstances. Processes refer to types of activities involved in one’s experience and are expressed through his or her choice of verbs. Participants, which indicate sources or targets of those processes, are realized through nominal groups. And circumstances, which describe associated situational characteristics, are expressed through the use of adverbial groups or prepositional phrases. In Halliday’s (1994) ideational system, each of these major components is also further classified into different categories. For example, processes are divided into six types: behavioral, existential, material, mental, relational, and verbal. Explanations of these sub-categories and examples are briefly summarized in Table 2 below.
Table 2. Sub-categories of Processes in the Ideational System (Derewianka, 1990)

<table>
<thead>
<tr>
<th>Sub-categories of Processes</th>
<th>Explanations &amp; Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral</td>
<td>Behavioral processes relate to a particular kind of human behavior (e.g., watching, listening, smiling, grinning).</td>
</tr>
<tr>
<td>Existential</td>
<td>Processes that state a certain thing exists (e.g. there is, there were).</td>
</tr>
<tr>
<td>Material Action</td>
<td>Verbs describe doings and happenings, and involve an input of energy (e.g., click, open, close).</td>
</tr>
<tr>
<td>Material Event</td>
<td>Verbs describe thinking and reflecting about the world (e.g., assume, believe, dream, consider, conclude).</td>
</tr>
<tr>
<td>Mental Cognition</td>
<td>Verbs describe feelings about things or affection (e.g., admire, love, like).</td>
</tr>
<tr>
<td>Mental Affection</td>
<td>Verbs describe perceptions with our senses (e.g., feel, glimpse, hear, look).</td>
</tr>
<tr>
<td>Relational</td>
<td>The function of these processes is to link one thing to another. The verb itself is empty; it is not providing information, but simply relating two elements (e.g., be, act as, represent, equal, add up to, define, constitute, indicate, appear, look).</td>
</tr>
<tr>
<td>Verbal</td>
<td>Verbal processes generally refer to ‘someone saying something.’ (e.g., say, ask, answer, convince, debate, report, request).</td>
</tr>
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</table>

In order to investigate the four qualities of the CALL materials in this study, the classification of processes is thus carefully considered in the ideational analysis to examine which types of actions and behaviors are involved in the verbal construction of the users’ learning and teaching experiences with the materials. The selection of process types for examining the teaching and learning experiences is grounded in Mohan’s (1986, 2011) Knowledge Framework to identify which kinds of thinking skills or knowledge are expressed in the users’ responses. Accordingly, the three pairs of KSs in the framework are shown to correspond to Halliday’s three main groups of process types in the ideational system as illustrated well in the cover of his 1994 book (see also Slater & Butler, 2015; Slater & Mohan, 2010). Rather than detailing an analysis based on the six types of processes, Mohan’s work has
shown that the three divisions of being, doing, and sensing reveal highly useful patterns. Descriptions and classifications are constructed using processes of being (the world of abstract relations), sequences and principles are constructed using processes of doing (the physical world), and choice and values are constructed using processes of sensing (the world of consciousness).

Using these categories, for example, Slater and Mohan (2010) compared the teaching of a science teacher and an ESL teacher by examining the ideational meaning of their teaching discourses within their teaching discourses to show how each had similar pedagogical goals. Specifically, each teacher was examined in terms of how he or she used language resources to construct types of knowledge and thinking skills in science for their students. Each type of knowledge and thinking skills was shown to correlate with a main class of verbs: the identification and classification of things, qualities, or processes correlates with verbs of having and being; the representation of events and activity sequences, including cause-effect relations, correlates with verbs of doing and happening; human consciousness, including mental and verbal processes correlates with verbs of perceiving, thinking, feeling, saying. This Knowledge Framework analysis approach is also employed in Mohan and Slater (2005; 2006) and Slater and Butler (2015). To generate meaningful themes about the users’ experience of using the materials in the present study, a close examination of the associated participants and circumstances where those three main types of identified processes occur is imperative after the coding of processes. Such ideational analysis is thus expected to provide an understanding of how and what features of the designed materials are related to the users’ working processes when using the materials.

The appraisal system also promises to bring an insightful understanding of the users’ evaluation of the materials and their experiences with the materials as it allows for the
examination of how speakers express their opinions and attitudes with language. The appraisal system, which is a part of the interpersonal meta-function of SFL, is particularly concerned with evaluation which is also defined as “the kinds of attitudes that are negotiated in a text, the strength of the feelings involved and the ways in which values are sourced and readers aligned” (Martin & Rose, 2003, p. 22). The appraisal framework proposed by Martin and White (2005) is currently the most developed. In this framework, the authors provide a taxonomy of the language resources used for evaluation to convey attitude [emotions (affect), judgements of behaviors (judgement), and evaluation of quality or worth of objects or events (appreciation)], engagement (one’s commitment or stance to the own evaluation in the assessment of others’ evaluations), and graduation (modifications to the strength of attitude and engagement). Different lexico-grammatical resources such as evaluative lexis, modal verbs, model adjuncts, quantification, and repetition are used to realize one of these systems in any text. For example, adjectives are one of the most popular language sources of attitude because they describe emotions (e.g. sad, happy, excited) or quality and characteristics of things or people (e.g. effective, entertaining, interactive). Similarly, a choice of a modal adjunct might result in a difference in the strength of a speaker’s commitment to his or her evaluation (e.g. it is difficult vs. it is probably difficult).

Because the goal of this research is concerned with how learners perceive the qualities of the materials through their experiences with them, the appraisal category of attitude is of importance. Further analyses of language resources for engagement and graduation for the identified resources of attitude may also help yield a more insightful understanding of users’ evaluations of the materials. In other words, analyses of appraisal resources based on Martin and White’s (2005) framework can assist in answering not only whether users have a positive evaluation of their experiences working with the materials, but also how strong their evaluations
are. Further descriptions of how the three systems in Martin and White’s (2005) appraisal framework that forms a theoretical ground for qualitative analyses in this project are provided below.

The appraisal category of **attitude** includes all the language sources that help convey a speaker’s emotional reactions (**affect**), evaluation of the quality or worth of things or processes (**appreciation**), judgement of people (**judgement**). Because the current study investigated users’ perceptions of the qualities of the materials through their learning experience, the resources for the **affect** and the **appreciation**, which express emotions and evaluations of things or objects, were considered more suitable to explore because the **judgement** resources are used to judge humans’ behaviors. The language resources for these systems can also be classified as positively or negatively charged by the speaker. For example, evaluative lexis that may convey positive appreciation and affect are *elegant, excellent, engaged,* or *inspired* while resources that may construe negative appreciation and affect are *useless, confusing, bored,* or *discouraged.*

The engagement system of the appraisal network is concerned with the lexico-grammatical resources used to “indicate the speaker’s degree of commitment to the appraisal being expressed” (Martin, 2003, p. 142). Based on the concept of dialogism, which sees a text as a dialogistic construction between the interlocutor and other voices, Martin and White (2005) further explain that a speaker in any context uses language resources in the engagement system to establish his or her position or stance in a relationship with the audience and others. They also classify the language resources in this system into dialogistically **contracting** and **expanding** resources. While **contracting** resources are used to contract one’s position where no alternative evaluations are invited, **expanding** resources are to expand a position where alternative evaluations are acknowledged. An example of a statement with contracting resources is “the
materials are very effective” while that statement can be restated with expanding resources as “I think the materials are very effective for me.” In the first statement, there is no room for a dialogistic alternative whereas the second one recognizes other potentially different evaluations or voices because the use of “I think” and “for me” helps emphasize the singular perspective of the speaker.

Several language resources which provide the grounds for an interlocutor’s engagement with propositions and opinions are: modal verbs (e.g., may, might, could, will, and must), modal adjuncts (e.g., perhaps, probably, and definitely), modal attributes (e.g., it’s possible/likely that, it seems like), circumstances (e.g., in my opinion, personally, for me), verb or attribute projections (e.g., I think, I suspect, I bet, I guess) hedges and boosters, and intensifiers (Derewianka, 1990; Lancaster & Aull, 2015; Martin & White, 2005). In sum, the engagement resources allow a person to express how he or she is committed to the evaluation by positioning himself or herself to the claim with respect to other perspectives. Because this research studies students’ evaluations of the effectiveness of the materials, conducting an analysis of engagement resources will help show how strongly students feel about their claims.

The next system in Martin and White’s (2005) appraisal framework is graduation which refers to lexico-grammatical resources interlocutors use to mark the force (intensity or amount) and focus (preciseness) of their opinions. Specifically, graduation deals with language resources that function to modify a speaker’s expression of attitude and engagement. As a result, analyses of graduation resources allow researchers to examine how speakers convey more or less positivity in attitude, and certainty in engagement. Some examples of graduation resources to scale up or scale down the strength of attitude and engagement in an utterance are extremely, very, somewhat, kind of, a bit. Based on Martin and White’s (2005) graduation resource scaling
in attitude and engagement, Huffman (2015) has developed two separate visual depictions of graduation resources to scale learner’s attitude and engagement to analyze the students’ open-ended survey responses and stimulated recalls in her CALL evaluations study. Each of the continua is presented in the two figures below.

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
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</thead>
<tbody>
<tr>
<td>Kind of</td>
<td>More</td>
<td>Completely</td>
</tr>
<tr>
<td>A little bit</td>
<td>Really</td>
<td>Definitely</td>
</tr>
<tr>
<td>Just</td>
<td>Very</td>
<td>Absolutely</td>
</tr>
<tr>
<td>Sort of</td>
<td>Significantly</td>
<td>Totally</td>
</tr>
<tr>
<td>(Not) quite</td>
<td>So</td>
<td>First</td>
</tr>
<tr>
<td>Still</td>
<td>Too</td>
<td>Most</td>
</tr>
<tr>
<td>Less</td>
<td>Mostly</td>
<td>Certainly</td>
</tr>
<tr>
<td>At least</td>
<td>Probably</td>
<td>Adjective + est (e.g. greatest)</td>
</tr>
<tr>
<td>Pretty</td>
<td>Multiple</td>
<td></td>
</tr>
<tr>
<td>Even</td>
<td>Particularly</td>
<td></td>
</tr>
<tr>
<td>Possibly</td>
<td>Especially</td>
<td></td>
</tr>
<tr>
<td>Maybe</td>
<td>A lot</td>
<td></td>
</tr>
<tr>
<td>Some</td>
<td>Adjective + er (e.g. greater)</td>
<td></td>
</tr>
<tr>
<td>In general</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eventually</td>
<td></td>
<td></td>
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<tr>
<td>Potentially</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yet</td>
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</tbody>
</table>

*Figure 2. Continuum of Graduation Resources Used to Scale Learners’ Appreciation of the Tool Usefulness (cited from Huffman, 2015, p. 99)*

Figure 2 illustrates the continuum of graduation resources to scale learners’ appreciation of usefulness of the materials in her study. As can be seen, the continuum has three ranges from “low” to “medium” and “high.” In the continuum, specific language resources are provided in each range based on the intensity of the source in conveying evaluations of students. For example, the choice of using the superlative form of an adjective or an adverb in an utterance (e.g. the most + adjective/adverb) shows a higher level of appreciation in one’s evaluation of an object or process than using the adjective or adverb on its own.
Figure 3 presents the visual depiction of the three-level scale of graduation in learner engagement in their evaluations of the CALL tool. Various types of language resources are also situated in each range of the scale. The resources under the “low” graduation category represent speakers’ more tentative stance with regards to their assertions about the tool while those in the “high” graduation category signal speakers’ enhanced certainty or confidence with regards to their evaluations. For example, as shown in the third row of the scale, the use of modal verbs can indicate a certain level of graduation in learner engagement in their evaluation of the tool (e.g. “must” for “high” engagement or certainty versus “could” for “low” engagement or certainty).

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could</td>
<td>Think</td>
<td>Should</td>
</tr>
<tr>
<td>Would</td>
<td>Can</td>
<td>Must</td>
</tr>
<tr>
<td>Appear to</td>
<td>Mean</td>
<td>Doesn’t</td>
</tr>
<tr>
<td>Might</td>
<td>Wish</td>
<td>Is/was</td>
</tr>
<tr>
<td>For me</td>
<td>Want</td>
<td>Because</td>
</tr>
<tr>
<td>Guess</td>
<td>Say</td>
<td>The fact that</td>
</tr>
<tr>
<td>Seems like</td>
<td>Find</td>
<td>Yes/No/Uh huh</td>
</tr>
<tr>
<td>In my mind</td>
<td>Remember</td>
<td>Know</td>
</tr>
<tr>
<td>Don’t know</td>
<td>Hope</td>
<td></td>
</tr>
<tr>
<td>Not sure</td>
<td>(Dis)agree</td>
<td></td>
</tr>
<tr>
<td>Wonder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 3. Continuum of Graduation Resources Used to Scale Learner Engagement in their Evaluation of the Tool Usefulness (cited from Huffman, 2015, p. 101)*

As my research shares the same evaluation research goal as Huffman’s (2015) study, her two continua are useful for the current qualitative analysis. An analysis of graduation resources in users’ evaluations of the teaching materials and their experiences will help promote an understanding of the users’ strength of evaluation and the degree of commitment to their
opinions. Such analysis will afford a closer examination of how strongly participants feel about their claims of the effectiveness of the materials by their scaling of evaluative and emotional resources, and by their grading of engagement resources.

Overall, Martin and White’s (2005) appraisal network provides the conceptual tools to explore participants’ perceptions of the four qualities of the materials in this study. The engagement and graduation resource exploration will provide supplementary analyses to the appreciation resource analysis to gain further insights into participants’ evaluations of the qualities of the materials. Such analyses of the appraisal resources in the participants’ responses will thus yield an in-depth and theoretically informed understanding of their evaluations of the materials.

Overall, the development of the theory of action framework for the materials on source use in this study led to the identification of the four major evaluative criteria and the selection of SFL as a theoretical framework to analyze qualitative data in this study. The next section summarizes the literature review presented in this chapter including the theoretical grounds for the development of the materials in this study and the theory of action framework for the evaluation of the materials before articulating the specific research questions for the project.

2.3.3. Chapter Summary and Research Questions

This chapter presents the theoretical grounds for the development and evaluation of the teaching materials on source use for college students in a college-level composition course. These three theoretical grounds come from genre-based analyses in the SFL perspective, the NH in the instructed SLA field, and the DDL approach. Based on the claims regarding language learning in these theoretical grounds, the development of the computer-mediated DDL materials on source use in this study aimed at:
- Providing learners with a good language learning opportunity through guided-induction instruction by observing and noticing language features in citations, examining and interpreting patterns of language features in citations, and inducing rules of language use in citations and citation practices in the target genre,
- Providing learners with knowledge about citation features and functions of citation in academic writing through numerous authentic examples in the target genre so that they could apply to their use of citation in the revision of their papers,
- Raising learners’ metalinguistic and pragmatic awareness about citation use in the target genre and academic writing to prepare for their revision of citation use in their papers, and
- Helping learners to notice any gap between the citation practices of highly-graded student papers in the target genre and their citation practices in the first draft of the assignment.

To achieve these learning goals, the materials on source use were specifically designed with pedagogical characteristics that were informed by the three theoretical grounds. For example, the structure of the teaching materials followed the guided induction instruction approach in the DDL literature where learners are instructed to induce rules about source use features after observing multiple examples of the target feature.

The chapter also introduced the theory of action framework for the evaluation of the study which connects the underlying design principles of the materials with the intended learning processes and effects on the users of the materials. The development of the theory of action framework integrates the linear logic model provided by Patton (2008) and the four criteria in Chapelle’s (2001) CALL task appropriateness framework. The theory of action framework for
the teaching materials on source use was also shown to give two important implications for this study.

The first implication was its influence on the definition of research questions for the evaluation of the materials and the inclusion of process-based research methods in the research design. Specifically, the four criteria in Chapelle’s (2001) framework helped me generate nine specific research questions for the evaluation. In terms of language learning potential, the criterion guided me to answer whether or not the task characteristics (i.e., input flood, input enhancement, guided induction instruction, explicit instruction, and structured tasks) stimulated the learners to focus on form of source use. In addition, the meaning focus perspective prompted to investigate whether the task characteristics fostered learners’ attention and ability to make a connection between form and meaning of source use in documented essays. Importantly, the learner fit quality directed the study to seek evidence to show whether the materials were appropriate for the target learners in the selected college-level composition course. The next criterion, impact, led my investigation to explore the impact of the designed tasks on their learning and teaching experiences of involved students and teachers. The role of hypothesized learning processes in the theory of action framework also led to the inclusion of process-based research methods in the research design.

The second important implication of the theory of action framework was the improvement in research methods to explore users’ perceptions of the teaching materials. Accordingly, the theoretically informed approach, which is based on the SFL perspective, was chosen to analyze qualitative data in this study. Specifically, the appraisal network and the ideational system in SFL were shown to afford an insightful understanding of users’ perceptions about the four qualities of the materials based on their experiences.
Overall, corresponding to Chapelle’s (2001) four criteria of CALL task appropriateness which were integrated into the theory of action framework for the teaching materials on source use, this study aimed to seek evidence to the following research questions in order to evaluate the effectiveness of the characteristics of the materials in improving instruction on source use in a college-level composition course:

1. Language learning potential:
   1.1. What evidence suggests that the components and characteristics of the materials (input flood coupled with input enhancement, guided induction, and the target texts by college students) lead to the students’ hypothesized learning processes (i.e., noticing of and focusing on features of source use)?
   1.2. What evidence suggests that the students’ hypothesized learning processes lead to their learning gains about source use (knowledge, metalinguistic and pragmatic awareness, and revision strategies)?

2. Meaning focus:
   2.1. What evidence suggests that the students focus on understanding the meaning of source use features in documented essays when working with the materials?
   2.2. What evidence suggests that the components and characteristics of the materials (input flood coupled with input enhancement, guided induction, and the target texts by college students) lead to the students’ focus on the meaning of source use features in documented essays?

3. Learner fit:
   3.1. What evidence suggests that the components and characteristics of the materials are at the appropriate level of difficulty for the students?
3.2. What evidence suggests that the components and characteristics of the materials are engaging to the students?

3.3. What evidence suggests that the components and characteristics of the materials are useful to the students?

4. Impact:

4.1. What evidence suggests that the learners have a positive and beneficial experience with the components and characteristics of the materials?

4.2. What evidence suggests that the instructors have a positive and beneficial teaching experience with the components and characteristics of the materials?
CHAPTER 3: THE DEVELOPMENT OF THE MATERIALS ON SOURCE USE

This chapter describes the instructional context of the college-level writing course in this study, and the development of the teaching materials on source use based on the pedagogical design principles discussed in the previous chapter. These descriptions include brief information about the course and the characteristics of the pedagogy, and the instructors, the learners, and the documented essay assignment in the course. Then, I will delineate the four major components of the development of the materials used in the study, which consist of the content development, the theoretical background, the technological component, and the piloting of the materials.

3.1. Instructional Context

The description of the instructional context covers the information about the course for which the materials were intended. The instructional context includes the course itself, its instructors, its learners, and the documented essay as the target assignment for the study.

3.1.1. Course Description

The course description starts with the contextual situation of the course in the overall program for college students followed by details about the major components that define it.

a. Overall contextual description

The instructional context of my evaluation study is a three-credit college-level writing course at a large Midwestern land-grant university in the U.S. This is the upper level course of the two foundational communication courses required for all college students offered by the English Department. The curricular program was officially launched in Fall 2007, and its development process was reported to involve a number of stages with the participation of many representatives from the university community such as college curriculum committees,
communication scholars and teachers, and Faculty Senate committees. Hence, the stated curricular plan of these two courses is to “reflect a sustained, comprehensive effort to design and develop an approach to communication instruction specifically suited to academic needs and professional goals” of the students (ISUComm Foundation Courses Instructor Guide, 2016, p. 7).

The rationale for the development of the curricular plan of these two foundational communication courses is to prepare students “to communicate with confidence and expertise in a world transformed by dynamic changes in information technology,” and the curricular plan “dovetails with contemporary communication practices, helping students develop complex multimodal expertise through sustained study and practice” (ISUComm Foundation Courses Instructor Guide, 2016, p. 7). These two courses are also envisioned to enable students to produce effective written, oral, visual, and electronic communication, in which they can analyze and critique their production, and in which they develop a basic rhetorical vocabulary for discussing communication choices with reasonable precision, and transfer these skills into other courses and the varied contexts of their academic, professional, and civic lives.

One main goal of these two foundational communication courses is to develop skills in written, oral, visual, and electronic communication for students and to “serve as a transition between students’ high school experience and the intellectual life of the university” (ISUComm Foundation Courses Instructor Guide, 2016, p. 1). In other words, both of these courses are intended to provide students with opportunities to transition from secondary education to post-secondary education through multiple written and oral assignments. The curriculum of these two courses is thus designed to give students “extensive practice in composing, revising, critical reading, active listening, and focused reflection – the kind of experience that will enable students to acquire university-level communication competence that extends to the rest of their
coursework” (ISUComm Foundation Courses Instructor Guide, 2016, p. 9). The courses also aim to help students function well in analyzing, composing, and reflecting:

In analyzing, they’ll focus on claims and evidence, on critical thinking, on active listening, and on deconstructing visuals. In composing, they’ll focus on assessing the rhetorical situation, gathering supporting information, determining a thesis or dominant impression, and adapting style and format to fit purpose and audience. In reflecting, they’ll focus on applying rhetorical terminology and identifying patterns in their communication processes to help them grow as communicators and critical thinkers. (ISUComm Foundation Courses Instructor Guide, 2016, p. 9)

In spite of these shared goals, these two courses are also distinct from each other in the following ways. While the lower-level course “emphasizes essential writing strategies and uses readings primarily as models for developing those strategies,” the upper-level course “emphasizes rhetorical analysis of readings and various kinds of academic writing, especially argument and persuasion” and “is often organized around themes that feature communication in civic discourse and/or different disciplines depending on the program” (ISUComm Foundation Courses Instructor Guide, 2016, pp. 10-11). For example, those sections that participate in Learning Communities often center on their related disciplinary topics while most of the sections in the regular program focus on various civic and cultural themes such as pop culture, and language.

In terms of pedagogy for the two courses, instructors are encouraged to explain the concepts and skills, and provide scaffolding for students so that they can understand the importance of understanding rhetorical problems and situations, and be aware of their composing process. Moreover, the activities assigned in those courses should involve a variety of cognitive strategies including observing, inferring, concluding, summarizing, analyzing, evaluating,
synthesizing, and persuading. And a key aim of the pedagogy of both courses is “to move incrementally, allowing assignments to introduce new cognitive strategies as well as to reinforce previous ones” (ISUComm Foundation Courses Instructor Guide, 2016, p. 11). Importantly, knowledge transfer, which refers to the process of understanding a concept and translating it into practice, is essential in the pedagogy for these courses. Instructors are encouraged to provide sufficient scaffolding for students so that they can develop their cognitive competencies and apply their understanding of the concepts in the course into performance.

The section below focuses on describing the upper-level course and is comprised of objectives, assignments and evaluative procedures, and composition pedagogy which are also described as the major components that “define” the program (ISUComm Foundation Courses Instructor Guide, 2016, p. 1)

b. Course objectives

The chosen course for this study “focuses on argument and persuasion as a way of preparing students to participate in academic life and in their future careers.” (ISUComm Foundation Courses Instructor Guide, 2016, p. 31). In this course, students have to analyze, respond to, and construct arguments. Hence, the course is aimed at enabling students to improve (1) their critical reading skills by summarizing texts and by analyzing and evaluating the appropriateness of texts for particular audiences, and (2) their communication skills by constructing persuasive texts and using sources to support the arguments in these texts. Through the practice and assignments in the course, students are expected to develop skills in each of the four communication modes (i.e., Written, Oral, Visual, and Electronic).

The specific goals in the written mode for the course are stated in the course guide. Accordingly, students should be able to: (1) summarize accurately and responsibly the main
ideas of others, especially published sources, (2) analyze professional writing to assess its purpose, audience, and rhetorical strategies, (3) construct arguments that integrate ethical, logical, and emotional appeals, (4) continue to integrate appropriate source material, providing accurate and consistent documentation, (5) continue to demonstrate an ability to conform to usage conventions and to adapt expression to purpose and audience, (6) continue to reflect systematically upon all of their communication processes, strengths, goals, and growth.

Important to their development of writing skills is the students’ recognition of the importance of argumentation and persuasion as being explained in the course guide book:

Argumentation helps develop key cognitive skills, including defining different positions, synthesizing evidence to support arguments, and assessing an audience’s underlying assumptions. Evaluating the various kinds of appeals available to support an argument (i.e., ethos, logos, pathos) further advances students’ understanding of the relationship among communicator, text, and audience. Through using both primary and secondary sources, students can choose substantive content suited to a particular audience and purpose, synthesize multiple sources, and use an assigned documentation system. Rather than assigning one documented composition, you may find that students will benefit from several assignments using increasingly diverse and complex evidence. Remember that your class might be the only one in which many students learn about citation of sources and that this skill will be important in their academic life. (ISUComm Foundation Courses Instructor Guide, 2016, p. 33)

However, as stated in the instructor guidebook of the course, language use including grammar and mechanics is not considered as one of the goals in the course and is not usually directly taught in the course.
c. Assignments

Based on the shared course objectives, instructors are encouraged to develop their own syllabi and course materials to meet those stated goals after their first year of teaching in the program, although the program provides a template for instructors to use. Specifically, in the instructor guidebook and the template course site that are accessible to all the instructors of the course, a sequence of five major assignments (i.e., Summary, Rhetorical Analysis, Argument and Persuasion, Research and Documentation, Portfolio) is presented in the template syllabus. This recommended sequence of assignments allows scaffolding between assignments as each assignment is built on the skills of the previous one. For example, students learn how to extract main ideas from a text in the first summary assignment before being asked to analyze and evaluate rhetorical strategies in a reading in the second assignment. Below are the descriptions of these five assignments in the course syllabus template that are presented both in the student guidebook (ISUComm Foundation Courses Student Guide, 2016, pp. 19-20) and the instructor guidebook (ISUComm Foundation Courses Instructor Guide, 2016, pp. 33-34).

Assignment #1: Summary. At the outset of the course, students learn how to extract main ideas from a text and recast them in their own words.

Assignment #2: Rhetorical Analysis. After learning to summarize, students analyze visual and textual artifacts rhetorically by examining how an author adapts substance, organization, style, and delivery to a particular audience and purpose (context). For example, some students might focus their analysis on organizational features (arrangement of ideas, cueing devices, transitions), while other students might focus on expression (tone, style, level of formality, word choice, sentences). Students can begin by analyzing a single text; they can continue by comparing and contrasting rhetorical strategies of two or more essays, then evaluating the rhetorical
effectiveness of one or more texts. Rhetorical analysis can also be visual, applied to commercials, brochures, posters, etc.

**Assignment #3: Argument and Persuasion.** Students then explore the nature of argument and persuasion, reading and analyzing a variety of texts – essays, editorials, advertisements, websites, etc. – with argumentative/persuasive elements. Students are expected to support their arguments with evidence and to adapt their compositions to a specific audience and purpose. For example, students might write a rebuttal to one or more of the readings, give an oral presentation taking a position on a controversial topic, create a slide presentation on a proposal about a campus problem, or compose a letter persuading readers to take a certain action and then condense the letter into a one-page flyer.

**Assignment #4: Research and Documentation.** As students develop their own arguments, they also learn how to integrate sources into their assignments to support their ideas. They learn basic research methods, paraphrasing techniques, and standard documentation forms. The first assignment might be a short problem-solving essay that uses primary sources, while the second assignment is a longer project (1,200 to 1,500 words) that requires gathering information from both primary and secondary sources. From this research, students might use the information from their essay to give an individual poster presentation.

**Assignment #5: ePortfolio.** The ePortfolio offers a special opportunity for students to reflect on the role of communication in their lives, both inside and outside academia, and to project their future growth as communicators. Students are asked to create an electronic portfolio that shows either their growth (developmental growth) or best work (showcase portfolio).

In terms of evaluation, a scoring rubric is also provided with each assignment in the course template. All the scoring rubrics for the papers are comprised of five main components:
Context, Substance, Organization, Style, and Delivery. However, instructors are also invited to adapt these scoring rubrics to match their given assignments for their courses.

**d. Composition pedagogy**

Four major teaching strategies are described as the core of the composition pedagogy of the course itself and the program (ISUComm Foundation Courses Instructor Guide, 2016, pp. 15-18). They include (1) promoting active reading, (2) using collaborative learning, (3) emphasizing transfer, and (4) strengthening reflection. In the first area, instructors can help students know how to extract main ideas and draw inferences from a reading text by modeling how to annotate a text and how to summarize and paraphrase information in the text. Another way to promote active reading is through enforcing the reading-composing connections in the instruction so that a reading can be used for a number of purposes such as a model for writing, or as a source of ideas or information for their own assignments.

The second important component of the pedagogy for the course is using activities to promote collaboration among students. Some of these are small-group activities, peer-response groups, panel discussions, and computer classroom exercises. Instructors can also choose to use a collaborative assignment in their course syllabus. The third area, which is considered to be critical in the composition pedagogy, is to facilitate transfer by making explicit how the knowledge and practices students acquire in the course can be applied in numerous contexts within and beyond the university. Finally, reflection, which is described as “a highly effective metacognitive habit proven to help learners examine their practices, learn from them, and set meaningful goals for growth” ((ISUComm Foundation Courses Instructor Guide, 2016, p.20), is a crucial component of the course content and pedagogy. Thus, students are provided with multiple opportunities to reflect on their learning throughout the semester including the final e-
portfolio project, and instructors are also encouraged to guide student reflection so that their student’s reflecting process is beneficial to the learning experience.

3.1.2. Instructors

The instructors of the course have various backgrounds and differ in their teaching experiences with the course. Graduate teaching assistants can be majoring in different English areas such as Applied Linguistics and Technology, Rhetoric and Professional Communication, Creative Writing, and Literature. Faculty instructors of the course must hold at least a Master degree in one of the relevant fields. Graduate students recruited to teach the course are required to fulfill a graduate-level course about composition pedagogy, which provides them with the necessary intellectual tools and theories to inform their teaching practice in the course. All the instructors are provided with the ISUComm Foundation guide book which contains clear descriptions about the course and the composition pedagogy for the course. After their first year of teaching in the program, they are also allowed to develop their own syllabi and choose materials to help their learners achieve the stated goals of the course.

3.1.3. Learners

The learners of the course include both native and non-native speakers of English, and also vary in their backgrounds with respect to their study and use of English, their native language, nationality, gender, year in school, and area of study. All the non-native students must meet the English requirement of the ISU English Placement Test before taking English communication foundation courses, so they are expected to be at the same advanced level of English proficiency as their native English speaking peers. Moreover, the students of the course must have successfully taken the lower-level foundational communication course or have an
exemption earned from standardized tests including ACT-E/SAT-EWR/SAT-CR official scores, or the course test-out.

Although they are all proficient in using English, both groups of native and non-native students taking this course still lack knowledge and practice in academic writing and rhetoric, including skills involved in the use of sources. As Aull (2015) describes, these students are still considered as novice academic writers because of their limited experience in the post-secondary writing genre and their shortage of prior exposure to academic writing conventions. Therefore, the course is designed to provide them opportunities to practice a number of basic academic writing skills including annotating, summarizing, analyzing, evaluating, and synthesizing external sources through its four major written assignments: summary, rhetorical analyses (both textual and visual), and documented research. For example, in the documented essay assignment in the syllabus template of the course, which is also called the “research paper,” students are required to carefully select, accurately report and critically evaluate external sources on a selected topic, and incorporate them into their paper successfully. The students were thus expected to be motivated to complete the materials on source use which are intended to help them understand citation practice in the documented essay assignment.

Moreover, before using the teaching materials developed for the documented essay assignment in this study, the students would have had opportunities to practice a number of academic skills including summarizing, analyzing, and evaluating sources so that they can finish the first draft of the documented essay without completing the materials. Also, by the time of taking the online materials on source use, the students would have been already familiar with working with computer-mediated teaching and learning materials in a computer lab classroom. Therefore, as supported by Flowerdew (2006) and Boulton (2010), training on using the web-
based corpus tool as a part of the designed teaching materials is not necessary for the target learners.

3.1.4. The Target Assignment

The target writing assignment of this study is the documented essay which is also considered to be the most challenging assignment of the course as the students are required to incorporate multiple academic skills introduced in previous assignments (e.g., reporting a source accurately, examining a textual and visual argument using rhetorical concepts), and to apply new academic skills (e.g., searching for articles, evaluating sources, synthesizing and incorporating different sources on the same topic). Specifically, students are required to search for sources on a controversial topic of interest which evokes multiple views, then read and synthesize them before examining each perspective rhetorically and presenting their examination as a report of a debate on the selected topic in an accurate, objective, and justified manner. The paper should be at least 1000 words. Below is an excerpt from the general prompt of the assignment (see Appendix A for the full assignment sheet template):

Assignment #5

Now that we have read and discussed issues related to several specific topics, you are ready to write a paper in which your goal is to present multiple viewpoints on it and discuss the reasons some people think one way and others think other ways. Your goal is not to discover who is “right.” Your goal is to understand the issues that impact how people view this topic. As a class, we will brainstorm specific issues you might address in your paper.

Due to these requirements of the assignment, students have to incorporate what is written in external sources in order to complete the written paper as a major part of the assignment. Therefore, this writing assignment is very suitable for my corpus-based linguistic analysis on source use. Also, the target assignment is appropriate for my evaluation study as the teaching
materials I designed are based on the corpus-based investigation of source use in the A graded documented essays by the students of this course in previous semesters.

3.1.5. Course Delivery & Management System

The target course for my study is a face-to-face course, and instructors of this course either choose Moodle or Blackboard as the course management system. Moodle is considered to be more popular because the program provides specialized technical support for Moodle users, and the writing program administrator provides a populated template for the course on Moodle. Overall, these two systems serve as a repository of the course materials and assignment submissions, and provide a number of tools for teaching and learning such as interactive quizzes or forums for discussion.

The course is a three-hour credit class meeting for three hours per week with at least one hour in a computer lab. In other words, each section of the course is assigned to meet in a computer lab at least once a week, or in a classroom which is fully-equipped with laptops for all the students. On the computer lab day, each student is provided access to either a computer or a laptop connected to the Internet, and often works on computer-mediated tasks prepared by his or her instructor.

Based on this contextual characteristic of the course, the delivery and implementation of the designed computer-mediated materials of my study is very appropriate for students in the course. Specifically, in my study, the materials are delivered as a self-paced computer-mediated lesson through the Moodle course management system on a computer lab day. Further descriptions of the materials are provided in Section The Four Bases of the Development of the Materials on Source Use.
3.1.6. The Current Treatment of the Target Discourse Feature In Textbooks

Following the approach illustrated in recent works on corpus-informed materials development (Barbieri & Eckhart, 2007; Conrad, 1999), a detailed examination of the chosen target feature in the two major textbooks of the course, which are two of the three required textbooks selected in the course syllabus template, is provided in this section. These two textbooks are popular and commonly used in universities across the country; they are representative of other texts also in use. This examination also acts as a springboard for the proposal of the designed DDL learning activities in the research described in the next section. Based on my review of corpus-based findings on citation use and the results of my pilot study, I examine how the selected aspects of the target feature (i.e., citation density, author integration, textual integration, citation function, reporting verbs) are addressed in these two textbooks.

The first book, called the “Everything is an argument” book (EA), is a primer on rhetoric which consists of chapters on major concepts in rhetoric such as appeals of an argument, and the second one, called the “Everyday writer” book (EW), is a reference handbook which provides a guide to different styles and language-level writing such as common errors in college student writings. Several chapters in these two books touch on this targeted discourse feature as following:

The EA book:

- Chapter 19: Using sources (Building a critical mass; synthesizing information);
- Chapter 20: Plagiarism and academic integrity (Acknowledging your sources accurately and appropriately, Using copyrighted Internet sources, Acknowledging collaboration);
- Chapter 21: Documenting sources (MLA Style, APA Style)

The EW book:

- Chapter 17: Take notes and annotate sources (quotation, summary, paraphrase)
• Chapter 18: Integrating sources and avoiding plagiarism
• Chapters 49-55: MLA documentation and APA, Chicago, and CSE documentation

Because the two books were written by the same author, there are a lot of similarities in terms of their treatment on three aspects of the citation feature in academic writing. Moreover, similar to what was reported by Thompson and Tribble (2001), the review of these chapters shows that the target feature is mostly examined in terms of its mechanical conventions in academic writing. Table 3 summarizes key observations of the examination of the two books on these three aspects. Further explanations and examples for each category are given below.

Table 3. Summary of the Treatment of Source Use in the Textbooks

<table>
<thead>
<tr>
<th>Aspects of Citation</th>
<th>Book 1 (EA)</th>
<th>Book 2 (EW)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Citation Density</strong></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>B. Author Integration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Types of author integration</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>2. Different forms of integrating sources/authors in an integral citation</td>
<td>X</td>
<td>- (only one)</td>
</tr>
<tr>
<td>3. Genre specific (e.g. research article vs. student writing)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>C. Reporting Verbs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Frequently-used verbs</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2. Classification of reporting verbs &amp; their evaluative potential meaning</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>3. Genre specific</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>D. Rhetorical functions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Different functions of citation</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>2. Function use variations across registers or sections of a writing</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note:* ‘X’ means ‘present’; ‘-’ means ‘absent’
**Author Integration** No explicit instruction on types of author integration is provided in the two books. There is also no clear indication of genre or discipline for each example of citations presented. There seems to be an assumption that every writer in every field integrates sources in the same way for every type of writing (genre). For example, the EW book writes “*Ordinarily, use the author’s name in a signal phrase to introduce the material, and cite the page number in parentheses*” (p. 227). This instruction is completely opposite to the corpus-based research findings so far on the existence of various ways of integrating a source in a citing sentence and its variations across genres and disciplines. This presentation of author integration in the EW book, thus, provides a simplistic view on citation practice in academic writing.

Moreover, the EA book introduces the use of the signal phrase (i.e., *according to*) and illustrates how it could be positioned in a citing sentence without discussing its rhetorical effects. This presentation of the signal phrase “*according to*” might lead to the overuse of “*according to*” in student papers as what was observed by Thompson and Tribble (2001) in their students’ source-based essays.

**Reporting Verbs** Both books present the use of signal verbs as a way to report external sources. However, all the examples in the two books illustrate one syntactic pattern (author’s name + reporting verb + clause/phrase). Interestingly, in four out of the five given examples, “that” is not present in the complementary clause which is not typical in academic writing (Charles, 2006a, 2006b; Biber et al., 1999).

Next, the two books provide the same list of frequently used reporting or “signal” verbs. Most of the given verbs match the frequently used verbs used for academic writing, especially in highly graded student papers (Nesi, 2014). However, all the reporting verbs are categorized under “signal verbs” with no further descriptions or classification, conveying a simplistic view
about their semantic and rhetorical role in academic discourse. Although the EA book comments that “the signal verb is important because it allows you to characterize the author’s or source’s viewpoint as well as your own – so choose these verbs with care” and gives three citing sentences using reporting verbs (*argue* vs. *fantasize* or *unreasonably contend*) (EA, p. 427), such treatment on the use of reporting verbs in citation is insufficient to help student writers to be aware of the stance conveyed by reporting verbs in order to use them effectively (Bloch, 2010).

**Rhetorical Functions** Some explanations on rhetorical functions of in-text citations in academic writing are given in the two books. While the EW (p. 206) briefly mentions six uses of citations under the section “understand the purpose of sources” without any illustrative examples, the EA book has a quite in-depth presentation on how to use external sources “strategically and selectively” in academic writing in order to “have the flavor of a hearty but focused intellectual conversation.” (p. 442). Also, each specific purpose of using a citation is explained with an example. Interestingly, while most of the presented rhetorical functions of citation in the book are similar to those reported in corpus-based studies about the use of citations in academic writing, the function #4 (i.e., to present technical material) appears to be ambiguous. Specifically, the explanation on its use and the provision of its illustrative example make it unclear about the responsibility of the writer to rephrase technical material to accommodate his or her target readers.

Overall, the current treatment of the ‘source use’ feature in academic writing in the teaching materials of the course is insufficient and not well-supported by corpus-based studies on citation in academic writing. In other words, the discourse feature is presented very simplistically compared to what has been revealed about citation practices in academic writing by previous corpus-based studies. For example, the materials fail to provide specific explanations and
descriptions of the citation practices in the specific genre that the students are going to write, and do not provide sufficient examples to foster the students’ uptake of various aspects of citations, especially their rhetorical purposes. This simplistic presentation of this essential discourse feature without addressing its usage variations across disciplines and genres might make the textbooks less practical and useful to learners. Moreover, the reliance on the one-way delivery of the feature usage in these books without having students interact with the feature through multiple examples and exercises might not assist in the transfer of what they have read into their writings.

These observations of the treatment of source use in the target instructional context have thus motivated me to design online materials to teach college student writers in the target course how to incorporate external sources in their papers in order to achieve the learning objectives of the source-based writing assignment. The next section continues to present the design and development of the online materials on source use for this specific teaching and learning context, which are also shaped by the relevant learning theories discussed in Chapter 2 and my findings of the corpus-based linguistic analysis on source use in the students’ documented essays.

3.2. The Four Bases of the Development of the Materials on Source Use

The purpose of this section is to provide a concrete illustration of the four bases of the development of the materials on source use in this study. As shown in Figure 4 below, these four bases include the theoretical background, the content development, the technological background, and the piloting of the materials.
3.2.1. The Theoretical Background of the Materials

In order to explain the theoretical background of the teaching materials on source use in this study, I will first present the theoretically informed design principles of the materials. Because the teaching materials on source use consist of two major components which are the web-based corpus tool and the Moodle-based lesson, the second section explains how each of the design principles are operationalized in each of these two components.

3.2.1.1. The Theoretical Design Principles for the Materials

The key theoretical principles that inform the pedagogical design and development of the CALL materials in my project are summarized in Table 4 below. As shown in the table and
discussed in the previous chapter, two major language learning theories including the data-driven language learning (DDL) approach and the Noticing Hypothesis (NH) in SLA provide the theoretical foundation for the characteristics of the materials design. For each theory, its major principles and issues which directly inform a corresponding task characteristic are presented.

The first major principle of the pedagogical design is inherited from the genre-based approach in SFL and the hypotheses in the DDL approach (Johns, 1991, 1994, 1997). Moreover, as inductive learning is the heart of DDL, and guided induction has been supported as an effective instruction approach, the characteristic of guided induction is the center of the pedagogical design of the lesson on source use (Flowerdew, 2009, 2012, 2015; Johansson, 2009; Smart, 2014). Thus, the teaching materials involve the use of a corpus of A graded papers by college student writers of the same target genre that the learners are writing in their courses, and a concordance tool to display multiple examples of citing sentences from the corpus, thereby providing guided induction tasks.

Table 4. *Theoretical Backgrounds for the Pedagogical Design of the Materials on Source Use*

<table>
<thead>
<tr>
<th>Theories</th>
<th>Key Points</th>
<th>Task Characteristics</th>
</tr>
</thead>
</table>
| DDL Hypothesis & Instruction            | Inductive learning & Constructivist learning (Johns, 1991, 1994; Flowerdew, 2015; Aull, 2015) | • Provision of a number of authentic examples of citing sentences (Input flood)  
• Showing the patterns or frequency distributions of citations across sub-types for each feature of source use.  
• Facilitating noticing to enhance inductive learning  

|                                          | Inductive learning through guided induction instruction (Johansson, 2009; Smart, 2014) - 4Is approach: Illustration, Interaction, Intervention, Induction (Flowerdew, 2009) | • 4Is guided induction approach in the design and development of a self-paced lesson with guided questions delivered through an online course management system: |
|                                          |                                                                                           | •                                                                                                                                                  |
Table 4 continued

<table>
<thead>
<tr>
<th>Noticing Hypothesis</th>
<th>Attention in noticing (i.e., registering formal features in the input)) <em>(Schmidt, 2010)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Input flood coupled with input enhancement to facilitate noticing <em>(Barbieri &amp; Eckhart, 2007)</em></td>
</tr>
<tr>
<td></td>
<td>Attention in noticing the gap (i.e., identifying how the input to which the learner is exposed differs from the output the learner is able to generate) <em>(Schmidt, 2010)</em></td>
</tr>
<tr>
<td></td>
<td>• The questions direct learners to observe the use of different features of source use and their patterns in the web-based corpus tool so that they could understand the features, explain their uses, and induce strategies to use them in their papers.</td>
</tr>
<tr>
<td></td>
<td>• Input flood (i.e., provision of a number of citing sentence examples and the chart showing the distribution of citing sentences across different sub-types of each feature)</td>
</tr>
<tr>
<td></td>
<td>• Input enhancement (i.e., highlighted citation markers in concordance lines, citation features in search menu, provision of visuals showing patterns of source use, and bolded key words in the instructions within the lesson)</td>
</tr>
<tr>
<td></td>
<td>• Guided induction for selective attention: Asking specific questions to direct learners’ attention to which aspects of the features to look at in a certain order</td>
</tr>
<tr>
<td></td>
<td>• Provision of a number of examples in the A graded papers of the target genre, and the frequency distributions across sub-types for each feature</td>
</tr>
<tr>
<td></td>
<td>• Guided induction: Asking students to compare their source use in their paper with the patterns of source use in the A graded papers.</td>
</tr>
<tr>
<td></td>
<td>• Awareness-raising tasks: Raising learners’ awareness about the patterns of source use and its context (or purpose of the assignment), and the connection between form and function in language use in general.</td>
</tr>
</tbody>
</table>

The second important principle of the pedagogical design, which is the combination of input flood and input enhancement in the pedagogical design of the teaching materials, is strongly supported by three major claims in the NH as well as by the claim about the role of
noticing in inductive learning in the DDL approach. The NH proposed by Schmidt (1990, 1993, 2001, 2010) highlights the role of noticing as a necessary and sufficient condition for acquiring a language feature. Therefore, input should be provided to promote the conversion from input to intake. Moreover, input should be provided to enhance learners’ noticing of the gap between their output and the target product which will lead to greater awareness of a certain feature of language use. Similarly, instruction should be given to direct learners’ attention toward better noticing of the target feature. Finally, being able to notice the target feature in a provided input is crucial to learners’ inductive learning.

As shown in Table 4, the two main theoretical design principles drawn from the genre-based approach in SFL, DDL in Corpus Linguistics, and the NH in SLA lead to the following characteristics of the materials on source use:

1. The conventional characteristics of the genre-based approach, data-driven learning, and guided induction are inherited in the pedagogical design of the materials.

   a. *A corpus of target texts and provision of citing sentences as concordance lines and patterns of source use:* The content of the lesson on source use is based on the corpus-based linguistic analysis of the target A graded papers by college writers. As a result, the web-based corpus tool is built on the corpus of annotated A graded papers and the findings on patterns of features of source use in the corpus. And for each feature of source use, the students will be given citing sentences from the corpus displayed as concordance lines in the web-based corpus tool.

   b. *Guided induction in the design and development of the lesson:* Johansson (2009) defines the guided inductive learning approach as “a combination of an inductive and a deductive approach where the elements of explanation and corpus use are
tailored according to the needs of the student” (p. 42). Smart (2014) continues to expand the concept of guided induction by describing it as “an approach that provides a structured, scaffolded framework for inductive learning, places the learner at the center of the learning task, with the learner seeking to discover the nature of the grammar structure through interacting with the language” (p. 187). In other words, DDL instruction should be given to scaffold learners to help them develop input processing strategies and activate the higher-order cognitive skills associated with inductive learning when working on DDL activities. Specifically, guided-inductive-learning instruction should facilitate learners’ selective attention to form and meaning connections of the input by devising instructional activities that equip learners with conscious rules, or help them interpret the functional meanings of specific forms in the input. The lesson consists of four major tasks which are equally divided into two major groups of source use features: linguistic-based forms and rhetorical functions. The two tasks in each group of source use feature are thus designed to promote inductive learning among students. The first task is to guide learners’ attention to each feature of source use and its patterns of use in the A graded paper corpus. They are then asked to generate strategies or explanations for each feature of source use. For example, in the last task of the lesson, the students are asked to compare their source use in their submitted essays with the patterns of source use in the A graded papers. By observing and explaining the patterns of source use, the students are expected to gain more knowledge about source use, and to raise their awareness about source use in specific and language use in general.
2. Input flood coupled with input enhancement for facilitating noticing is the essential component in the design of the web-based corpus tool and in the instructions on the computer-based lesson on source use in order to enhance language acquisition and inductive learning.
   
a. In SLA, an input flood refers to one particular type of learning opportunity where learners are exposed to multiple instances of the particular linguistic feature to be learned. The characteristic of input flood of the teaching materials is realized through the provision of a number of citing sentences and a chart showing the distribution of citing sentences across different sub-types of each feature in the corpus-based tool.
   
b. Input enhancement is broadly defined as an attempt to make a certain linguistic form salient to L2 learners by manipulating characteristics of input to direct learners’ attention and increase perceptual salience (VanPatten & Benati, 2015). For example, Chapelle (2001, 2003) discusses various ways that computer-assisted language learning resources can enhance input such as the use of different colors in order to facilitate learners’ attention and noticing of crucial aspects of the input. Another implicit technique of input enhancement is typographical enhancement. In the teaching materials of the project, the techniques of input enhancement include highlighted citation markers in concordance lines, a menu of citation features for searching in the corpus tool, provision of visuals showing patterns of source use, and bolded and color-coded key words in the instructions in the lesson.

Based on these design principles and characteristics, the next section presents how each of these principles and characteristics are operationalized in the actual materials on source use in the study.
3.2.1.2. Operationalizing the Design Principles and Characteristics in the Materials on Source Use

The teaching materials on source use in this study have the following specific goals:

- Providing learners with a good language learning opportunity through guided-induction instruction by observing and noticing language features in citations, examining and interpreting patterns of language features in citations, inducing rules of language use in citations and citation practice in the target genre

- Raising learners’ metalinguistic and pragmatic awareness about citation use in the target genre and in academic writing to prepare for their revision of citation use in their papers

- Providing learners with knowledge about citation features and functions of citation in academic writing through numerous authentic examples in the target genre so that they could apply the examples to their use of citation in the revision of their papers

- Helping learners to notice any gap between the citation practices of highly-graded student papers in the target genre and their previous citation practices, especially their use of citation in the first draft of the assignment that they have just completed.

- Providing teachers with a good CALL supplementary resource as well as an effective teaching practice to support their current instruction on citation for the target learners in specific, and their language instruction in general.

To achieve these learning goals and operationalize the design principles and characteristics described in the previous section, the teaching materials on source use developed for this study consist of two major components in this study. The first one is the Moodle-based lesson, and the
second one is the web-based corpus tool. Each of the subsections below describes how the design principles and characteristics shape the features of each component.

a. The Moodle-based lesson on source use

The lesson on source use was developed as a computer-mediated lesson. In this lesson, students have to work individually at their own pace in a course management system through a computer; teachers can support students as needed during the lesson. By the time of the lesson, students need to have already finished their first drafts of the documented essay. The lesson is intended to give further instruction on source use so that learners could revise their papers on their own and review their peers’ work in terms of source use.

The lesson is comprised of five major tasks and is intended to be delivered as a 50 minute lab activity with the fifth task given as homework. These five tasks can also be divided into three major parts. The first two parts are conducted in class with the purpose of drawing learners’ focus on observing and understanding the patterns of use in the four aspects of citation (citation density, author integration, textual integration, reporting verbs, citation function). The last part, which is planned as homework for students, is built on the first two parts and gives another opportunity for students to reflect on their previous writing and transfer what they have learned from the lesson to improve their practices of source use in their papers. Figure 5 below outlines the major components of the lesson on source use. As shown in Figure 5, the in-class lesson is divided into two major parts in order to facilitate learners’ noticing of features of source use and their inductive learning.
### Part 1: Form-based Features of Citation (In-lab Activity)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illustration</td>
<td><strong>Task 1: Illustrating &amp; Understanding the features</strong></td>
</tr>
<tr>
<td>Interaction</td>
<td><strong>Task 2: Observing &amp; Explaining patterns of citation features</strong></td>
</tr>
<tr>
<td>Intervention</td>
<td><em>Teachers should monitor the whole class and could assist individual students (or the whole class) during the lab if needed.</em></td>
</tr>
<tr>
<td>Induction</td>
<td><strong>Step 3: Inducing rules of citation use</strong></td>
</tr>
</tbody>
</table>

### Part 2: Rhetorical Functions of Citation (In-lab Activity)

| Illustration   | **Task 3: Understanding citation functions**                             |
| Interaction    | **Task 4: Observing & Explaining patterns of using citation functions**  |
| Intervention   | *Teachers should monitor the whole class and could assist individual students or the whole class during the lab if needed.* |
| Induction      | **Step 3: Inducing rules of using citation functions**                    |

### Part 3: Induction & Reflection (Homework)

<table>
<thead>
<tr>
<th>Task 5: Writing a journal</th>
</tr>
</thead>
</table>
Look at the first draft of the assignment that you submitted, and write up a short journal about 250 words in which you should describe and explain your source use in the first draft, and provide some strategies to improve the source use in your first draft.

---

*Figure 5. Summary of the Lesson on Source Use*

The first part focuses on the linguistic forms of source use (e.g., textual integration, author integration), and the second part is on rhetorical functions of source use. Moreover, each part is also developed following the 4I’s approach proposed by Flowerdew (2009), which is also
known as guided induction instruction. In this approach, learners will be guided through a number of steps such as observing language use and interacting with examples containing the target feature before being asked to induce rules or explanations on the use of a language feature. By giving students a chance to observe and interact with the model language samples in the target genre, they will learn and internalize the linguistic patterns more effectively (Aull, 2015; Johns, 1991; Flowerdew, 2009, 2015). As Flowerdew (2009) further explains, this approach may help language learners to develop habits of observing and assessing language in use so that they can become independent writers.

Accordingly, each part is also structured to consist of four stages although the Intervention stage is designed to be optional and involves one-on-one interaction between a teacher and a student instead of whole class interaction. The Illustration stage is intended to help students to familiarize themselves with the aspects of citation. In this stage, each student is presented with examples illustrating the features of source use, followed by an interaction with the corpus-based tool in order to understand the use of each feature. The purpose of this Interaction stage is to provide learners with input flood or numerous citing sentence examples with a targeted feature so that they could see the connection between form and meaning. In this stage, learners are also guided to look at specific aspects of source use on the provided web-based tool in order to notice some basic patterns of source use in the A graded essays. After the Interaction phase, they are asked to explain the observed patterns of language use and induce some strategies to apply the targeted feature of source use in their papers. Instructors are also encouraged to support students with their induction of strategies and explanations on source use at the end of each part or the lesson.
Each part of the lesson consists of two major tasks, making a total of four major tasks in the in-class lesson followed by one task as the homework assignment. In the first task of each part, learners are guided to observe different features of source use and answer several questions in order to confirm their general understanding of each feature of source use. This guidance is needed in order to direct their attention to a specific feature of source use for a period of time which is hypothesized to facilitate their noticing of source use (Schmidt, 2001, 2010; Flowerdew, 2009, 2015). After that, students are instructed to interact with the tool as much as they want before inducing explanations and strategies of source use in the target genre. For the first part, they are specifically asked to explain the observed patterns of source use in terms of the use of parentheses, textual integration, author integration, and reporting verbs. In the second part, they are asked to generate several strategies about source use in terms of rhetorical functions for their papers. Finally, in the homework assignment, learners are asked to look at the submitted first drafts and compare their own use of source use in their papers and that practice in the A graded papers. In other words, the homework assignment is purposed to foster students’ attention to notice the gap between their writing and the A graded writings, which is also hypothesized to help them raise awareness about source use (Aull, 2015; Schmidt, 2010).

Based on the introduction of common DDL exercise formats (Reppen, 2010), most of the tasks are designed using either the multiple choice or short-answer quiz format. However, as the lesson is computer-based and delivered through the Moodle course management system, multiple typographical enhancement resources in the Moodle system are also employed to enhance the delivery of the written instructions in the lesson. Figure 6 illustrates how the information in the instructions is color-coded and consistently formatted throughout the whole lesson in order to facilitate learners’ attention and noticing of features of source use in the materials.
As shown in Figure 6, a consistent formatting is applied to all the directions in the lesson. For example, all the names of the target features of source use are coded in dark red. Similarly, all the questions are colored in blue to attract learners’ attention.

Figure 6. The Computer-based Lesson on Source Use

Finally, in terms of assessment and evaluation, as the teaching materials are purposed to supplement the instruction on citation in order to help students fulfill the writing assignment, the learners’ performance on these tasks is formatively evaluated. As a result, a key to every
question with a brief explanation is provided for students to double check their answers. After each attempt, they can also review their work and revisit the lesson at any time. They are allowed to access the tool as much as they want after the class as well.

b. **Web-based corpus tool**

A web-based corpus tool, which is based on a collection of 76 A graded papers in the same genre by the students in previous semesters, was developed as the essential component of the teaching materials on source use. The tool is intended to provide the students access to linguistic patterns and features of source use in the A graded papers of their peers in the same course so that they can learn effective source use.

The design principle of input flood coupled with input enhancement is incorporated as an essential basis of the corpus-based tool. The tool provides a menu which has a list of specific features of source use that a learner can select to explore. Also, after clicking on each specific feature in the menu, he or she will be provided with a number of authentic citing sentences from the collection of the A graded papers, and the part with the specific feature in these examples is highlighted in order to direct their attention to that feature in the input.

As shown in Figure 7, a number of citing examples which have the quoted texts highlighted are on display when a student clicks on the feature of “Quotation” of source use. Importantly, in order to help learners notice the frequency patterns of source use in the target genre, charts which show the frequency distributions of citations across various sub-types of each feature are also provided for each feature of source use. Figure 7 shows such a chart with frequency distributions of citations across the three sub-types of textual integration (i.e., how the content of an original text is incorporated into one’s writing) in the A graded documented essays. The provision of a number of citing examples with the target feature of source use and the
visuals illustrating the patterns of citations in the target feature is congruent with the DDL approach. Therefore, a student is expected to decipher each feature of source use by examining the provided examples and explain the underlying value of the patterns of source use in the A graded papers.

Figure 7. The Web-based Corpus Tool Interface

Overall, the incorporation of multiple strategies in the web-based corpus tool including input flood (i.e., provision of numerous examples with the target feature) coupled with input enhancement (i.e., visuals, concordance lines), and the use of guided-induction structure for the lesson on source use are intended to increase learners’ noticing of different dimensions of citation or source use, which is hypothesized to lead to their increased pragmatic and metalinguistic awareness of source use and language use.
3.2.2. The Content Development of the Materials On Source Use

The process of developing the content of the materials on source use is comprised of four major stages which are illustrated in Figure 8. As shown in the figure, the first stage, which is my pilot study for this dissertation, involves a corpus-based investigation to examine any similarities and differences between the A graded papers and the B graded papers in terms of the five major features of source use. These major findings of the pilot study led to the proposal of developing the teaching materials on source use based on the A graded papers. As a result, a reselection of the A graded papers based on the sub-corpus of the A graded papers in the pilot study was conducted in the second stage of the process. These papers were then fully analyzed based on the framework and the methodology used in the pilot study. The results of this corpus-based reanalysis on the A graded papers were then used to develop the teaching materials on source use for the project in the fourth stage.
Each of the following sections briefly describes each stage of the procedure in order to show how the results of the corpus-based re-analysis were generated and applied to the development of the content of the materials.

### 3.2.2.1. Stage 1: Comparative Linguistic Analyses on Source Use

In this stage, a corpus-based linguistic analysis was conducted on source use to compare five features of source use in the A graded papers with those in the B graded papers of the students in Fall 2014 and Spring 2015. The outcomes of the first stage are the comprehensive theoretical framework on source use, the concrete methodology on source use for the linguistic
analysis and the development of the teaching materials, and an empirical ground for the proposal of the design and development of the teaching materials on source use.

Theoretical framework on source use

As presented in Chapter 2, the theoretical framework on source use for my study and the development of the teaching materials is based on the literature review on source use. Specifically, in terms of teaching students how to integrate external sources effectively into their writing, researchers recommend that source use instruction should include both linguistic forms and the rhetorical functions of citation. For example, drawing on their findings on how undergraduates engage in source-based writing and reading, Hirvela and Du (2013) assert that paraphrasing, a form of source use, should be taught both through linguistic resources and their respective rhetorical functions in a specific context. It also should be especially taught as a learning tool of knowledge transforming, not simply as knowledge telling.

Five major features of source use are included in the corpus-based linguistic analysis and the teaching materials for my study. These five features are citation types based on the presence of parentheses, author integration (how the name of a cited source is incorporated), textual integration (how the original text in a cited source is integrated into a citing sentence), reporting verbs (how different types of verbs based on their reported actions and the reporter’s stance and commitment towards the reported proposition are chosen), and rhetorical functions (how citing sentences function in one’s writing). The first four features are considered to be related to linguistic forms, and they are brought together in one systemic framework based on the dialogic engagement perspective by Coffin (2009).
The methodology for analyzing source use

Future corpus-based studies on citation including my full analysis of source use in the A graded papers can benefit from the methodology used in the pilot study. First, the analysis on source use should take Kaltenbacher’s (2007) combined approach demonstrated in this pilot study in order to retrieve more instances of citations. Accordingly, the approach was proposed to bridge the current gap between qualitative systemic analyses of individual texts and quantitative electronic analyses of a large collection of texts. The author suggested that preliminary findings of manual analyses of a small number of texts could be used to inform queries for quantitative electronic analyses of a great number of texts. Following the suggestion, the full analysis of source use in the A graded papers followed a combined approach in order to include more non-canonical citations in the other less-explicitly marked citation types. Specifically, manual analyses of individual texts on citation were conducted to identify possible and important patterns of linguistic realizations of the non-parenthetical citation types. Such knowledge helped identify new queries to find citations in addition to the available automatic queries for citation, resulting in more sentences reporting others’ ideas and opinions to be retrieved for the corpus-based analyses. Once citations were identified in the corpus, each citation was analyzed for a range of aspects in order to understand its use.

In addition, the expanded framework for citation detection together with the citation tagger and the reporting verb tagger can be employed for the analysis in the following stage of the materials development. Also, the integrative framework on citation by Coffin (2009) should be adopted as it lays a systematic analytic ground for further studies on citation across genres in academic writing. Moreover, due to some slight differences between A and B graded papers, future corpus-based studies on citation practice should constrain their corpus to one grade group
(i.e., A graded papers) in order to better describe the citation practice in this grade group. The inclusion of both A and B graded papers under the highly-graded papers might not be beneficial to the provision of a comprehensive description of citation features by good student writers due to some variation in linguistic features between the two groups.

The proposal of the materials development and instruction on source use

My corpus-based investigation into citation practices of college student writers in their FY writing course relied on Coffin’s (2009) framework for citation which integrates multiple citation features under the unifying perspective of dialogic engagement. The results of the study revealed both similarities and differences in source use between the two sub-corpora of A and B graded papers which are source-based essays in a writing course at a Midwestern university.

Several shared patterns exist in citation practices by the two groups of student writers. First, both groups of writers use dialogic expanding and dialogic contracting resources of citation in their papers, but they tend to use more on dialogic expanding resources. For example, the students frequently select the named-author integral form in combination with the assimilation form to integrate external sources into their writing. In addition, they are also more likely to opt for acknowledgement verbs to report ideas from external sources. Secondly, both groups of student writers use citations for a number of functions in their papers such as position support, context establishment, and position identification although three out of eleven functions in the citation function taxonomy (i.e., knowledge building, technical knowledge, reference) are not present in both sub-corpora. In both sub-corpora, most of the citations are used with the position support function. There are also other patterns in the combination of citation features and citation functions in the two sub-corpora. For example, both groups of student writers use the
assimilation form and the non-integral form for citations with the context establishment function, which signifies the importance of the selected topic.

In spite of a number of shared patterns in citation practices between the two groups of student writers, there are some slight differences in source use between them. First, the group of A graded papers uses more canonical citations and a wider range of reporting verbs than the group of B graded papers. Moreover, although the analysis of citation functions was based on a small sub-corpus of six student essays, the close examination on placement of citation functions in the selected essays also yielded two important differences. First, the group of A graded papers has one more function than the group of B graded papers. Specifically, half of the student writers of A graded papers use citations to give definitions of a concept and a term in their essays, but no citation of this function type is found in the group of B graded papers. Secondly, the writers of B graded papers use ‘context establishment’ citations, which signal the importance of a chosen topic under investigation, more frequently than the writers of A graded papers. While the students of A graded papers often use citations of this type as a background of the topic in the beginning of the introduction, the students of B graded papers employ citations of this type throughout the introduction and other parts of the essay. These shared patterns and differences in citation practices between the two groups of student writers lead to some implications for future studies on citation in student FY writing genres and instruction on source use in FY writing courses.

Supported by the aforementioned arguments on the role of findings of corpus-based linguistic studies in language instruction for student learners, the findings of my corpus-based investigation into source use by the student writers of A and B graded papers give important implications for citation instruction in college-level writing courses in general, and for the
materials development stage of my project in specific. These implications can be summarized into three major principles for materials development and instruction on source use for college student writers as following:

1. Informed by the shared patterns of using more dialogically expanding resources than dialogically contracting resources in citations by the writers of A and B graded papers, teachers should integrate the concept of *dialogism* and a simplified framework of citation into their citation instruction in FY writing courses before showing students the patterns of source use in the sub-corpus of A graded papers. In this way, students can better understand the purpose of citation practices by the writers of the A graded papers, which is to create and maintain a conversation among cited authors, and between cited authors and the target readers. By being explicitly taught about different aspects of citation, students can see how linguistic choices might create different rhetorical effects in terms of dialogic engagement. They will thus gain more awareness about the relationship between citations forms and functions. For example, a citation which uses more dialogically expanding resources (e.g., *insertion*, *acknowledgement* reporting verbs) will be more likely to invite the audience’s alternative views on the cited proposition by making it less committed. In contrast, the heavy reliance on too many *non-integral* citations and *assimilation* in one’s writing may create a narrative feel, making their writing less dialogically engaging and critical.

2. The presentation of the simplified framework for citation should include three features of citation (i.e., author integration, textual integration, reporting verbs) and explanations on dialogic functionalities of their sub-categories. Based on Barbieri and Eckhardt’s (2007) argument that frequency of occurrence in real language should be a crucial factor when
determining what to prioritize in language materials design and classroom instruction, further details for giving instruction on each citation feature are provided below:

a) Textual integration:

- Introduce three different ways of integrating a cited proposition into one’s writing (i.e., assimilation, insertion, and insertion + assimilation) and their relative frequency use in A graded papers (i.e., that assimilation is the most commonly used over the others)

- Distinguish the three ways of incorporating external sources by explaining how each option of textual integration might have a different functionality in terms of constructing a conversation among cited authors and engaging the target readers into that conversation.

- Prioritize the instruction on the assimilation form and the insertion+assimilation form. While the assimilation form and the insertion form are quite straightforward, more citation examples in the insertion+assimilation form should be provided in order to familiarize students with this textual integration type and its use.

- Explain when insertion is appropriate and why writers should avoid relying on insertion in writing their documented essays because the A graded papers mostly relied on assimilation citations.

b) Author integration:

- Introduce three options of incorporating an author or a source of a cited proposition in a citation. (i.e., author integral, general-author integral, non-integral) and show their relative frequency use in the A graded papers.
• Distinguish the three options by explaining how each option of author integration might have a different functionality in terms of constructing a conversation among cited authors and engaging the target readers into that conversation.

• Provide citation examples which use the author-integral form and the assimilation form for different rhetorical purposes such as position support, position identification, and credit because this combination of citation features is the most frequently used in citations by the writer of A graded papers.

c) Reporting verbs:

• Introduce two different aspects of reporting verbs with their sub-categories (i.e., denotation and stance) and their relative frequency use in A graded papers.

• Select frequently used reporting verbs in A graded papers for each sub-category to introduce to students

3. Citation forms should be taught with their corresponding potential rhetorical functions in academic writing. After being presented information about individual features of citation and the concept of dialogism, students should be introduced to different functions of citation in FY academic writing. Examples for each function type should also represent its common combinations of author integration and textual integration in the A graded student papers. For example, the ‘context establishment’ function should be illustrated with citations in both the non-integral and assimilation forms. In addition, students should be given examples of an attribution citation (i.e., a citation does not have any rhetorical function besides attributing the cited proposition to its author) so that they could avoid using citations without a clear purpose.
Overall, the findings of the corpus-based research led to the formation of three main principles for language material design and instruction on source use as presented above. The next stage is the re-analysis of the A graded papers for the materials development before the implementation of these principles and the integration of the corpus-based findings into the materials and instruction on source use for the project.

3.2.2.2. Stage 2: Reselection of A Graded Papers for the Content Development

The second stage of the content development for the materials on source use involves the re-examination of the 80 A graded documented essays used in the comparative linguistic analysis in Stage 1. This re-examination was intended to select appropriate A graded papers for the materials development of the project. This re-examination of the A graded papers also contains a number of steps. First, as described in the approved IRB (see Appendix L), only the essays with the consent of their owners were used for the tool development. This process led to an exclusion of four papers out of the A graded corpus for the re-analysis. Then, an experienced English 250 lecturer was recruited to holistically evaluate the 76 selected essays before they were fully analyzed for the materials development. The lecturer agreed that all the selected papers had good source use and overall writing quality. Therefore, no paper was excluded from the corpus of the A graded papers, resulting in the corpus size of 76 papers.

In comparison to other corpora in use, the corpus size in this study is relatively small; however, because this corpus is very specialized with a specific context, its size is sufficient to identify any patterns in different features of citations in the corpus. For example, the corpus of student biology papers in Swales’ (2014) corpus-based study on citation has around 100,000 words. According to the author, this restricted size “does permit individual examination of every
citation” (Swales, 2014, p. 122). The corpus of the A graded papers was then used for the linguistic full analysis in the next stage.

3.2.2.3. Stage 3: Full Analysis on Source Use in the A Graded Documented Essays

The linguistic full analysis on source use in the A graded documented essays follows the procedure and the methodology in the comparative analysis conducted in Stage 1. Figure 9 below presents the procedure for my linguistic full analysis on source use of the A graded corpus, which is divided into four main steps. The first step is to identify and verify all the citing sentences in the corpus. After that, all the detected citing sentences are tagged for different citation features in the second and third step. In the last step, coded citation features are compiled for both quantitative and qualitative analyses in order to answer the research questions. Each step is described below.

Figure 9. Procedure of Linguistic Full Analysis on Source Use
Step 1: Detecting and verifying citing sentences

All the 76 documented papers were first automatically tagged for citing sentences which are defined to have at least one marker of citation by the citation tagger. The citation tagger was developed for the corpus-based pilot study of this proposal, and was developed using a rule-based approach and the CyWrite Analyzer – a platform developed for analyzing language (Chukharev-Hudilainen & Saricaoglu, 2014). The CyWrite Analyzer is built on the Stanford Parser which automatically processes natural language and identifies the syntactic dependencies of constituents in a sentence. As a result, the programming of the tagger was based on the output of the CyWrite Analyzer which has labels of syntactical functions of every word in a sentence. Five Prolog rules and a number of Perl rules were written in order to detect and tag the sentences that contain one of the eleven markers of a potential citation. Citing sentences that had more than one of the markers were tagged only once in their output files. Citation type (i.e., canonical citation or CN1 vs. non-canonical form or CN2) was also tagged. In cases where markers of both citation types were present in a citing sentence, the sentence would be tagged with the citation type 1 or CN1.

In the pilot study, the performance of the citation tagger was evaluated; therefore, no further performance testing on the citation tagger was needed in this stage. A brief report of the performance evaluation of the tagger is provided here. The performance of the citation tagger was assessed by comparing its detection results with the results of manual analyses on the same twelve papers from the corpus. Two evaluation measures in automatic annotation were selected for this assessment: precision (i.e., ratio of actual citing sentences retrieved to all the citing sentences by the tagger itself), and recall (i.e., ratio of actual citing sentences retrieved by the
tagger to all the manually coded citing sentences) (Chukharev-Hudilainen & Saricaoglu, 2014). All the three measures range from 0 to 1 where 1 is the best value.

The performance metrics of the tagger on the 12 texts shows that the tagger identified most of the citing sentences in the manually-tagged sub-corpus, but it also over-identified portions of a text which were not citing sentences. Specifically, the recall value (0.98) means that it located 98% of the manually-tagged citing sentences in the sub-set of the 12 papers; however, the precision (0.81) indicates that only 81% of these detected citing were actual citing sentences.

My further examination of the manually tagged citing sentences that were not tagged by the tagger also found that the failure to detect them was all due to wrong identification of the Stanford Parser used for the CyWrite Analyzer. For example, it was unable to detect “face to face” as an adjective, which led to its erroneous labelling of syntactic functions of words and phrases within a sentence. Given that these sources of errors came from the Stanford Parser itself, the current recall of the tagger was acceptable. Also, due to the low precision of the tagger, manual checking of all the output files from the tagger was required to exclude all the erroneously identified citing sentences by the tagger, thus ensuring that all of the citing sentences detected by the tagger are actual ones before conducting other analyses.

Next, the tagger was run on the whole corpus. The tagger processed individual texts and identified citing sentences. It then produced an output file for each individual corpus text which has tags added to citing sentences. Then, each of the output files was manually checked to verify all the tagged citing sentences. The final set of citing sentences for analysis included 1081 canonical and 588 non-canonical citing sentences. These output files were then used for other analyses of citation
Step 2: Tagging citation features

In this step, all the verified citing sentences in the 76 essays were then tagged for four main features: citation density, author integration, textual integration, and writer stance through reporting verbs. While the first three features were manually tagged, all the verified citing sentences in each of these 76 papers were collected in another corresponding text file before being automatically tagged for reporting verbs by the verb tagger which was also developed for the pilot study. All the manual tagging was done by the researcher. The section below describes the theoretical framework and the coding scheme of these four features.

These features come from the adaptation of Coffin’s (2009) framework for citation which integrates multiple aspects of citation under the unifying perspective of dialogic engagement. The adapted framework is presented in Figure 10. A tabular summary of the complete framework which lists all the citation features and explanations for their functionalities in the dialogic engagement perspective is presented in Table 5.
The adapted framework consists of four citation features: (1) citation density, (2) author integration, (3) textual integration, and (4) writer stance through reporting verbs. I will first describe the coding scheme of each of the three citation features. After that, a brief report of how the coding of these features for citations in the corpus is provided.
<table>
<thead>
<tr>
<th>Features</th>
<th>Types</th>
<th>Dialogic Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citation Density:</td>
<td>Presence of citation detecting features (see Table 2)</td>
<td>A higher citation density means a higher number of cited sources or authors in a paper. Therefore, a paper with a higher citation density tends to be more dialogic expansive.</td>
</tr>
<tr>
<td>Author Integration:</td>
<td>Named-author Integral: the name of the cited author(s) occurs as part of the citing sentence.</td>
<td>Both named-author integral and general-author integral citations are dialogically expansive because cited propositions are presented as viewpoints or perspectives of cited sources rather than as facts. However, the second type is less dialogic expansive as names of cited sources are vague.</td>
</tr>
<tr>
<td></td>
<td>General-author Integral: the source is vague and unidentifiable and occurs as part of the citing sentence (e.g. opponents, the other side)</td>
<td>Non-integral citations are dialogically contractive because cited propositions are presented as facts.</td>
</tr>
<tr>
<td></td>
<td>Non-author integral: the cited author(s) is presented in a parenthesis, or via superscript number leading to a footnote, endnote or bibliography.</td>
<td></td>
</tr>
<tr>
<td>Textual Integration:</td>
<td>Insertion: the writer quotes the cited proposition directly.</td>
<td>A direct quotation, when presented in integral form, gives greater emphasis to the cited proposition as the viewpoint of a single source, and consequently, tends to open up a dialogic space to alternative viewpoints.</td>
</tr>
<tr>
<td></td>
<td>Insertion + Assimilation: combines the other options and presents a cited proposition by both quoting and rewording.</td>
<td>This type is considered to be dialogically expansive due to the presence of original words from cited sources; however, it is still less dialogically expansive than the insertion type.</td>
</tr>
<tr>
<td></td>
<td>Assimilation: the writer paraphrases or summarizes a cited proposition.</td>
<td>A cited proposition when assimilated into the text and presented in the non-integral form, “is likely to be perceived as an established fact, thus creating dialogic contraction”. (Coffin, 2009, p. 174)</td>
</tr>
<tr>
<td>Reporting Verbs:</td>
<td>Acknowledgement verbs: a type of stance in which a writer adopts a neutral or ambiguous position and makes no evaluative judgment on the cited proposition so that he or she could build a distance between him/herself and the cited proposition and avoid being held responsible for its reliability.</td>
<td>Citations using the acknowledgement reporting verb type are dialogically expansive because the neutral position of the writer towards the cited proposition encourages alternative perspectives and voices from the reader.</td>
</tr>
<tr>
<td></td>
<td>Endorse verbs: a position where the writer supports or agrees with the cited proposition.</td>
<td>Citations using either endorse or contest reporting verb types are dialogically contractive because the citing writer indicates a ‘personal investment in the viewpoint being advanced and accordingly increases the interpersonal cost for any who would advance some dialogic alternative’ (White, 2003, p. 271)</td>
</tr>
<tr>
<td></td>
<td>Contest verbs: a position where the writer indicates a negative attitude toward the cited source by direct critique or rejection.</td>
<td></td>
</tr>
</tbody>
</table>
**Citation density**

Citation density refers to how often a writer incorporates external sources into his or her writing. Citation density can be calculated by frequencies of citations divided by the total number of words in a text or a corpus (Coffin, 2009; Hu & Wang, 2014). In this study, the counting of citation follows Hu and Wang’s (2014) approach which defines one cited proposition as one citation. As Hu and Wang (2014) explain, the concept of propositions is similar to the concept of ideas.

In order to ensure consistent citation detection in this study, a cited proposition is further defined as a finite clause which has at least one verb with tense and conveys a complete and new idea in a citing sentence. As a result, a citing sentence might have more than one citation. The examples below illustrate how citations were detected in citing sentence in one of students’ papers where markers of source location are **bolded** and cited propositions are *italicized*:

1. *He calls this the collaborative view of authorship* and *argues that this view would reduce pressure on people for their work, allowing them to focus more on the work itself than their own performance on it* (268-270). *(Text 18_F14_A)*

2. *Goodman similarly notes in his article that in his research he found that Universities had “blanket prohibitions” dealing with a wide range of drugs, but prescription stimulants were not specifically addressed* (260-261). *(<CN1>)*

The citing sentence of Example #1 has two citations because it contains two cited propositions. These two propositions correspond to the two ideas which are complete and independent from each other (i.e., the introduction of the perspective “the collaborative view of authorship” and the argument on the effects of the perspective). On the other hand, the citing sentence of Example #2 has only one citation as it only contains one cited proposition which reports the finding of the cited author’s research.
Author integration

Author integration refers to how names of sources of incorporated propositions are presented in a citing sentence. Because the operationalization of citation has been expanded from previous studies, the author integration framework also had to be expanded. The *author-integral* category in Swales’ (1990) author integration framework was added with a new category called ‘general-author integral’ to make a clear distinction between anonymous and named sources of reported propositions. This new sub-category thus indicates citations which have anonymous sources of reported propositions such as *opponents*, or *many*. As presented in Figure 3, the author integration coding scheme consists of two main categories types (see Appendix B for the full descriptions):

1. *Author-integral* (i.e., the names of cited sources or authors which include *general-author integral* and *named-author integral* types are present as part of a citing sentence)

2. *Author non-integral* (i.e., the names of cited sources are present only in parentheses within a citing sentence).

Textual integration

As introduced earlier, textual integration denotes how the original source is integrated into a citing sentence. As illustrated in Figure 3, the textual integration coding scheme also consists of three categories (see Appendix C for the full descriptions):

1. *Assimilation*: Using the writer’s own words to incorporate external sources into one’s writing.

2. *Insertion*: Directly quoting the cited author’s original words to incorporate external sources into one’s writing.
3. **Assimilation + Insertion**: Using most of the writers’ words and quoting some words or phrases from their original sources to incorporate external sources into one’s writing.

Because the distinction between ‘Insertion’ and ‘Assimilation + Insertion’ types was not clearly delineated in Coffin’s (2009) and Hu and Wang’s (2014) frameworks, in this study these two types are differentiated by the syntactic role of the quoted text. Specifically, a citation is classified as an “Insertion” and an “Assimilation + Insertion” type if the quoted text is a clause or a phrase respectively.

**Writer stance through reporting verbs**

As both Coffin (2009) and Hu and Wang (2014) identified reporting verbs as one of the potential markers of writer stance which refers to attitudes and levels of commitment of writers towards cited propositions, the feature of reporting verbs was selected to systematically investigate writer stance of citations in this study. Therefore, it should be acknowledged that citing sentences without a reporting verb followed by a complement clause were not examined for writer stance.

Moreover, Thompson and Ye’s (1991) framework of reporting verbs was adapted to examine reporting verbs. The adaptation of Thompson and Ye’s (1991) framework of reporting verbs involves the incorporation of writer stance from Coffin’s (2009) framework. This incorporation was motivated by comparative similarities in the operationalization of writer stance (Coffin, 2009) and evaluative potential (Thompson & Ye, 1991). Specifically, both concepts tap on the potential of a reporting verb to convey a writer’s attitude or evaluative position towards a reported proposition, and the ways they are operationalized are quite equivalent.
Thompson and Ye’s (1991) operationalization of evaluative potential of reporting verbs relies on two aspects which are kinds of attitudes and strength of commitment towards a reported proposition. The first one depends on levels of rigor or correctness of a cited proposition whether it is true, untrue, or neutral; for example, a reporting verb that reports a cited proposition as positively true such as ‘prove’ helps to convey a positive attitude of a cited author towards the cited proposition. Similarly, the strength of a cited author’s commitment towards a cited proposition depends on the clarity of attitudes towards a cited proposition; that is, whether the conveyed attitude through a reporting verb is clear (e.g. prove, negate), ambiguous or very contextually dependent (e.g. say, tell).

Similarly, Coffin’s (2009) coding scheme for writer stance in citation consists of four different stances towards a cited proposition including endorse (i.e., showing a positive attitude or position), contest (i.e., showing a negative attitude or position), acknowledgement (i.e., showing a neutral attitude or position), and distance (i.e., showing an ambiguous attitude or position). A reporting verb which conveys a positive evaluation of a cited proposition and a strong commitment in Thompson and Ye’s (1991) framework will help express the writer stance of endorse in Coffin’s (2009) framework. Furthermore, following the recommendation by Hu and Wang (2014) and Lancaster (2014) for the combination of these two stance types in Coffin’s (2009) framework (i.e., acknowledgement & distance) into one as acknowledgement, only three writer stance types are included in the adapted framework for reporting verbs. Each reporting verb is characterized for two major components in this study: denotation and writer stance. Sub-categories of each component with brief explanations are presented in Figure 10. The next section continues to report how each of the citation feature was coded using the adapted framework for citation.
The tagging procedure

In order to conduct the coding of citation features, all the verified output files of the corpus were processed by another program that automatically extracts tagged citing sentences to produce new data files that contain only citing sentences. Each data file was then opened, and each citing sentence was manually coded for three features of citation (citation density, author integration, textual integration).

Due to the existence of many reporting verbs and a total of six sub-categories of reporting verbs, a verb tagger and full lists of categorized reporting verbs were developed to support the coding of reporting verbs in citations of the 76 essays. In other words, the coding of writer stance and denotation of reporting verbs in this study relied only on isolated reporting verbs, but not their contextual discourse.

First, the program processed each data file and automatically identified reporting verbs in citing sentences of each data file. It then created a corresponding data file that contains only reporting verbs of citations in the data file. Next, each of these new data files was manually checked to verify that every identified verb was an actual reporting verb or not. Every verified verb was also converted into its lemma or informative form at the same time; for example, the reporting verb ‘believes’ was converted into ‘believe’. After that, each verified data file was run by another verb counting program to check which sub-category each of the verified verb lemmas belongs to by comparing it with those in the full lists of categorized verbs.

The full lists of categorized reporting verbs were created by combining both published lists in previous studies and the complete verb list from the verified data files. To build the verb analysis framework, an initial reporting verb list was compiled from the results of the published articles on reporting verbs (Bloch, 2010; Charles, 2010a, 2010b; Hyland, 2000, 2002; Nesi,
2014; Pho, 2013; Thompson & Tribble, 2001; Swales, 2014); however, it should be noted that
these published verb lists were derived from the research article genre. For example, in Pho’s
(2013) work on authorial stance in research articles, the author provides a list of only 37
reporting verbs categorized into three major evaluative potential meanings (positive, negative,
neutral). Other corpus-based studies on reporting verbs in research articles added another 98
reporting verbs to the list, leading to a total of 135 items in the initial verb list (Charles, 2010a,
2010b; Hyland, 2000, 2002; Nesi, 2014; Swales, 2014). This initial reporting verb list from
published sources was then added to by another 104 verbs found in the verified data files of the
corpus, making a total of 239 verbs in the final verb list.

All these verbs were then manually categorized in terms of their denotation and writer
stance by the researcher, and each half of the categorized verbs were checked by one of the two
native speakers of English who are graduate students in Applied Linguistics. Only 22 out of the
239 categorized reporting verbs were marked by one of the second coders for re-categorization.
All of these disputable instances were then discussed with one of the two coders until an
agreement on their sub-category was reached.

**Step 3: Tagging rhetorical functions**

In this step, each tagged citing sentence in the essay was manually tagged for rhetorical
functions. The coding of this feature relies on the coding procedure and the taxonomy of citation
functions for students’ documented essays developed in my previous corpus-based linguistic
analysis study (see Appendix D for the full taxonomy). This section first presents the approach of
citation function analyses and the taxonomy of citation functions in the study. Then, a brief
description about the implementation of the coding is provided.
The process of coding citations for their rhetorical functions in this study follows Petrić’s (2007) approach in which a taxonomy of citation functions is created and used as a coding scheme by a coder. The taxonomy in this study is adapted from the synthesis of citation function taxonomies used in previous studies (Coffin, 2009; Harwood, 2009, 2010; Mansourizadeh & Ahmad, 2011; Petrić, 2007). In addition, the relevant chapters in the textbooks for the classes (Lunsford et al., 2013) were also consulted to inform the development of the taxonomy.

The main criteria for assigning a citation to a particular function are a variety of linguistic cues that signal the writer’s intention in incorporating a cited proposition. For example, an evaluation function is coded only when an explicit evaluative language marker is present such as interesting, convincing. As Petrić (2007) notes, the categories in the taxonomy are not mutually exclusive. For example, most citations have the attribution function; however, attribution is coded only when a citation does not have any explicit markers of other functions. Moreover, Petrić (2007) recommends that researchers record all the possible functions of each citation in the writing of novice writers rather than coding only the most salient function. This is because the phenomenon of multifunctional citation is more common in expert writing than novice writing. Therefore, in this study each citing sentence was examined and coded for a primary function and for any possible secondary functions that it might have.

To ensure the reliability and validity of the findings of the functional analyses, a second coder was recruited for this part of the analysis. The second coder was a post-doc in Applied Linguistics with extensive experience in coding qualitative data. Due to the constraint of resources, 10% of the FY writing corpus texts (eight A graded papers) was randomly selected for the functional analyses. After two one-hour calibration sessions, each coder coded eight texts
independently and met weekly to discuss and compare the coding results with each other. All the discrepancies were discussed and resolved before further analyses.

In addition, I also conducted a second tagging on 30% of the corpus (22 essays) three months later in order to calculate inter-reliability. The inter-reliability was 0.95. All the disagreed cases were multi-functional citations as I had tagged their primary functions differently each time. All these cases were closely examined, and a clarification on how to decide the primary function of a citation was added to the coding scheme.

**Step 4: Conducting analyses**

This section summarizes how the analyses of citation features in the corpus of A graded papers were conducted. This step involves two major tasks which are compiling quantitative data and conducting analyses. First, two counting programs written in Perl are used to automatically count the occurrences of all the coded features in the data files of the writing corpus. The counting of citation features is based on the presence of tags in a text. The study follows the Type B design which uses individual texts as a unit of observation (Biber & Jones, 2009). Raw frequency counts of all the citation features are thus normalized to 1000 words for each text to address the variations in total word counts. As a result, each counting program processed each individual output file and normalized frequencies of each citation feature type per 1000 words for each text during the data compilation. The program then produced a data file and printed normalized frequencies of citation features for all the texts in the corpus. These normalized rates in the data file were then used to calculate descriptive statistics for all the five citation features of the corpus. These results were also compared with the findings of the previous corpus-based analysis of the documented essays.
The qualitative measures used in the study involve iterative comparative readings of all the cited features and examinations of their uses in their contexts. Such analyses were expected to provide further explanations for the reported quantitative results and better descriptions of citation practices by college students in the writing corpus.

### 3.2.2.4. Stage 4: Application

The outcomes of the re-analysis of the 76 A graded papers are the fully annotated texts of all the five features (citation types based on the presence of parentheses, author integration, textual integration, reporting verbs, and rhetorical functions), and descriptive statistical results of the frequencies of citations in each of these five features in the corpus. These results were then used to develop the web-based corpus tool. Specifically, the annotated tags were used to allow users to search for citing sentences containing a targeted feature of citation (e.g., author integral) in the web-based corpus tool. The descriptive statistical results of the citation frequencies in each citation feature were visualized as graphs which show distributions of citation frequencies across different sub-types of the citation feature. The results of the analysis on rhetorical functions of citations in the corpus of the 76 documented essays are presented in Table 6. These results were then converted into a visualized column chart in the corpus-based tool as a critical component of the web-based corpus tool.

### Table 6. Distribution of Citation Frequencies across Types of Primary Functions

<table>
<thead>
<tr>
<th>Rhetorical Functions</th>
<th>Grade A Corpus (76 essays with a total of 125,100 words)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw counts</td>
</tr>
<tr>
<td>Position Support</td>
<td>1247</td>
</tr>
<tr>
<td>Position Identification</td>
<td>100</td>
</tr>
<tr>
<td>Context Establishment</td>
<td>99</td>
</tr>
<tr>
<td>Compare and Contrast</td>
<td>70</td>
</tr>
<tr>
<td>Attribution</td>
<td>13</td>
</tr>
<tr>
<td>Evaluation</td>
<td>33</td>
</tr>
<tr>
<td>Example</td>
<td>34</td>
</tr>
</tbody>
</table>
The results of the quantitative analysis on the four features of citation types, author integration, textual integration, and reporting verbs are not much different from those in my previous corpus-based linguistic analysis. However, the results on frequency distributions of citations across types of rhetorical functions in this re-analysis are much different than those of the pilot study as they show a greater discrepancy between the citation frequency on Position Support and the frequencies on other functions. This variation could be explained by the difference in the corpus sizes in the two rhetorical function analyses.

### 3.2.3. The Technological Basis of the Materials

As described above, the teaching materials on source use in this study consist of the Moodle-based lesson and a web-based corpus tool. The tool is used to help students answer the questions in the lesson, and both are delivered through an Internet-connected computer in a lab meeting. This also means that students need to open both the lesson and the web-based corpus tool in two different tabs in the browser at the same time, and switch between the two tabs to complete the lesson. This section briefly describes the technological basis for developing these two components.

#### 3.2.3.1. The Moodle-based Lesson

The lesson was built on Moodle because it is the course management system used by the writing program. There were several reasons for its use. First, Moodle is claimed to be “a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalized learning environments” (Moodle website,
2016). The writing program also provides many major reasons for choosing Moodle as the default learning platform instead of Blackboard, which is the default course management system of the rest of the university. Three of the reasons are directly relevant to my lesson. First, the Moodle offered by the program is contextualized to meet the needs of the curriculum. “Much of its functionality is a product of dialogue between the Online Learning Team (OLT) and users, as well as consultations with Moodle’s online support community, which creates and modifies the platform with pedagogical needs in mind” (ISU Comm Foundation Courses Instructor Guide for English 150 and 250, 2016). Secondly, the program has control over the software, its development, and users’ data. As a result, the platform is very suitable for collecting data for research purposes because there is no need to coordinate with outside sources other than IRB to access the users’ data. Another important reason is that the system is expected to provide a lot of flexibility for instructors to design the course and develop materials in their course in order to suit their needs. These three major reasons make Moodle as an appropriate learning platform for delivering the lesson in this study.

Another reason for building the lesson in Moodle is that the program also provides technical and instructional support for Moodle users through the Online Learning Team (OLT). The OLT is made up of graduate students who serve as instructors in the writing program. Therefore, they not only provide technology consultations but also pedagogical consultations on how to effectively incorporate technology in the classroom. Beside the context-specific documentation on how to use Moodle, these students offer support by email and in-person in their daily office hours. In fact, I utilized this resource very often during the development and implementation of the materials. With the help of the OLT, a course site for the project was created. On this site, I was able to create the lesson, the pre-test, and the post-test as the three
major components of the online lesson. I also stored other relevant documents for instructor participants of my study such as the brief rationale for the teaching materials, the consent forms for instructors, the consent forms for students, and the slides for the lesson. The OLT also assisted me with providing each instructor with individual access to the course site and the lesson so that I could easily track the users’ data on the platform more easily.

Because the user account in Moodle is based on the user’s university net ID, it is also convenient for both instructors and students to access the lesson in Moodle whether they use Moodle or other learning management systems. All the instructor participants were enrolled into the course site as instructors. Each of them was provided with separate instructions to access the Moodle site and the lesson to distribute to their students. Generally, the instructions included a link to the Moodle site holding the lesson, and the course enrollment key for the students to enroll into the course site.

Overall, the development of the computer-based lesson involved a number of resources which consisted of my own review of available activities for corpus-based materials development, the inductive learning approach in DDL, and my own knowledge about the learning platform with consultancy from the OLT. Figure 11 presents the major elements of the designed lesson in Moodle. The top two circles in the figure correspond to the theoretically-informed design principles and characteristics that have been introduced previously. Further explanations for how they informed the technological design of the lesson are provided here.
After reviewing common activities used in the corpus-based materials development (Gilquin & Granger, 2010; Harwood, 2009; Reppen, 2010), I decided to use three question types for different purposes; I used multiple-choice questions to check the students’ understanding of the observed features of source use, matching activities (i.e., students have to match either a citing sentence or an explanation with its corresponding rhetorical function) to check their understanding of rhetorical functions, and open-ended questions to ask them to produce explanations about the observed patterns of source use and to induce strategies on source use for their papers. These types of questions are offered in the Moodle platform. In addition, the platform provides an option of providing immediate feedback for students on their responses by clicking on the “Check” button for each of these question types.
Figure 12 shows how the feedback functionality is operated in Moodle for the multiple-choice questions. After clicking on the “Check” button, a student’s answer is color-coded to show if it is correct or incorrect. Students are also provided with brief feedback on their responses which either gives further explanation on the feature, or instruction on what they should do to double-check their response.

Figure 12. Immediate Feedback on Students’ Responses

After finishing each group of questions organized on one course page as a part of the lesson, the students are instructed to navigate to the next page or the next task of the lesson by clicking on the “Next” button under the lesson box holder. Finally, when the students have completed the lesson, they are guided to review the whole lesson. At this step, they can check their performance on the whole lesson, and revisit any questions in the lesson for reviewing and reinforcing the content.
3.2.3.2. Web-based Corpus Tool

This web-based corpus tool is intended to provide a user interface that helps users search for citing sentences with specific features (e.g., quotation in the textual integration) from the collection of 76 A graded texts that had been annotated in the content development stage of the materials development. For each search, there are two outcomes displayed on the tool. The first result is a collection of citing sentences with the targeted feature, and the second one is the frequency distributions of citations across sub-types of the targeted feature in the corpus. Figure 13 illustrates the system architecture of the web-based corpus tool.

![Figure 13. System Architecture of the Web-based Corpus Tool](image)

As can be seen from the figure, the user or client sends a request about a certain feature of source use through the tool interface to the web server through the Internet. On the server side are stored files to run the tool including the corpus of annotated A graded papers, and a database to keep track of the tool usage information of users. Based on the request sent by the client, the
tool will locate the corresponding citing examples in the tagged corpus in the server, and the quantitative information on the frequency distributions of citations in the targeted feature. These outcomes will be displayed to the client on the interface of the corpus tool through the Internet. At the same time, all the information, including the user account information, and the usage of the tool such as the kinds of searches with their timestamps and the amount of time spent on the tool (i.e., this is measured by the amount of time when the tool’s webpage is active and on the top of other pages on the user’s laptop) are constantly recorded in the database, thereby amassing detailed data about the learner interaction with the tool. Below I describe all the components of the corpus tool in more detail.

a. Web server

The tool is located in the server of the college which is maintained by the Information Technology (IT) team. A technician in the team helped me to set up an account so that I can access the server and upload the tool onto the server. The tool is also made available only to students and instructors at the university, so the web application is not made publicly accessible. This means that both instructors and students need to provide their university net identification information in order to log in the corpus tool. They can access the tool at any time on campus, but they need to use a virtual protocol network (VPN) to access the tool when they are off campus. Instructors and students living off campus are expected to be familiar with the VPN as they need to use it for many purposes. The IT team also helped me with setting up the one-time log-in for users of the tool, and provided me with a database which stores all the users’ records of using the tool.
b. **PHP web development**

A web developer was hired to develop the tool. The developer was provided with the tool specification which details all the desired features of the tool, and was required to meet me in person to further discuss my needs for the tool. He then proposed his solution to develop the corpus tool. Prior to being implemented, all the technical and programming decisions were discussed with the principal investigator of the *CyWrite* Project who is also faculty for the department. Finally, the optimal programming language of the corpus-based tool on the web server was determined to be *PHP*. The corpus tool also uses jQuery for searching and displaying results, and *Google* Charts to implement visual displays of the quantitative results. The following focuses on the user interface design of the tool, which is considered to be essential to users’ experiences with using the tool.

c. **User interface design**

With the purpose of making the tool recognizable to the university community, a university website template was used to develop the web design of the tool. Many features of the web design, including the color scheme, typography, and the setting for the table display were available to choose from. Moreover, a sketch of the user interface design of the tool was also created before it was officially developed as a web page.

The sketch of the user interface design of the tool was informed by the examination of a number of existing corpus tools available for language teachers and learners (e.g., wordandphrase.info, micase.elicorpora.info). The well-documented web design and development for the Michigan Corpus of Upper Level Student Papers (MiCUSP) (O’Donnell, Brook, & Romer, 2012; Romer, O’Donnell, Brook, 2011) were closely examined and finally chosen as a model for the sketch of the tool interface design because the design of that corpus tool was
positively evaluated through a usability test by its developers. The principles of web design were also taken as a guide for the design process of the corpus tool (Krug, 2014). The sketch of the web interface design was also reviewed by the principal investigator of the CyWrite project and by an expert in human computer interaction for revision before its official web development.

Figure 14 illustrates the user interface of the tool. When a user searches for citations with the *named-author integral* feature, the tool will display the column chart visualizing the proportional distribution of citations across the three types of author integration (*named-author integral, genera-author integral, and non-author integral*) in the corpus. The user can also see examples of citing sentences with the *named-author integral* feature and select any concordance line for more contextual information (i.e., ten sentences before and after that citing sentence) for further examination.

There are three important components in the final web interface of the tool which are (1) a menu of citation features and a search box, (2) visuals on citation frequencies or distributions of citations across different types of a certain citation feature in the corpus, and (3) a display of concordance lines for observation. The menu allows users to interact with the corpus by searching for citations in the corpus containing a specific feature of citation (e.g., author integration, textual integration). More specifically, students can search for different sub-categories of certain citation aspects such as *named-author integral* citations, or *non-author integral* citations. In addition, the search box enables a user to search for any citing sentences containing a specific word or phrase.
After a user finishes one of the desired searches, the tool will provide two outputs for each search. The first output is a visualization of the data in a column chart displaying the proportional distribution and frequency of citations with the targeted feature in comparison to the other types. The second output is a list of concordance lines which show citing sentences that use the targeted feature. The title of the essay containing the concordance line is also given to provide further contextual information so that students can better understand the meaning of each given citing sentence better. Furthermore, students can click on a concordance line of interest for further contextual information, which displays a short excerpt made of 10 sentences before and after the selected citing sentence. They can then return to the corpus tool by clicking on the “Back” button which is right under the given excerpt.
d. The database

As described above, the database of the tool stores records of users’ usage of the tool including the user net identification (net ID) information, the kinds of searches or activities in the tool with timestamps, and the total amount of active time on the tool (i.e., the tool web is on the top of other web pages). Two programs were written to retrieve and store all of the information in the server. Figure 15 illustrates how the usage record of a user is displayed on the administration page when clicking on the user’s net ID from the list of users’ records.

![Figure 15. An Illustration of the Record of Using the Tool](image)

As shown in the figure, both the kind of activities or searches by the user on the tool and its timestamp are recorded. As a result, the administrator of the tool can access such information by logging in the administration page of the tool and export it as an Excel file.
3.2.4. The Piloting of the Materials

The development of the teaching materials on source use in the study is also supported with empirical evidence which was collected from meetings with the instructor participants on the materials, testing of one student, and piloting the materials in a classroom before the materials were officially used for data collection. First, the materials along with a short paper explaining the rationale for the materials design, were distributed to the instructor participants for comments and opinions. Each instructor was also scheduled for a short meeting in which they shared their comments on the materials with me. This stage led to a significant reduction in the number of questions in the lesson from twenty-eight to fourteen although the number of tasks remained unchanged. Most of the deleted questions were related to the linguistic-based forms of source use. The reason for the deletion of these items is that the linguistic-based forms of source use are only one part of the lesson, and the students are expected to spend their class time equally on the two major features of source use which are its linguistic-based forms and its rhetorical functions. As a result, the final lesson has a total of fourteen questions; ten of them are related to linguistic-based forms of source use, and four of them are relevant to its rhetorical functions. It should be added that each of the four questions in the rhetorical functions of source use has many more items than each of those in the linguistic-based forms.

Before the official piloting of the materials in a classroom, a college student of the target course was recruited to take the lesson to test if there was any issue with the designed materials. The purpose of the session was explained, and the student was told to follow the instructions in the lesson. The student was also given a brief background survey on prior experience with using a computer or a web application for educational purposes. While taking the lesson, the user’s completion of the materials was observed, and any issues that the student encountered during the
lesson were noted. After completing the lesson, the student was asked to fill out a quick usability testing survey on the teaching materials based on his experience. A brief debrief on the learner’s experience with the materials was conducted, and suggestions on improving the materials were solicited at the end of the testing session.

Overall, the student was able to complete the lesson and use the tool with little difficulty. However, based on my observation of the completion of the lesson and the post-lesson interview, several changes to the materials, including both the lesson and the corpus tool, were made at the end of this stage. First, a link to the tool was integrated into each instruction of every question in the lesson. Secondly, the wording of the instructions and several questions in the lesson was also revised in order to make them clearer and more direct to the students. Importantly, one error in the legends of the column chart of reporting verbs on denotation was found. The chart was then updated accordingly. Moreover, because the student was observed to be unable to click on the citing sentences for their further contextual information, an instruction was added as the initial interface of the corpus tool, and added to each question on the rhetorical functions of source use.

The student also suggested using other channels such as audio or video files to substitute written introduction and explanations in the lesson so that the students would not have to read. However, due to the constraint of the resources, this suggestion could not be implemented for the final teaching materials.

In the final piloting of the teaching materials in an actual class, the instructor disseminated the instructions to access the materials to the students and asked them to complete them in class. I also attended the class to observe the students working on the materials and support the instructor as needed. The students were also asked to fill out the post-training survey
which has questions on evaluating the materials. A debrief with the instructor after the class was also conducted to collect her opinions on the teaching materials.

The results of the survey and the interview in this piloting stage resulted in several changes to the teaching materials. The biggest modification was the rewording of the terms used to describe features of source use in the tool and in the lesson. For example, instead of using “Canonical” to name one type of citations which contains the presence of parentheses, I decided to use “Parenthetical” as this word would be more familiar to the students. Because both the instructor and many of the students commented that the students were confused about the purpose of the lesson and suggested that a brief discussion before and after the lesson between the instructor and the whole class would be beneficial, a supplementary slide presentation was created for instructors to use before the class. The purpose of this presentation was to assure that students understood the purpose and the tasks of the lesson. A further suggestion on the follow-up in-class activities after the lesson was also added to the teaching guide for the instructor participants to reinforce what students have learned in class.

3.3. Chapter Summary

This chapter provides a detailed description of the instructional context of the teaching materials and the four main components of the design and development of the teaching materials which include the computer-based lesson and the web-based corpus tool. The presentation of the theoretical background of the materials, which is the most critical component, illustrates how the relevant learning theories have shaped the characteristics of the teaching materials and provided the principled approach to the materials design and development. These characteristics were then shown to inform the design decisions of the actual materials. The content component of the materials described the four-stage process to convert the results of the corpus-based linguistic
analyses on source use in the A graded papers including the corpus of annotated texts and the distributions of citations across types of each feature of source use into the content of the teaching materials. Similarly, the next section on the technological background of the materials provided a clear presentation of how available affordances of the technologies were utilized to develop the teaching materials. The last component summarized the three sources of empirical evidence that support the development of the teaching materials before the official implementation of these materials in multiple classes that is presented in the next chapter.
CHAPTER 4: METHODOLOGY

The purpose of this chapter is to describe the research design, the data collection and analysis that were used to answer the research questions stated in Chapter 2. The chapter first explains the mixed-methods design approach of the study followed by a presentation of the context of data collection which includes the participating classes and participants of the study. The description of the participating classes also covers the specific situational characteristics of each class. Then, a detailed report of each data collection method with its instruments and materials is provided together with the procedure for collecting the data. The chapter ends with a presentation of how the data were analyzed to answer each research question.

4.1. Approach

The methodology used in my study is called the convergence model which is a traditional model of the mixed-methods triangulation design (Creswell & Plano Clark, 2007). This is a mixed-methods methodology because it involves collecting, analyzing, and mixing both quantitative and qualitative data in a single study to provide a better understanding of research problems than either approach alone. The definition of the convergence model is based on the combination of timing, weighting, and mixing decisions of quantitative and qualitative methods, and the research purpose. In this design, both types of data are given equal emphasis, and the two sets of results are converged during the interpretation to draw valid conclusions about a research problem. As stated, “researchers use this model when they want to compare results or to validate, confirm, or corroborate quantitative results with qualitative findings” (Creswell & Plano Clark, 2007, p. 67).

The convergence model has recently become more popular in evaluation studies of CALL and in Applied Linguistics. Both types of data from various sources (e.g., interviews,
surveys, pre- and post-tests, journals) are collected and analyzed in order to evaluate an object of examination, for example, a program or a certain type of teaching materials. For example, many researchers have used this model to examine the effects of a CALL application on outcomes, processes, and perceptions of the users (Cotos, 2011; Cotos, 2014; Cotos & Huffman, 2013; Huang, 2014; Yoon, 2016).

Figure 16. Triangulation Research Design: Convergence Model (adapted from Creswell & Plano Clark, 2007, p. 63)

To answer the research questions, the convergence model was employed. As illustrated in Figure 16, this model involves the convergence of the different results from the researcher’s separate collection and analysis of quantitative and qualitative data during the interpretation of the results. The purpose of this model is to “end up with valid and well-substantiated conclusions about a single phenomenon” (Creswell & Plano Clark, 2007, p.65). This model was thus adopted in this study to develop a well-supported evaluative argument on the appropriateness of the computer mediated DDL learning tasks for college student writers in their college-level writing courses.
Moreover, as indicated in Chapter 2, this study was also guided by the four criteria in Chapelle’s (2001) framework which are integrated in the theory of action framework for the materials. As a result, this mixed-methods evaluation design of this study was intended to address the issue of investigating evidence pertaining to the four qualities of the materials on source use for college students in their college-level writing courses. Specifically, both qualitative and quantitative data for the evaluation of the learning tasks were collected and analyzed separately before being compared and contrasted during the interpretation for each evaluation criterion. As illustrated in Figure 16, the quantitative data consist of (1) students’ responses to Likert-scale questions in questionnaires on students’ evaluation on the effectiveness of the materials, (2) students’ responses to Likert-scale questions in questionnaires about metalinguistic and pragmatic awareness about source use before and after the instruction, (3) teachers’ responses to Likert-scale questions in questionnaires about their perceptions of the need for giving source use instruction and effective teaching strategies on source use for college student writers, (4) students’ scores on citation use pre- and post-tests, (5) students’ source use quality scores on the first and revised drafts, and (5) records of students’ interactions with the learning tasks and the web-based corpus tool (e.g., the amount of time, types of activities). The qualitative data include (1) students’ and teachers’ interviews of their experiences with the learning tasks, (2) students’ stimulated recalls on their interaction with the learning tasks, and (3) their open-ended responses to the questions in the Moodle-based lesson and the journal.

To investigate the four qualities in Chapelle’s (2001) framework, the quantitative data in this study were used to provide evidence about the learning outcomes of learners after using the materials and the participants’ evaluations of the materials based on their experiences. The qualitative analyses were used to explore in-depth perceptions of the users on the four qualities
of the materials. Both qualitative and quantitative data for the evaluation of the materials were then collected and analyzed separately before being compared and contrasted during the interpretation for each evaluation criterion. The reason for collecting both quantitative and qualitative data at the same time was to compare and validate the quantitative results on each of the four qualities of CALL appropriateness of the materials on source use with the qualitative results. Given the limited amount of intervention duration and the complexities of learning a language in a naturalistic instructional context due to the involvement of multiple factors including instructors and individual learner differences, the model allowed me to construct a well-supported and justified evaluative argument on the appropriateness of the computer mediated DDL learning tasks for college student writers in their college-level writing courses.

4.2. Participants

The general description of the instructional context of this course is given in Chapter 3. Following the suggestions by Collins (2010), the beginning of this part first describes the overall sampling design of the study consisting of the sampling scheme and the sample size for each group of participants to achieve the purpose of the study. Specific information about the instructional contexts of participating classes and the participants of the study are provided in the following sections.

4.2.1. Sampling Design

As stated in Chapter 2, the findings of the study were expected to construct the situation-specific argument on the effectiveness of the characteristics and principles of the materials design and development that I used in my project. The interpretations of the results could likely be generalized to students with similar characteristics in a setting similar to those in the study. To make that level of generalization, I followed the sampling design below for my study. The
sampling design for my study consists of the sampling scheme and the decision on sample size each of which is presented in the following subsection.

**Sampling Scheme**

The participants of this study included both instructors and students in a college-level English composition course at a large Midwestern land-grant university in the United States. Both instructor and student participants were selected from a naturalistic setting, which means that they were in actual classes of a college-level composition course. The instructors of these courses came from different backgrounds, but had, at a minimum, a Master’s degree, or were enrolled a Master’s degree program and had taken a semester-long graduate course on composition pedagogy at the university. The participating students were either American or international students who had satisfied the prerequisites for the course, which are either having successfully taken the lower-level foundational communication course or having an exemption earned from ACT-E/SAT-EWR/SAT-CR official scores, or the course test-out.

Data collection consisted of two major stages, one before and one after the implementation of the materials on source use. As detailed below, different sampling schemes to recruit each group of participants were needed for each stage of data collection.

**Pre-implementation Stage**

For the pre-implementation stage, the sampling scheme for both instructors and students was homogeneous and convenience (Collins, 2010, p. 358). As the homogeneous sampling scheme means “choosing settings, groups, and/or individuals based on similar or specific characteristics” (Collins, 2010, p. 358), the recruitment of both instructors and students to participate in the survey, the pre-training survey for students, and the pre-test on source use fit this definition well as they all had a number of common characteristics. For the instructors, they
had to either have taught the course before or be teaching the course in the semester of data collection. For the students, they were all from the classes whose instructors agreed to participate in the study and use the materials on source use in their classes. These students also had to write a source-based essay as required work for their classes as well. The convenience scheme is defined as “choosing settings, groups, and/or individuals that are conveniently available and willing to participate in the study” (Collins, 2010, p. 358). Congruent with this definition, all the instructor participants in this study who accepted my invitation were instructors of English 250, the second of two semester-long foundation courses in English composition. Moreover, both the instructor and student participants of the study had to sign the IRB-approved consent forms to participate in this study. In other words, their participation depended on their willingness to participate in the study.

Post-implementation Stage

For the post-implementation stage, the sampling scheme for instructor participants in this study combines snowball, homogeneity, and convenience (Collins, 2010, p. 358). The snowball coding scheme refers to the process where “participants are asked to recruit individuals to join the study.” The original process for recruiting participants in this study was intended to reach as many instructors of the course as possible. However, due to the instructional context of the study, as opposed to contacting lecturers in the English department whose workload might prevent participation, I was encouraged to contact graduate students in the Applied Linguistics and Technology program. I also used personal contact and asked willing participants to recruit other instructors of the course who might be interested in using the materials in the classroom.

The instructors in this study were also selected based on two major characteristics. First, they were teaching the target course. Secondly, they used a source-based assignment in their
classes. In other words, only the classes whose instructors chose to use a source-based writing assignment as one of the required assignments were chosen for the study. In this source-based assignment, the students must choose a topic, collect sources on that topic, and synthesize them in order to write up their papers for a specific ultimate goal. Both instructor and student participants also had to agree to use the materials on source use that I developed in their regular classes during the course. As explained above, the instructor participants in this study fit within the definition of the convenience sampling scheme well because their participation depended on their willingness to participate in the study.

Similarly, the sampling scheme for recruiting student participants in the post-implementation stage was also homogeneous and convenience. Based on the definitions of these two scheme types above, the recruitment of student participants in this study matched these two characteristics very well. All the participants shared a number of common characteristics. They were all from the classes whose instructors agreed to participate in the study and were going to write a source-based essay as a required assignment for these classes. And they all used the materials on source use in one of their regular classes. Moreover, their participation also depended on their willingness to participate in the study.

For interviews and stimulated-recalls in the post-implementation stage, another sampling scheme for student participants called quota was also used. This scheme refers to the process where the “researcher identifies desired characteristics and quotas of sample members to be included in the study” (Collins, 2010, p. 359). Accordingly, a specific number of four participants for each of these qualitative instruments was defined in this study and the data collection stopped whenever the number of participants reached that quota. The first four students who responded to my invitation email to schedule a meeting for interviews and
stimulated recalls were selected for data collection. These students also had to attend the class when the lesson was delivered. Given the constraints of the instructional context, which are inevitable in instruction-embedded research, both the instructors and the students in the implementation of the materials in this study constitute a convenience sample; however, it is believed that these recruited students are representative of the target learners of the designed activity, namely, college student writers who must integrate external sources to write their own papers for the course as a partial requirement of the course fulfillment.

Sample Size

The sample size for quantitative and qualitative methods in the study was also decided to achieve the distinct purpose of each type of findings in the study. For quantitative methods including surveys and tests, as the study had the within-subject experimental design, a minimum number of 21 participants per group was needed for one-tailed hypothesis (Collins, 2010). Finally, 24 instructors were recruited for the pre-training instructor questionnaire, and 139 students for the pre-training student questionnaire. An addition of 71 responses to the post-training student questionnaire, including 64 responses to the metalinguistic and pragmatic awareness survey, was also gathered. Moreover, 68 responses to the pre- and post-tests on source use were retrieved from the Moodle. Computer-based logs of 100 student participants in the eight participating classes were also collected for analysis. Because the purpose of the qualitative methods in this study was to document and understand each case for in-depth description and comparison of learning experiences with the materials (Collins, 2010), a minimum number of three participants was needed for qualitative methods including interviews, stimulated recalls, and students’ written works. As a result, four interviews and four stimulated recalls were conducted with the students. In addition, 100 journals and responses to the open-ended questions
in the Moodle-based lesson, which were written by the students, were also gathered for qualitative analysis. Two interviews with two out of the three instructor participants excluding the researcher were taken.

### 4.2.2. Instructional Contexts

As described above, the instructors of the course in Fall 2016 were contacted through email by using personal contact and the snowball technique to check if they were interested in learning about the materials on source use that I developed. They were also invited to schedule a meeting with me to learn about the materials before deciding to participate into the study. A total of five instructors, including the researcher, decided to implement the materials in their classes. However, one of the instructors was unable to use the materials due to some unexpected changes in the class syllabi. As a result, a total of eight sections with four instructors participated in the study. This section is intended to describe the instructional contexts of the participating classes in the study.

The major characteristics of the eight participating classes in the study are summarized in Table 7. Although all the participating classes were in the regular program, there were several instructional differences among these sections. As described in the instructional context of the course in Chapter 3, the program offers multiple sections with different foci for students to choose from. For example, the two classes taught by the researcher were cross-cultural sections as a half of these sections was reserved for American students and the other for international students to get enrolled (see Table 7). While most of the participating classes were full-semester, one of them was a half-semester long. The individual class time of these classes could be either 50 minutes or 120 minutes long.
Table 7. Summary of Instructional Contexts of Participating Classes

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Instructor #1</th>
<th>Instructor #2</th>
<th>Instructor #3</th>
<th>Instructor #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class information</td>
<td>Full semester &amp; three 50 minute in-class meetings/week</td>
<td>Full semester &amp; three 50 minute in-class meetings/week</td>
<td>Full semester &amp; two 80 minute in-class meetings/week</td>
<td>Full semester &amp; two 80 minute in-class meetings/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full semester &amp; two 80 minute in-class meetings/week</td>
<td>Full semester &amp; two 80 minute in-class meetings/week</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full semester &amp; two 80 minute in-class meetings/week</td>
<td>Half semester &amp; two 1200 minute in-class meetings/week</td>
</tr>
<tr>
<td>Class size</td>
<td>23</td>
<td>24</td>
<td>24</td>
<td>18</td>
</tr>
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<td></td>
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<td>20</td>
</tr>
<tr>
<td>About learners</td>
<td>Mostly Americans, freshmen, &amp; women primarily in microbiology majors.</td>
<td>Mostly Americans &amp; sophomores in different majors</td>
<td>Mostly Americans &amp; sophomores in different majors</td>
<td>Mostly Americans &amp; sophomores in different majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cross-cultural section (4 international students, 14 American students) &amp;</td>
<td>Mostly Americans &amp; sophomores in different majors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mostly sophomores in different majors</td>
<td>Mostly Americans &amp; sophomores in different majors</td>
</tr>
<tr>
<td>Theme</td>
<td>The Language of Science</td>
<td>Not specific</td>
<td>Cross-cultural section (7 international students, 10 American students) &amp;</td>
<td>Not specific</td>
</tr>
<tr>
<td></td>
<td>“Autism’s False Prophets: Bad Science, Risky Medicine, and the Search for a</td>
<td></td>
<td>Mostly Americans &amp; sophomores in different majors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cure” by Offit P. (2008)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Changed”</td>
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<td></td>
</tr>
</tbody>
</table>
Table 8 continued

| The assignment | Documented Essay on a Disease: Each student writes an essay about a vaccine-preventable disease, using CSE citation style. Some exceptions of topic (about four) were made for non-science majors. | The same template assignment sheet and scoring rubric provided by the program. However, the assignment is a group collaborative work which means that everyone in a group contributes to the writing paper. The same template assignment sheet and scoring rubric provided by the program. However, students have to choose a language-related topic to write about. They are also required to use at least 4 sources including one in the textbook. | Used the same template assignment sheet and scoring rubric by the program. |
As shown in Table 7, there were some slight differences in class size among these sections although most of them had at least 20 students. Most of the students in these classes, except for the two cross-cultural sections, were Americans and sophomores. Because each instructor of the course was allowed to modify the programmatic syllabus template to achieve the common course objectives, there also existed a number of variations in teaching materials among all the participating sections in this study. First, each of these sections had a theme which tied to its chosen reading book. As shown in the fourth and fifth rows of Table 7, these participating classes had various themes and different reading textbooks although the most commonly used lecture book, which was the first one in the list in the table, was the “Everything’s an argument” book. While most of the instructors of these sections allowed their students to choose either MLA or APA style for their writing, the first instructor specified the Council of Scientific Editors (CSE) citation style for the students in the first section because the class had a science theme.

Although all of the instructors in these sections required the students to collect and use sources to write a paper for the source-based assignment, the instructions for the assignment varied among them in terms of topics, purpose, type of work, and scoring rubrics. The variations in topics among these sections were due to their differences in themes. The instructors also had various purposes for the assignment as well. Some instructors asked their students to write the paper to form and support an argument, and others asked them to examine multiple viewpoints on the chosen issues by synthesizing and examining their collected sources. In terms of work type, the assignment was designed to be individual work in six of these sections which means that every student had to write his or her own paper. It was designed to be a collaborative writing project by one of the instructors in her two sections. As a result, the scoring rubrics in these
sections had some differences although they all contained the same major components including Context (i.e., purpose), Substance (i.e., content), Organization, Style, and Delivery.

In terms of assignment schedule, the major steps to prepare the students for the assignment were quite similar among these sections. They consisted of collecting and evaluating sources, writing bibliographies, writing outlines, and doing peer reviews. However, the timeline for the main project varied among these classes. For example, while in sections #1, #6, #7, and #8, the instructors introduced the assignment much earlier in the course, this project was not introduced until near the end of the semester as the last assignment in other sections. In terms of supplementary instruction and materials on source use, most of the instructors focused on giving the students guidance and practice on how to cite a source using their reference book in the previous assignments of the semester and during the source-based assignment. Finally, while two of the instructors used Blackboard as the course management system, the other two chose to use the Moodle system.

4.2.3. Instructor Participants

This section describes the characteristics of the instructor participants in this study after the summary of recruitment of the instructor participants for the study. As described in the section about the sampling design, the instructors of the course were involved in two different data collection phases of the study. In the first phase, all the instructors of English 250 in Spring 2015 and Fall 2016 were invited to take the questionnaire survey for instructors. This intent of the survey was to collect information about their teaching practices on source use in their classes, their perceptions of the source use skills of college student writers in their classes, and their attitudes towards some teaching strategies on source use for these students. In the second phase, only the instructors of the course in Fall 2016 were contacted via email to invite them to use the
materials on source use in their classes. They were also invited to schedule a meeting with me to learn about the materials before deciding to participate into the study.

Further descriptions of the characteristics of the instructor participants are provided here. Similar to the general descriptions of instructors of the course in Chapter 3, the four instructor participants of the study, including the researcher, had different backgrounds and teaching experiences with the course. Table captures major demographic and teaching experience information of these participants. The information includes gender, age, nationality, teaching position, and their years of teaching experience. It should be noted that the last column refers to the number of semesters that they taught the course excluding the semester when the data collection was conducted.

Table 8. Summary of Demographic Information about Instructor Participants

<table>
<thead>
<tr>
<th>ID</th>
<th>Gender</th>
<th>Age</th>
<th>Nationality</th>
<th>Position</th>
<th>Educational Background</th>
<th>Teaching Experience (in years)</th>
<th>Course Teaching Experience (in semesters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female</td>
<td>28</td>
<td>American</td>
<td>Lecturer</td>
<td>B.A in Biology, M.F.A in Creative Writing M.A in TESOL, B.A in Elementary Education</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>40</td>
<td>American</td>
<td>Lecturer</td>
<td>M.A in TESOL, B.A in Elementary Education</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Female</td>
<td>32</td>
<td>Vietnamese</td>
<td>Graduate Student</td>
<td>Ph.D student in Applied Linguistics and Technology, M.A in TESOL, B.A in English</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Female</td>
<td>35</td>
<td>American</td>
<td>Lecturer</td>
<td>M.A in Rhetoric, Composition, and Professional Communication B.A in Speech &amp; Communication</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

As shown in the table, all the four instructor participants, except for the researcher, were lecturers, and had various backgrounds. While one of them had taught the course for three semesters, the other two had no prior teaching experience with the course. All these instructors
were then invited for an interview after the in-class implementation of the materials to gather their insightful perceptions of the teaching experience.

4.2.4. Student Participants

This section presents the characteristics of the student participants in the study. As described in the sampling design section, all of the students in the classes of the instructor participants in Fall 2016 were recruited to participate in the study. About 178 students in the eight participating sections were invited to take part in the study. Congruent with the general descriptions of the students of the course in Chapter 3, the information provided by the instructors about the students in the sections, and learners’ responses to their demographic background in the pre-training survey show that the students of these sections had few variations in their demographic background, including their college year of study, their majors, their nationality, their first language. Table 9 and Table 10 below summarize the demographic information of 139 student participants who took the pre-training survey.

Table 9. Summary of Demographic Backgrounds of Student Participants

<table>
<thead>
<tr>
<th>Program</th>
<th>Gender</th>
<th>Age Range</th>
<th>Semesters of College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular</td>
<td>Honors</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18-23</td>
<td>23-28</td>
</tr>
<tr>
<td>139</td>
<td>0</td>
<td>73</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>138</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>97</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 9 covers four major pieces of demographic information. As shown in the table, all of the students in these participating sections were in the regular program. There was also a relatively equal distribution of students in terms of gender. They were all within the age range from 18 to 23 years old. Most of them were in the second semester to the fourth semester of their college life.

Table presents the distributions of student participants in the pre-training survey across different majors and first languages. As shown in the table, the student participants came from different disciplinary backgrounds. The four most frequent majors were Mechanical Engineering
Moreover, the majority of the participants were native speakers of English (106) while only 33 of them spoke other languages as their first languages.

Table 10. Summary of Majors and First Languages of Student Participants

<table>
<thead>
<tr>
<th>Majors</th>
<th>Counts</th>
<th>First language</th>
<th>Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting &amp; Business</td>
<td>18</td>
<td>English</td>
<td>106</td>
</tr>
<tr>
<td>Aerospace Engineering</td>
<td>4</td>
<td>Chinese</td>
<td>11</td>
</tr>
<tr>
<td>Agriculture</td>
<td>6</td>
<td>Malay</td>
<td>3</td>
</tr>
<tr>
<td>Animal Science</td>
<td>8</td>
<td>Japanese</td>
<td>1</td>
</tr>
<tr>
<td>Apparel Merchandising and Design</td>
<td>2</td>
<td>Hindi</td>
<td>1</td>
</tr>
<tr>
<td>Biology</td>
<td>2</td>
<td>Urdu</td>
<td>1</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>4</td>
<td>Finnish</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3</td>
<td>Arabic</td>
<td>2</td>
</tr>
<tr>
<td>Child, Adult, and Family Services</td>
<td>3</td>
<td>Spanish</td>
<td>1</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>7</td>
<td>Portugese</td>
<td>1</td>
</tr>
<tr>
<td>Communication Studies</td>
<td>1</td>
<td>Others</td>
<td>11</td>
</tr>
<tr>
<td>Computer Engineering</td>
<td>5</td>
<td>Total</td>
<td>139</td>
</tr>
<tr>
<td>Criminology</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dietetics</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary Education</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Event Management</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphic Design</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History &amp; Education</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial technology</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinesiology</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material Engineering</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microbiology</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutritional Science</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Relations</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary Education History</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software Engineering</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistics</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Option</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>139</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
All the students in the eight sections of the instructor participants were invited to participate in the study. They were introduced to the project and given the IRB-approved consent form which describes the project and the tasks that are needed for data collection (see Appendix M). The first group of tasks involves submitting their first drafts and the revised drafts, and taking surveys and tests before and after completing the materials on source use. The second group of tasks includes doing interviews and stimulated recalls about their learning experience with the materials. They were then given the option to choose the tasks that they were interested in participating in. It should be acknowledged that the students in the two sections taught by the researcher were not invited for interviews and stimulated recalls because they might feel pressure to participate, and not be comfortable with talking about their learning experiences. The number of student participants also met the quota of participants required for each instrument of data collection. For example, a total of four interviews were conducted with four individual students from all these participating sections. More descriptions of the data collection instruments for the study are presented in the next section.

4.3. Instruments

This part provides the development of all the data collection instruments used in this study to investigate the four qualities of the teaching materials on source use. Each presentation of an instrument also includes a description of characteristics of expected responses or collected data for that instrument.

4.3.1. Pre- & Post-tests

To measure changes of students’ knowledge and competence in incorporating sources in documented essays after completing the teaching materials, a pre-test and a post-test on source use were used (see Appendix E and Appendix F). The definition of the construct of source use to
be measured in these tests was based on the literature review on source use and the corpus-based linguistic analysis on source use, which also informed the theoretical grounds of the materials development of the materials introduced in Chapter 2 and 3. Accordingly, it is defined as the ability to use multiple forms of citation and different rhetorical functions appropriately to achieve the required purpose of a source-based essay, which is either to present multiple views on a specific topic or to support an argument on an issue of interest effectively.

As these tests were also used as teaching materials in the lesson on source use in the documented essay genre that students were going to write, the development of these two tests followed Jamieson’s (2011) instruction on how to develop classroom tests for language learning. Accordingly, the tests are considered as criterion-referenced tests because their measures depend upon an absolute standard of quality” instead of a “relative standard” (Jamieson, 2011, p. 2). The criterion of this test type is also “a construct that is defined according to a reasonable set of characteristics that reflect valued performance” (Jamieson, 2011, p. 4). The development of these tests used both the content and objectives of the experimental learning materials and the requirements of the writing assignment as criteria of the test; therefore, the test scores were considered as the results of comparing student performances with respect to those specified standards, but not to the performance of other test-takers.

Following Jamieson’s (2011) procedure and suggestions, a number of factors including time, task format, and input were considered in order to make these tests effective and valid for the aforementioned purposes. All the materials for the tests were taken from the English 250 students’ collected essays. Both tests were created on Moodle so that instructors could deliver them either as an in-class activity or homework in a more flexible manner. They also had the
same format and followed the same test specification in order to be equivalent to each other (see Appendix E for the pre-test and Appendix F for the post-test).

Each test consists of two tasks with the same number of seven question items in total and lasts for 30 minutes. Each correct answer gets one point; the maximum score of each test is seven points. The first task is purposed to test the learners’ ability to use multiple forms of citations to integrate external sources in one’s writings, and the second one is to test their ability to identify rhetorical functions of citations in academic writing. The first task has one question which asks students to provide three different ways to integrate a provided original text into an incomplete paragraph. In the second task, they are required to read each of the six excerpts from students’ documented essays, and decide the rhetorical function of the italicized citing sentence in that excerpt. A drop-list of citation functions is also provided for students to choose from.

The tests were reviewed by experienced English 250 instructors before piloting to a small group of students in the target population. The piloting session of the tests on a group of 20 students in the same course went smoothly. Both instructors and students found the tests relevant and helpful to understanding the teaching materials better; therefore, no significant change was made to the two tests after this piloting period.

4.3.2. Questionnaires

To collect participants’ perceptions of their experiences with the teaching materials from the large group of participants, I decided to use questionnaires to elicit a range of data including learners’ awareness of their citation use, their attitudes to the designed DDL learning tasks, and teachers’ input about their teaching practice of source use for college student writers in the documented essay genre. The selection of the questionnaire instrument also followed the guidance on using questionnaire surveys in second language learning research (Gass & Mackey,
The questionnaire for instructors in the study was a pre-training questionnaire (see Appendix G). And the questionnaires for students in this study included a pre-training and post-training questionnaire for students before and after completing the teaching materials that I developed (see Appendix H and Appendix I). These questionnaire surveys were built on the Qualtrics survey software and consisted of both questions with selected items (e.g., Yes/No, 6-point Likert-scale) and open-ended questions. The development of the questionnaires followed the instructions given by Gass and Mackey (2005) and Dörnyei and Taguchi (2010). For example, the 6-point Likert-scale, an even number without the middle option, was chosen based on the suggestion by Dörnyei and Taguchi (2010).

The questionnaire development was an iterative process (Dörnyei & Taguchi, 2010). Two experienced instructors of English 250 were consulted during the construction of the questionnaires. After that, these two instructors and three other colleagues, who were a post-doc and doctoral students in Applied Linguistics and Technology, were recruited to take the questionnaires and give suggestions on improving them. Finally, all three questionnaires were piloted on a small sample of the target population to collect feedback and data for item analyses for fine-tuning the final questionnaires before fielding the surveys. The trial sample size for the student’s questionnaires was twenty-two. As a result, several changes to the content and types of questions in the post-training questionnaire were done because a lot of open-ended responses by the students were repetitive. Consequently, these open-ended responses were used to construct a multiple-choice question. For example, the original open-ended question about characteristics of the materials that helped students to learn the feature of source was finally converted into a multiple-choice question which offers a number of shared characteristics based on the responses
in the piloting session. These final questionnaires were also reviewed by another two doctoral students in Applied and Linguistics before their official use in the data collection.

Each questionnaire was designed to take a respondent from 15-30 minutes to complete (Dörnyei & Taguchi, 2010). For the students, the links to the questionnaires were provided in their course management site by their instructors. The instructors could choose to deliver them as an in-class activity or as an optional activity outside of class for extra credit. The students were asked to complete the surveys before and after the lab day working with the materials on source use. Further descriptions for each questionnaire are given below.

**Pre-Training questionnaire for instructors**

The primary purpose of the pre-training questionnaire was to gather the instructors’ background information and their opinions about the need for language-focused instruction in academic writing in the course and on source use for documented essays. The secondary purpose of the questionnaire was to collect instructor perceptions of their students’ source use skills in academic writing and the pedagogy for teaching source use skills in the course. The final questionnaire has three parts (see Appendix G). The first part contains five background questions. The second part gives three Likert-scale questions about the need for language-level instruction in English 250 courses. The last part provides six questions about their teaching practice of source use skills.

**Pre-Training questionnaire for students**

The primary purpose of the pre-training questionnaire was to gather the students’ background information and their opinions about the need for language-focused instruction in academic writing in the course. The secondary purpose of the questionnaire was to collect students’ perceptions of their source use in academic writing and their metalinguistic and
pragmatic awareness about using external sources in the documented essay that they were writing for the course. The final questionnaire consists of three main parts (see Appendix H). The first part has five questions about students’ demographic information such as their first language, and their year of study. The second part contains six 6-point Likert-scale questions about students’ evaluation of their source use skill and an open-ended question for their suggestions about how to help college student writers with source use skills. The final part has nine 6-point Likert-scale questions about their metalinguistic and pragmatic awareness about the use of external sources in academic writing and in the documented essay genre.

**Post-Training questionnaire for students**

The post-training questionnaire had two major purposes. The first purpose was the same as that of the pre-training one, which was to collect students’ perceptions and evaluation of their metalinguistic and pragmatic awareness about source in academic writing. The second purpose of this questionnaire was to assess their attitudes and opinions about the designed DDL learning tasks. Therefore, in addition to the same set of questions about demographic background and metalinguistic and pragmatic awareness about source use in the pre-training questionnaire, the final post-training questionnaire contains eleven 6-point Likert-scale questions and five optional open-ended questions about their evaluation of the DDL tasks that they completed (see Appendix I).

The development of these questions was also based on the four evaluative criteria that are presented in Chapter 2. As presented in the previous chapter, the four evaluative criteria were generated from the theory of action framework and were found to be compatible with the four criteria in Chapelle’s (2001) CALL task appropriateness framework. These four criteria are *language learning potential, meaning focus, learner fit, and impact*. Following the suggestion by
Dörnyei and Taguchi (2010), more than one item was written for each criterion. The Likert-scale question for the learning potential criterion of the teaching materials on source use consists of eleven statements or items for a student to respond to. Specifically, the questions about the learning potential criterion of the teaching materials on source use ask students to evaluate how a number of characteristics of the materials (e.g., the provision of examples containing a target feature through concordance lines, input enhancement through highlighted features in the concordances and visuals, and guided induction in the lesson) help them focus on understanding and notice features of source use in the A graded documented essays. These questions also ask the students to give their perceptions of their improvement in source use after finishing the materials.

4.3.3. Stimulated Recall Protocols

The stimulated recall is an introspective data collection strategy which allows for researchers to access participants’ thoughts by presenting them with a stimulus and asking them to reflect on their thought process and areas of focus at the time of the interactions (Gass & Mackey, 2007). This strategy was selected for this study to gather learners’ thought process during their completion of the teaching materials on source use. This introspective measure was also chosen because it would not interrupt learners’ learning experiences with the materials, and they could complete the materials in a regular class with their instructors. Based on Gass and Mackey’s (2007) description of using stimulated recalls for language learning research, a working screen session with the materials was recorded for a learner, and he or she was invited to look at the video recording and report what he or she was thinking. The stimulated recall protocol was also adapted from that by Barkaoui (2014). The final protocol consists of specific instructions for the students, including the purpose of the activity, the procedure of the recall
session, the researcher’s task, and their expected actions. It also ends with a question for checking the students’ confirmation of understanding the protocol. The protocol was consistently used in the same way for all the participants. Moreover, prior to conducting each stimulated recall session in this study, each screen capture recording was previewed, and noteworthy features were observed and documented so the one-on-one meetings would be more time efficient.

4.3.4. Interviews

Structured interviews were used to collect in-depth responses of instructors and students about their teaching and learning experiences with the materials on source use in the study (see Appendix J and Appendix K for interview protocols). The development of the structured interview protocols followed the suggested interview structure given by Lichtman (2010). The open-ended questions were chosen to examine the identified sub-topics while allowing new themes to emerge. Two doctoral students in Applied Linguistics and Technology were recruited to evaluate the instruments. The final interview protocols for instructors and students are both intended to last for 30 to 50 minutes and comprise two major parts. The first part contains five questions about background information. The second part has questions which are intended to collect their perceptions about the experiences with the materials based on the evaluation criteria. For example, on the criterion of the language learning potential of the materials, the first set of questions was created to ask the students to share their perceptions of their improvement in knowledge and awareness about the integration of source after completing the materials. Students were prompted to discuss what characteristics of the materials helped them attain such learning gains. The same set of questions was used for every student participant although further questions might have been implemented to ask each person to elaborate his or her response.
4.3.5. Students’ Drafts of Documented Essays

The students were asked to submit their first and revised drafts of documented essays before and after the lesson on source use so that I could examine any potential changes in their source use quality after the training. The first and revised drafts were collected from those student writers who consented to their use for the study. However, all the essays in the sections taught by the second instructor were excluded because they were written by a group of students rather than individual students, which would make the analyses and interpretations of the scores on the students’ drafts inconsistent.

4.3.6. Computer-based Databases

The computer-based databases consisted of the Moodle-based activity logs and the users’ records in the web-based corpus tool. The logs and the users’ records were collected based on the students’ input of their Net ID information required to log into the learning management system and the tool. For each type of computer-based databases, certain information was collected for analysis in this study.

Three sources of data from the Moodle-based activity logs were retrieved for each student participant of the study who agreed to share their Moodle-based data. The first source of data was each individual performance on the Moodle-based lesson on source use. Specifically, the information on each performance included the total duration of time spent on the Moodle-based lesson, and the student’s actual response to each question. The second source of data retrieved from the Moodle-based database was each student’s performance on the journal on source use which was assigned as homework after the lesson. Each Moodle-based performance on the journal also consisted of the total amount of time taken, and the actual written response by the student. As described above, both pre- and post-tests on source use used in this study were
based on the Moodle; as a result, each individual performance on each of the tests including the total of time spent on a test, and the actual response to each question in a test were gathered and examined for analysis.

Two important sources of data were also collected from the users’ records in the web-based corpus tool. The first source was the total amount of time that the corpus tool was active in the users’ computer. The second source was the types and numbers of searches that each user took during the in-class lesson and outside of the class. These sources of data were then analyzed to supplement the student reported results on their working experiences with the materials in the interpretation phase.

4.4. Data Collection

The purpose of this section is to report how the data sources were collected to answer the research questions in the study. The section first describes the complete implementation procedure of the data collection. Then, a brief summary of the collected data for each instrument is presented.

4.4.1. Procedure

The data collection procedure of the study is presented in Figure 17 below. As shown in the figure, there were three major stages in the procedure. The first stage involved the preparation for the experimental implementation of the materials in the classes. The second stage was the experimental implementation of the materials in the classrooms. And the final stage consisted of follow-up activities after the experimental implementation of the materials on source use.
Figure 17. Data Collection Procedure

In the first stage, the instructors of English 250 were invited to take the pre-training questionnaire survey. The last question of the survey also asked them if they were interested in
learning about the materials on source use that I developed. Then, the instructors of Fall 2016 were also emailed an invitation to participate in the study by implementing the materials in their classes; they were also encouraged to invite other instructors who might be interested in participating in the study. Consequently, a total of four instructors including the researcher agreed to implement the materials in their classes, making a total of eight participating sections. A short meeting between the researcher and each individual instructor was also conducted to plan the data collection procedure in each class.

Each instructor was then provided with specific instructions for their students to access the project’s Moodle site which contains all the materials for the project including the tests, the links to the surveys, and the lesson. All the students in the eight participating sections were introduced to the project and asked to submit their first drafts of the assignment in their course management sites before the class when the materials were implemented. They were also instructed to take the pre-test on source use, and complete the pre-questionnaire survey by their instructors before taking the lesson on source use.

In the second stage, the students did the lesson under the instructor’s guidance in the classrooms. Each instructor was instructed to use a short PowerPoint slide presentation which briefly introduces the purpose of the lesson and the components of the lesson. Upon availability, the researcher was also present in these classes to support the instructors, and help the student participants with recording their screens for stimulated recalls and interviews.

After taking the lesson, the students were asked to complete the journal on source use as homework. They were also given links to the post-test and the post-training survey on the materials that they completed. The instructors could choose to assign these activities as either required or optional work for the students, and conduct them either in or outside of class.
However, the lesson itself was considered as a part of required coursework for all the sections. For the students and instructors who agreed to do either an interview or a stimulated recall, they were contacted through an email to schedule a meeting with me in my office after the in-class implementation of the materials. The students of these sections were also required to submit the revised drafts in their course sites after the lesson.

Due to variations across instructional contexts of these participating sections as shown in the previous part, each instructor had a different schedule to implement the materials in class. Table 11 below summarizes the actual implementation and procedure of data collection in each of these eight participating sections.
Table 11. *Summary of Data Collection*

<table>
<thead>
<tr>
<th>Section</th>
<th>Researcher Attended</th>
<th>Total Class Time</th>
<th>Use of the PPT Slide</th>
<th>Pre-test</th>
<th>Pre-training survey</th>
<th>Lesson</th>
<th>Post-test</th>
<th>Post-training survey</th>
<th>Journals</th>
<th>Interviews &amp; Stimulated Recalls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td>50 minutes</td>
<td>X</td>
<td>Outside of class &amp; Optional</td>
<td>Outside of class &amp; Optional</td>
<td>In-class &amp; Optional</td>
<td>Outside of class &amp; Optional</td>
<td>Outside of class &amp; Optional</td>
<td>Outside of class &amp; Optional (for extra credits)</td>
<td>Within a week after the lesson implementation</td>
</tr>
<tr>
<td>2</td>
<td>X</td>
<td>40 minutes</td>
<td>-</td>
<td>In-class &amp; Optional</td>
<td>In-class &amp; Optional</td>
<td>In-class &amp; Optional</td>
<td>Outside of class &amp; Optional</td>
<td>Outside of class &amp; Optional</td>
<td>Outside of class &amp; Optional (for extra credits)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td>50 minutes</td>
<td>X</td>
<td>In-class &amp; Optional</td>
<td>In-class &amp; Optional</td>
<td>In-class &amp; Required</td>
<td>Outside of class &amp; Optional</td>
<td>Outside of class &amp; Optional</td>
<td>Outside of class &amp; Optional (for extra credits)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>X (as instructor)</td>
<td>80 minutes</td>
<td>X</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>Outside of class &amp; Required</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>X (as instructor)</td>
<td>80 minutes</td>
<td>X</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>Outside of class &amp; Required</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td>80 minutes</td>
<td>X</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>Outside of class &amp; Required</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>80 minutes</td>
<td>X</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>Outside of class &amp; Required</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>-</td>
<td>120 minutes</td>
<td>X</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td>In-class &amp; Required</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* “X” means ‘present’; “-” means ‘absent’
4.4.2. Summary of Data Sources

A matrix of data sources which were collected from the instruments described in the previous sections to address the research questions in this study are presented in Table 12. As can be seen in the table, both sources of qualitative and quantitative data were collected to triangulate their results to examine each quality of the materials.

For the *language learning potential* quality of the materials, both qualitative and quantitative sources of data were collected to examine if the intended characteristics of the materials on source use led to any student’s learning gains in terms of knowledge, awareness, and skills on source use. The first part of the table displays the sources of quantitative data for this criterion. They included: (1) students’ responses to the *Likert-scale* questions on their perceptions of learning gains in citation use and language learning skills in the post-training questionnaire survey; (2) their responses to the *Likert-scale* questions on the metalinguistic and pragmatic awareness about source use in the pre- and post-training questionnaire surveys; (3) the source use quality scores on their first and final drafts of documented essays; (4) their performance on the pre- and post-tests on source use; (5) their computer-based logs on the Moodle-based lesson and the web-based corpus tool. The qualitative data for this criterion contained: (1) the students’ responses to the interview questions about their perceptions of learning gains and their working processes with the materials; (2) students’ reports of their working processes in stimulated recalls; (3) their written answers to the open-ended questions in the lesson on source use; (4) their written answers to the prompts in the journal on source use.
Table 12. Summary of Data Sources for the Four Qualities of the Materials on Source Use

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Quantitative Data</th>
<th>Qualitative Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Questionnaires (Likert-scale responses)</td>
<td>Writing Drafts</td>
</tr>
<tr>
<td>Survey for Instructor</td>
<td>Pre- &amp; Post-training Survey for Students</td>
<td>Pre- &amp; Post-training Drafts</td>
</tr>
</tbody>
</table>

**Language learning potential:**

1. What evidence suggests that the components and characteristics of the materials (input flood coupled with input enhancement, guided induction, and the target texts by college students) lead to the students’ hypothesized learning processes (i.e., noticing of and focusing on features of source use)?

![X](X) ![X](X) ![X](X) ![X](X)

2. What evidence suggests that the components and hypothesized learning processes lead to their learning gains about source use (knowledge, metalinguistic and pragmatic awareness, and revision strategies)?

![X](X) ![X](X) ![X](X) ![X](X) ![X](X)

**Meaning focus:**

3. What evidence suggests that the students focus on understanding the meaning of source use features in documented essays when working with the materials?

![X](X)

4. What evidence suggests that the components and

![X](X) ![X](X) ![X](X)
Table 12 continued

<table>
<thead>
<tr>
<th>Characteristics of the materials (input flood coupled with input enhancement, guided induction, and the target texts by college students) lead to the students’ focus on the meaning of source use features in documented essays?</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learner fit:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. What evidence suggests that the components and characteristics of the materials are at the appropriate level of difficulty for the students?</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>6. What evidence suggests that the components and characteristics of the materials are engaging and useful to the students?</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7. What evidence suggests that the components and characteristics of the materials are useful to the students?</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Impact:**

<table>
<thead>
<tr>
<th>What evidence suggests that the learners have a positive and beneficial experience with the components and characteristics of the materials?</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>What evidence suggests that the instructors have a positive and beneficial teaching experience with the components and characteristics of the materials?</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

For the *meaning focus* criterion of the materials on source use, two types of data were also collected from multiple sources of data. The quantitative data included: (1) students’ responses to the *Likert-scale* questions on their perceptions about their focus on understanding the feature of source use in the target genre; (2) their responses to the *Likert-scale* questions about how the characteristics of the materials helped them focus on understanding the features of source use; (3) their actual time spent on each question of the lesson, the journal, and the web-based corpus tool; and (4) the kinds of searches in the web-based corpus tool. The qualitative data consisted of: (1) students’ responses to the interview questions about their focusing on meaning while working with the materials, (2) their reported recalls of working processes with the materials; and (3) their responses to the open-ended questions in the lesson and the journal.

The third quality of the materials on source use is *learner fit*. To address the two research questions for this aspect, eight sources of data were also collected. The quantitative data included: (1) students’ responses to the *Likert-scale* questions on their perceptions about the appropriateness of the materials including the difficulty level, the usefulness; (2) their actual performance on the tests, the lesson, and the journal as homework; and (3) their records of use in the web-based corpus tool. The qualitative data contained: (1) responses to the interview questions about the appropriateness of the materials by both the instructors and the students; and (2) the students’ actual responses to the open-ended questions in the lesson and the journal.

To answer the two questions about the *impact* quality of the materials on source use, four major sources of data were gathered. The quantitative data included students’ responses to the *Likert-scale* questions on their perceptions about their satisfaction with their learning experience with the materials, and the impact of the learning experience on their learning of source use and other strategies in academic writing. In addition, both the students’ and the instructors’ responses
to the Likert-scale questions about the needs for explicit language-focused instruction on source use were also gathered to examine this quality of the experimental teaching materials. The qualitative data came from two major sources of data including responses to the interview questions about the impact of the materials by both the instructors and the students who used the materials in their classes. Further descriptions of the collected data for each source are provided below.

4.4.2.1. Pre- and Post-Tests

In the data collection stage, each instructor had the right to decide how to deliver the tests. As summarized in Table 11, most of the instructors asked their students to complete these two tests as homework instead of an in-class activity due to the time constraint. Moreover, these instructors explained that they did not require their students to complete those tests, but gave them extra credit to complete them outside of class because of their current heavy course load. Consequently, a total of 68 students completed both the pre-and post-tests on source use. This number satisfied the proposed sample size so that I could conduct useful test analyses including examining the reliability of the tests (Bachman, 2004; Carr, 2011; Stoynoff & Chapelle, 2005), and conducting other statistical tests on any changes in their test scores on source use after the training (Carr, 2011; Collins, 2010). Specifically, the criterion-referenced test score dependability Φ (phi), which is defined as “scoring consistency or reliability for a criterion-referenced test” (Carr, 2011, p. 116), was chosen to examine the reliability of the pre- and post-tests on source use in this study.

Because the scores in the two tests were dichotomous data, Brown’s (1990) formula presented in Carr (2011, p. 117) was used to calculate the score dependability indices of the two tests in this study. The formula is:
\[ \varphi = \frac{ns^2(\alpha)}{n-1} + \frac{M(1-M)-S^2}{k-1} \]

where \( n \) = the number of people who took the test

\( s^2 \) = the variance (using the population formula) of test scores in proportion-correct metric. It is equal to the raw score variance divided by the squared number of items on the test (\( k^2 \)).

\( \alpha \) = the reliability of the test, using Cronbach’s alpha

\( M \) = the mean of the proportion scores

\( k \) = the number of items on the test

4.4.2.2. Questionnaire Surveys

As described above, the questionnaire survey for instructors had been sent to the lists of instructors of the course in Spring 2016 and Fall 2016 before the Fall 2016 semester started. As a result, out of 64 instructors who were sent an invitation email to take the survey, only twenty-four of them completed the survey.

For the student surveys, all the students in the classes whose instructors agreed to use the materials on source use were provided with the links to the surveys on their course management sites by their instructors. Most of the instructors in the study asked the students to complete the pre-training questionnaire as an in-class activity, but assigned the post-training questionnaire as an optional activity outside of class. Although there were about 139 respondents to the pre-training questionnaire survey, there were only 71 respondents to the post-training survey. However, only 68 of them completed the metalinguistic and pragmatic awareness questionnaire in both the pre-training survey and the post-training survey. Fortunately, the numbers of student
and instructor participants in both surveys satisfied the proposed sample size so that I could conduct meaningful statistical analyses for each question item.

4.4.2.3. Stimulated Recalls

All the students in the participating sections whose instructors agreed to use the materials were invited to do stimulated recalls. All of the students who consented to do stimulated recalls were instructed to record their computer screens by using *QuickTime Player* Version 7 for Mac when working with the materials, and upload the screen recordings into a shared *Cybox*. The first four students who responded to my invitation email to schedule a meeting for a stimulated recall were selected for data collection; thus, four students completed these. Table 13 summarizes the information of these stimulated recall sessions.

<table>
<thead>
<tr>
<th>Student Pseudonyms</th>
<th>Instructor ID</th>
<th>Background Information</th>
<th>Working Length (in minutes)</th>
<th>Recall Length (in minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casey</td>
<td>1</td>
<td>Civil Engineering</td>
<td>31</td>
<td>35</td>
</tr>
<tr>
<td>Betty</td>
<td>1</td>
<td>Pre-Business</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>Yi</td>
<td>1</td>
<td>Civil Engineering</td>
<td>36</td>
<td>40</td>
</tr>
<tr>
<td>Dan</td>
<td>4</td>
<td>Mechanical Engineering</td>
<td>23</td>
<td>31</td>
</tr>
</tbody>
</table>

Prior to conducting each stimulated recall session, each screen capture recording was also previewed, and noteworthy features were observed and documented so the one-on-one meetings would be more time efficient. In each stimulated recall session, each student was given the same instructions on how it would be conducted. He or she was then asked to watch the screen-capture recording as a stimulus for recalling their thinking along what was shown in the recording. He or
she was also prompted by the researcher to elicit more data on the thought process during the stimulated recall session. Each stimulated recall session was screen-captured with the built-in micro by QuickTime Player Version 7 for Mac. All of these recordings were then converted into audio files for later transcription.

**4.4.2.4. Interviews**

All the instructors who implemented the materials in their classes were invited to be interviewed within a week of using the materials in their classes. Only two instructors agreed to be interviewed. Table 14 summarizes the interview sessions with the two instructors in this study.

Table 14. *Summary of Interviews with Instructors*

<table>
<thead>
<tr>
<th>Instructor ID</th>
<th>Instructional Context ID</th>
<th>Class Duration</th>
<th>Interview Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>50 minutes</td>
<td>31 minutes</td>
</tr>
<tr>
<td>4</td>
<td>6,7</td>
<td>80 minutes</td>
<td>49 minutes</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>120 minutes</td>
<td></td>
</tr>
</tbody>
</table>

All students in the participating classes whose instructors implemented the materials on source use were invited for interview. All students who signed up for interview through the consent forms were instructed to record their working screens in the class where the materials were used, and emailed for scheduling a meeting with me within one week. The first four students who responded to my invitation email were selected for interview. Table 15 summarizes the information of these interview sessions with the students.

Table 15. *Summary of Interviews with Students*

<table>
<thead>
<tr>
<th>Student ID &amp; Pseudonyms</th>
<th>Instructional Context</th>
<th>Background Information</th>
<th>Interview Length (in minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nancy</td>
<td>1</td>
<td>Civil Engineering</td>
<td>40 minutes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>English</td>
</tr>
<tr>
<td>2. Ketty</td>
<td>1</td>
<td>Pre-Business</td>
<td>32 minutes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>English</td>
</tr>
</tbody>
</table>
Table 15 continued

<table>
<thead>
<tr>
<th>Instructor ID</th>
<th>Total Submissions</th>
<th>Papers Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>19</td>
</tr>
<tr>
<td>8</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>41</td>
</tr>
</tbody>
</table>

All the interviews were scheduled at the convenient time for both the researcher and the participants. All were audio-taped by *QuickTime Player* Version 7 for Mac, and then transcribed and coded for data analyses.

### 4.4.2.5. Students’ Drafts of Documented Essays

The procedure for grading source use quality of the students’ writing drafts contained two main stages: screening papers before grading, and grading essays. After being collected, all the collected essays were screened before being graded. The screening process consisted of two basic steps. First, the papers were checked to see if the students submitted the correct documents. Several papers were mistakenly submitted as documented essays. Secondly, they were all examined to see if they were all complete or partially complete, especially for the first drafts. For example, many first drafts only had a bibliography of the sources used in the essay, which would make it insufficient for grading source use. Table 16 summarizes the collection of documented essays written by the students in the study.

**Table 16. Collection of Students’ Drafts of Documented Essays**

<table>
<thead>
<tr>
<th>Instructor ID</th>
<th>Section ID</th>
<th>Total Submissions</th>
<th>Papers Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>4,5</td>
<td>29</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>6,7</td>
<td>40</td>
<td>19</td>
</tr>
<tr>
<td>8</td>
<td>13</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td></td>
<td>41</td>
</tr>
</tbody>
</table>

As shown in the table, a total of 86 pairs of pre- and post-training essays were collected; however, only 41 pairs of essays were finally selected for analyses. All of the personal
information in each of these essays was then removed. Each of them was also assigned a random ID number and a random code which were also used to rename that file.

A rating scale on source use was developed to grade the source use quality of the collected essays. Because the collected essays were written to address the prompts of the assignment for the course, the essay rating scale replicated the scoring rubric template of the assignment. Moreover, as the source use rating scale was used to grade the source use quality in the essays written after the training, the source use rating scale also reflected the features of source use covered in the materials. As a result, the criteria in the rating scale should be based on the five features of citation (citation density, author integration, textual integration, reporting verbs, and rhetorical functions) which are informed by the corpus-based literature on citation and identified as the foci of the teaching materials on source use.

The rating scale on source use is presented in Table 17. As shown in the table, there are five criteria for evaluating the source use quality in this study. They include frequency, accuracy, diversity of citation forms and its rhetorical functions, and appropriateness of source use in the specific genre that they are writing. The rating scale was also examined by two experienced English 250 teachers for feedback before its official use.

The grading stage of the collected student drafts was implemented with the following steps. Ten instructors of the English 250 course were invited via email to grade the student papers through an email. Six instructors agreed to participate in the rating sessions. Due to time conflicts, two rating sessions were organized. The organization of the rating session followed Carr’s (2011) suggestion about preparing and holding a rating session.

The rating session had two parts. The first part was a training session which lasted for about 30 minutes. The purpose of rater training was to help lead the raters to apply the rating
scale in the same manner, and interpret the descriptors in the same way (Carr, 2011, p. 145). The rater training process began by having the raters review the rating scale. I also explained each of the subscales as we went through each criterion in the rating scale. Finally, the raters were shown examples of essays for each particular score band, and we discussed why that particular response received the score. After an example essay of each level was reviewed, the raters were given two essays to rate on their own followed by more discussion such as what led raters to give the scores that they did. The training also advised the raters not to compare test takers to each other; instead, they should focus on comparing the features in an essay to the descriptors in the rating scale. Due to time constraints, the raters were asked to use the rating scale for grading the source use quality of the essays holistically rather than analytically.
Table 17. *Source Use Rating Scale*

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Excellent (A)</th>
<th>Good (B)</th>
<th>So So (C)</th>
<th>Needs Work (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of source use (frequency)</td>
<td>Good (appropriate, reasonable) amount of using external sources in the paper</td>
<td>Reasonable amount of external source use in the paper</td>
<td>Fair amount of source use in the paper. Excessive or insufficient use of external sources in some places</td>
<td>Excessive or insufficient use of external sources throughout the paper. For example, a writing might rely on only one major source.</td>
</tr>
<tr>
<td>Accuracy of forms of integrating external sources (accuracy)</td>
<td>Accurate citations and forms of integrating external sources</td>
<td>Mostly accurate; there are only several inaccurate citations in the paper. (The students show a moderate level of awareness about citing and incorporating sources, but still need more attention to do them accurately)</td>
<td>There are many inaccurate forms of citations. Inconsistent accuracy in forms of citations. (The students show some awareness about citing and incorporating sources)</td>
<td>Mostly missing or inaccurate forms of citations. (The students show no awareness about citing and incorporating sources)</td>
</tr>
<tr>
<td>Diversity of forms of integrating external sources (diversity)</td>
<td>The student uses diverse forms of incorporating external sources to integrate them smoothly into his/her writing.</td>
<td>The student uses a reasonable number of different ways of incorporating external sources although there are some places that need improvement.</td>
<td>There are several ways of incorporating sources, but the student relies on one particular way most of the time.</td>
<td>The student relies on a limited number of ways of incorporating external sources, making the writing boring.</td>
</tr>
<tr>
<td>Adoption of multiple rhetorical functions of source use (diversity)</td>
<td>The student uses external sources for multiple rhetorical functions or purposes, making the argument stronger.</td>
<td>The student uses external sources for some certain purposes. However, there are some places that external sources are used with no clear reason.</td>
<td>The motivation or purpose of using an external source in the writing is vague. Most of the sources are used simply for their own sake and doesn’t contribute to the argument.</td>
<td>The student fails to use external sources for any specific purpose. No connection is made between the source use and the writing.</td>
</tr>
<tr>
<td>Appropriate choice and use of external sources to address the writing assignment (<em>e.g.</em>, credibility of sources, relevance to the content of the paper, and the overall goal which is either to justify one position or to present multiple viewpoints on a critical issue)</td>
<td>The source use helps achieve the purpose of the paper effectively which is to present multiple perspectives on a controversial issue, or to support a certain position.</td>
<td>Most of the source use help the writer achieve the purpose of the assignment although it could be improved in some places to present these perspectives or support a certain position more effectively.</td>
<td>The source use doesn’t help achieve the purpose of the assignment effectively. The student might focus on one source and pay insufficient attention to others.</td>
<td>The student fails to use external sources to achieve the purpose of the assignment. There is no clear relevance of the sources to the paper.</td>
</tr>
</tbody>
</table>
After the training, each rater was given a set of essays with randomly assigned codes. These essays were mixed randomly so that no one could identify if an essay was a first draft or a revised one. The rater was also instructed to give a letter grade for each essay in one of the corners of the last page of the essay and fold it before grading the next paper. Each paper was graded by at least two raters. After the second rating, I compared the two ratings to see which essays had rating disagreements. All the essays which had rating disagreements were then graded by a third rater. As a result, there were 16 essays that needed a third rater, and no paper that needed a fourth rater. The majority of the rating disagreement came from the decision between C or B levels. The final grade for each essay was decided by the common grade given by at least two raters. All the finalized grades of the rated essays were then entered into an Excel spreadsheet for analysis in the next stage. The next part continues to describe how all these collected sources of data were processed and analyzed to answer the research questions in this study.

4.4.2.6. Computer-based Databases

Two major computer-based logs were retrieved for data analysis. They were the logs of the students’ work on the Moodle-based lesson and the students’ usage on the web-based corpus tool on source use. In all, 104 students agreed to share their working logs with the researcher for data analysis. However, four of them were absent from the classes where the intervention took place; as a result, a total of 100 logs for each computer-based database were retrieved and prepared for data analysis. The Moodle-based lesson logs also included the students’ responses to the open-ended questions in the lesson and the homework journal on source use.
4.5. Data Analysis

This section describes how these sources of data were processed and analyzed to answer the research questions about the four qualities of the materials on source use. After a brief introduction to the general procedure of preparing the data for analyses, I will explain the analyses used to address each of the questions.

4.5.1. Preparing Data for Analysis

For the quantitative data sources, all the responses to the questionnaire surveys were processed before analyses following the procedure described by Dörnyei and Taguchi (2010) which involves coding questionnaire data, inputting data, and pre-processing data. All the responses to the 6-point Likert-scale questions in the questionnaires were directly exported from the Qualtrics survey platform for final checking.

Next, all the students’ Moodle-based logs, including their performances on the pre- and post-tests on source use, the lesson, the journal on source use, and their submitted written drafts before and after completing the materials were retrieved and de-identified. The first quantitative data from these sources included (1) scores of the tests ranging from 0 to 7 corresponding to equally weighted seven questions in the tests; and (2) letter grades on source use quality of students’ drafts ranging from D (Needs work) to A (Excellent), which were then converted into numerical data on a corresponding scale of 1 to 4. The second set of quantitative data from these sources included the time spent on the tests and the lesson which were measured in seconds. The time range was from 0 to 30 minutes for the test, and from 0 to 50 minutes for the lesson. The qualitative data from these sources consisted of (1) the students’ actual responses to the two
open-ended questions in the lesson; and (2) their responses to the prompts in the journal. These were also gathered and imported into *Nvivo* version 11 for coding.

Moreover, for each of the individual records of use in the web-based corpus tool, two pieces of quantitative data were retrieved. The first was the total number for each type of searches out of the sixteen types provided in the menu of the tool, which could be any number equal or greater than 0. The second was the actual time spent on the tool which could range from 0 to 50 minutes for each person. Both data sources were collected from the admin page and downloaded as an *Excel* file for each user. All of these data were then stored in individual folders in a password-protected *Cybox* account. All the instructor and student participants were anonymized by being assigned pseudonyms before data analysis.

Finally, the two sources of qualitative data, including all the recordings of the interviews and stimulated recall sessions, were transcribed by a professional transcription service, *Rev*; all the transcriptions were then checked by the researcher and sent to the participants for member check before being imported into the *Nvivo* version 11 software.

### 4.5.2. Conducting Data Analysis

Corresponding to the two major types of data as presented above, two different types of data analyses were conducted in this study. A general approach to each analysis type is first presented before a detailed presentation of data analysis for each research question of the study.

For quantitative data, because the goal of the study was to seek an understanding of the learners’ learning experiences with the materials in the specific instructional context, descriptive analyses, defined as “techniques that are used to organize and summarize data for the purpose of enhancing understanding,” were chosen to be used in this study (Onwuegbuzie & Combs, 2010,
These descriptive analyses were conducted for all the student and instructor participants. Major descriptive results including mean, mode, and standard deviation were reported for each source of quantitative data. Moreover, the characteristics of quantitative data such as test scores on source use were further examined to check if a $t$-test would be appropriate to see if there was any significant change in knowledge about source use after completing the lesson.

As presented in the previous section, there were two groups of qualitative data. The first group contained the students’ written responses to the prompts of the lesson and the journal. The second group was comprised of the responses from interviews and stimulated recalls. The first group was used to provide artifacts to illustrate how the students performed on the tasks to learn the features of source use; as a result, they were examined in terms of how well they represented the students’ perceptions of their learning in the interviews and stimulated recalls.

The second group of qualitative data was used to triangulate the results from other quantitative measures by providing insight into the users’ perceptions of the four qualities of the materials and their working processes while doing the lesson. Because the qualitative data in this study were collected from different classes by different instructors with several instructional background variations, the analyses selected for this qualitative data group were within-case analyses (Onwuegbuzie & Combs, 2010) as the analyses were bounded within a single case, which is the class in this study. In other words, qualitative data from each class were analyzed individually. Each of the within-case qualitative analyses in this study also followed the common analysis process in qualitative research which consists of three stages (Lichtman, 2010; Onwuegbuzie & Combs, 2010). The subsections below present each of the stages in more detail.
**Stage 1: Coding**

The first stage, also called the coding stage, focused on examining data, generating, and revisiting initial coding. Because many experts have indicated the potential influence of multiple factors on the coding process, such as the researcher’s approaches to qualitative inquiry, their subjectivities, and personalities (Litchman, 2010; Saldaña, 2009), a theoretical framework called Systemic Functional Linguistics (SFL) was selected for the coding process of the qualitative data sources.

As described in Chapter 2, two systems in SFL, the ideational metafunction and the appraisal system, were chosen to code the qualitative data to examine the four qualities of the teaching materials on source use. Each of the systems was also used to address each of the qualities of the teaching materials appropriately and effectively. Specifically, the ideational analysis was found to be suitable for the purpose of examining the first two qualities of the materials on source use (i.e., *language learning potential* and *meaning focus*). The reason is that these two qualities concern how the characteristics of the materials helped the learners with noticing and focusing on features of source use, and the ideational function allows us to examine how a person uses language resources to represent his or her learning experience, including the thought process. For the other two qualities (i.e., *learner fit* and *impact*), the appraisal system was found helpful to examine the learners’ evaluation of the materials because it deals with how a person uses language resources to convey his or her evaluation, including attitudes, emotions, feelings, or opinions and the user’s engagement in that evaluation. Therefore, using this system to evaluate the last two qualities would provide relevant analytic concepts to examine the
learners’ evaluative expression of their learning experiences with the materials meaningfully and insightfully. Further descriptions of how each analysis was conducted are provided below.

First, an ideational analysis assists in identifying multiple types of working processes and learning behaviors as well as characteristics of the instructional context involved in a learner’s learning experience. For example, Halliday’s (1994) work on processes helped examine which types of processes were involved in the learners’ experiences with the designed materials. The selection of which verb types to examine each quality of the teaching materials is also supported by Mohan’s (1986, 2011) Knowledge Framework. In the framework, Halliday’s three main types of processes help construct different pairs of knowledge structures which are classified into three theory-practice relations. Accordingly, sequences and principles are constructed using processes of doing (e.g., material), and choice and values are constructed using processes of sensing (e.g., mental). Classification and description are formed by relational processes (e.g., “be” and “have”). As Mohan (1986, 2011) points out, the doing and sensing processes help the learners construct reflections about their learning, and the relational processes assist in constructing their conceptualization and identification of things in their learning. Therefore, the material (doing) and mental verbs (sensing) were chosen to examine knowledge construction and thinking processes involved in the learning experiences with the materials. Neighboring circumstances were also examined to further help identify the features of the designed materials that were related to the learners’ processes in their learning experiences with the materials. Moreover, to investigate which characteristics of the materials led to the learners’ intended learning processes (i.e., noticing and focusing), relational verbs were selected to help identify those characteristics as described and classified in the students’ interview responses.
In terms of the interpersonal function, the Appraisal framework as described in Martin and White (2005), which covers three systems of evaluation, engagement, and graduation, allowed for an examination of the perceptions of the participants regarding the effectiveness of the designed materials. Specifically, the analysis based on this framework helped answer not only whether the participants had a positive evaluation on their experiences working with the materials, but also how positive it was, and especially how committed they were to their evaluation.

The coding stage of these two systems consists of two major steps (1) developing the coding scheme for each system, and (2) coding data for the ideational and the appraisal analyses. The following first presents the coding schemes and the approach for the coding. Then, a brief description about the implementation of the coding is provided.

The process of coding citations for their rhetorical functions in this study followed the suggestions by a number of researchers including Derewianka (1990) and Halliday (1994), and the approach used in Huffman’s (2015) CALL study. As a result, a coding scheme for each system was created and used to serve the purpose of the study effectively. The coding scheme for each system was developed based on the review of relevant resources (Derewianka, 1990; Halliday, 1994; Huffman, 2015; Martin & Rose, 2003; Martin & White, 2005).

The coding scheme for the ideational system was based on the works by Halliday (1994) and instructional materials by Derewianka (1990). To address the relevant research goal of this study, which is to examine working processes involved in the learners’ learning experiences with the materials, the coding scheme specifies six types of processes with their associated language resources as the central part.
The development of the coding scheme for the appraisal system was informed by the coding scheme created by Huffman (2015) and the most complete works on the appraisal system by Martin and Rose (2003) and Martin and White (2005). Because the study was interested in exploring the learners’ perceptions of the materials, the appraisal coding scheme consists of three aspects: the attitude, the engagement of the attitude, and the graduation of attitude and engagement. A brief summary of the framework for the ideational and appraisal analyses in this study is presented in Figure 18 below. The coding schemes for the two analyses were then reviewed several times, and were also used to code a small portion of qualitative data before official use for coding. Two coders were recruited to code a portion of the data for inter-coder reliability analyses. Further descriptions of the coding procedure are provided below.

A specific procedure for coding language resources in terms of the ideational and the appraisal systems was defined for each analysis. Each piece of qualitative data was set up with brief contextual information, for example, the accompanying interview question. A coder was instructed to read the response as a whole before coding. The basic grammatical unit of analysis for these two systems is a main or independent clause which is defined as having a complete subject-verb syntactic structure and being able to stand alone by itself. In other words, all the subordinate clauses or incomplete clauses were not considered for coding these two functions (e.g., the things that we do in English, or clauses starting with subordinators such as if, when), but they were still kept to help generate themes in a later stage.

For the ideational analysis, all the main verbs in any independent clause were coded for types of processes (see Table 2 and Figure 18). In other words, for each main clause, the coder
had to identify the verb of the main clause and classify it into one of the six processes. Its associated participant and circumstance were also identified for the theming stage.

Figure 18. The Framework for Coding the Ideational Function and the Appraisal System

Following a similar procedure, each main clause in a transcript was examined for any language resources that express attitude, engagement, and graduation (see Figure 18). For each detected attitude instance, the coder had to make the following decisions: (1) the type of attitude (appreciation or affect); (2) polarity of the detected attitude instance, for example, whether it expresses a positive or a negative orientation; (3) the graduation or strength level of the coded attitude instance; (4) the type of engagement towards the detected attitude instance; and (5) the
strength of the engagement. Any detected engagement resource was coded in terms of direction of engagement (i.e., whether it invites or shuts down alternative perspectives) and graduation (i.e., the level of commitment towards the evaluation or attitude). There were also three strength levels in graduation resources for both attitude and engagement aspects which are low, mid, and high. Based on the instructions by Derewianka (1990) and Halliday (1994), an important caution was also highlighted for coders in both coding schemes. Several mental verbs in several common expressions in oral speech such as I think, I suppose, I guess, I believe do not express ‘mental processes’ but probability. The verbs in these expressions were thus not coded for the ideational function. Coders were instructed to check whether or not a verb expresses a mental process by adding a tag question (Derewianka, 1990).

To ensure the reliability and validity of the findings of the functional analyses, a second coder was recruited for each type of analyses. The two coders were native speakers of English. One was a doctoral student in Rhetoric and Professional Communication, and the other held a Master’s degree in Applied Linguistics and Technology. Ten percent of the coded instances were selected for each analysis type (Ortega, 2000). Thus, as the total of coded main clauses in my ideational analysis was 830 from eight sources (four interviews with students, four stimulated recalls), 83 main clauses were randomly retrieved from the collection of these sources for the second coder. Similarly, because the total of coded clauses in my appraisal analysis was 503 from ten sources (four interviews with students, four stimulated recalls, two interviews with instructors), 51 main clauses were randomly retrieved from the collection of these sources for the second coder of each analysis. As described above, all these clauses were also provided with some contextual information to help the second coders better understand the texts.
The coders received a training session that lasted one hour and a half, and then each coder coded the prepared texts independently. The coding results for the two texts were then entered into one column in an Excel file which also contained the researcher’s corresponding results. The Excel file was set up to compare the two coding results for running inter-coder reliability analyses. Each inter-coder reliability analysis was also implemented for each category in the SFL-based coding framework. Specifically, one inter-coder reliability analysis was conducted for the coding of processes. Five individual inter-coder reliability analyses were carried out for types of attitude, polarity of attitude, graduation of attitude, engagement of attitude, and graduation of engagement in respectively.

For this study, Krippendorff’s alpha α was chosen to assess inter-coder reliability in addition to the simple coefficient agreement index, which is simply a measure of the percentage of exact and adjacent agreements (Hayes & Krippendorff, 2007). Krippendorff’s alpha (α) is considered to be the most reliable inter-coder reliability index because its equation measures observed and expected disagreement (Lombard, Snyder-Duch, & Bracken, 2002). An appropriate Krippendorff’s alpha analysis was also chosen for each type of data. For example, the codes for the categories in processes, types of polarity, attitude, and engagement were considered to be nominal data, and the three levels in graduation were considered discrete points on an ordinal scale from 1 to 3. As a result, the nominal α analysis was needed for the inter-coder reliability analyses in types of processes, polarity, attitude, and of engagement. The ordinal α analysis was chosen for the inter-coder reliability analyses for graduation in attitude and engagement.

Both coefficients for percent agreement and the Krippendorff’s alpha range between 0 and 1. For percent agreement, “coefficients of 0.90 or greater are nearly always acceptable, 0.80
or greater is acceptable in most situations, and 0.70 may be appropriate in some exploratory studies for some indices” (Neuendorf 2002, p. 145). Therefore, 80 or 80% pairwise agreement was interpreted as good reliability in this study. Krippendorff suggests the following for interpreting his coefficient “[I]t is customary to require $\alpha \geq .800$. Where tentative conclusions are still acceptable, $\alpha \geq .667$ is the lowest conceivable limit (2004a, p. 241). Hence, the value of $\alpha$ ranging from 0.7 to 0.8 was interpreted as “acceptable reliability,” and the $\alpha$ equal or greater than 0.8 was considered as “good reliability” in this study.

<table>
<thead>
<tr>
<th>Analysis Types</th>
<th>Categories</th>
<th>Simple Coefficient Agreement Index</th>
<th>Krippendorff’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideational Function</td>
<td>Process types</td>
<td>0.86</td>
<td>0.80</td>
</tr>
<tr>
<td>Appraisal System</td>
<td>Attitude types</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Attitude polarity</td>
<td>0.92</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>Attitude graduation</td>
<td>0.88</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td>Engagement types</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Engagement graduation</td>
<td>0.90</td>
<td>0.84</td>
</tr>
</tbody>
</table>

The results of the inter-coder analyses are presented in Table 18. As shown in the table, the inter-coder reliability indices for all five types of coding in SFL were within the good range. The percent agreement coefficients for the five coding types (types of processes, types of attitude, types of engagement, polarity of attitude, and graduation in engagement and attitude) were all above 0.85, which were interpreted as good in this study. The coefficients for the types of attitude and engagement were the highest with 100% of coded instances in agreement. The second highest coefficient was for polarity of attitude with 92% of coded instances in agreement. In addition, the Krippendorff’s $\alpha$ indices for all the five coding types also fell within the good range from 0.8 to 1. In agreement with the overall results of percent agreement coefficients, the
inter-coder reliability for types of processes was the lowest with the nominal $\alpha$ of 0.8, and those for types of attitude and engagement were the highest with the ordinal $\alpha$ of 1. Most of the disagreements in types of processes came from the decisions among the three process types of material process, mental process, and behavioral process. For example, the verb phrase “was looking” in the main clause “I was looking (mental) at the examples to see any common structure (Dan, Stimulated Recall) was coded as the mental verb by the researcher, but coded as the behavioral verb by the second coder. This dispute was then resolved by discussions which concluded “was looking” should be coded as conveying a mental process because the speaker was doing the action with a purpose or thought process in mind based on the contextual information in the clause. All the coding discrepancies in types of processes were then addressed in this way to refine the coding scheme. The result of this stage was a list of coded instances for each category in the ideational and appraisal systems. These coded instances were then used in the categorizing stage.

**Stages 2 & 3: Categorizing and theming**

The second stage contained the development, modification, and revision of categories or central ideas. The list of categories in this stage helped generate themes in the theming stage (Creswell & Plano Clark, 2007; Saldaña, 2009). All the transcripts had been coded in the *Nvivo* version 11 software; thus, all coded instances for each category in the coding scheme could be exported to a file. The exported output included a summary table which has the number of coded instances for each category. All the coded instances were then reviewed by the researcher before being categorized into central ideas. For example, all the coded instances for mental processes were further classified into more concrete types of processes such as *noticing language*.
resources in author integration, or focusing on the meaning of the pattern. After being categorized into central ideas, all these instances were then examined by the researcher again for themes. In order to generate meaningful themes, all the associated components of the coded instances were revisited in their specific contexts. A second coder was recruited for the categorizing and theming stage to ensure the reliability and validity of the results. The categorizing and theming results identified by the two coders were then compared. The comparison showed that the two coders generated similar categories and themes. The final categories and themes were then finalized to answer each research question. After reviewing the categories and the themes multiple times, notable and/or representative participant quotations were extracted and analyzed to illustrate each category and the theme for reporting results. The subsections below provide detailed descriptions of how each of the analyses was implemented to address each research question of the study.

4.5.3. Language Learning Potential

Two aspects of language learning potential were under examination in this study including (1) whether and how the intended characteristics of the materials led to the learners’ noticing and focusing on features of source use; and (2) whether and how the learners obtained any learning gain in source use after completing the materials.

Aspect #1: Whether and how the intended characteristics of the materials led to the learners’ noticing and focusing on features of source use

As shown in Table, the first quantitative data sources for the first aspect included the responses to the five 6-point Likert-scale statements in Question 7 and the statements in Question 10 of the post-training survey, which directly describe specific processes (i.e., noticing and
focusing) while working with the materials and characteristics of the materials. The 6-point Likert-scale ranges from Strongly Disagree to Strongly Agree corresponding to the numeric range from 1 to 6. A mean score of greater than 3 and lower than 4 is considered to indicate a moderate level of agreement, and a mean score of greater than 4 is a high level of agreement.

The second source of quantitative data consisted of the total time spent on the Moodle-based lesson and the corpus-based tool, and the number of searches for each feature in the tool. The means from these descriptive statistical analyses indicate the average time that each student took to complete the lesson, and spent on the tool. They also show the average number of searches for each feature of source use in the tool. The results from these descriptive analyses also help show the degree of variability among the students in these aspects. The combination of quantitative results from the survey and the computer-based records of use generated evidence of whether or not the characteristics of the materials led to the students’ noticing and focusing on features of source use in the materials.

Concurrently, a within-case analysis on each of the two major qualitative data sources was also conducted to address the first aspect of the language learning potential. As shown in Table, data sources for the first aspect of the learning potential quality consisted of the transcripts from the interviews that were held with four students about their learning experience with the materials, and from the stimulated recalls with another four students. As described above, the ideational system in SFL was selected as a theoretically informed analysis framework for the coding process to examine this language learning potential quality of the materials. Any main verb in each main clause was categorized into one of the six process types which are material (i.e., processes of doings and happenings), mental (i.e., processes of thinking, sensing, wanting,
and feeling), verbal (i.e., processes of saying or signaling), behavioral (i.e., describing a human behavior), existential (i.e., stating the existence of something), and relational (i.e., linking two elements). The associated components of each identified process verb, which are participants and circumstances, were also highlighted for the categorizing and theming stages. Table 19 exemplifies how each type of processes (in bold) was coded in the collected data.


<table>
<thead>
<tr>
<th>Process Types</th>
<th>Knowledge Structure</th>
<th>Category Meanings</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Doing</td>
<td>Action-Doing</td>
<td>I clicked on the tab to look at the examples if I didn’t understand it. (Taylor, Student Interview)</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Doing</td>
<td>Behaving</td>
<td>I was sneezing as I was sick that day. (Betty, Stimulated Recall)</td>
</tr>
<tr>
<td>Verbal</td>
<td>Doing</td>
<td>Saying</td>
<td>But it says ‘position identification’ and that I need to go back to the tool for checking again (Casey, Stimulated Recall).</td>
</tr>
<tr>
<td>Mental</td>
<td>Sensing</td>
<td>Perception</td>
<td>But I would prefer to paraphrase, and then just cite at the end. (Nancy, Student Interview)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Affection</td>
<td>The frequency graphs were really cool, I liked seeing how the neutral was the most commonly and verbal was the most commonly used among those different categories. (Sam, Student Interview)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cognition</td>
<td>Because I’m not very familiar with the corpus tool, so I was just wondering if there was anything else that could show me, or teach me about what’s involved in this. (Yi, Stimulated Recall)</td>
</tr>
<tr>
<td>Relational</td>
<td>Being</td>
<td>Attribution</td>
<td>(The tool) It’s organized. It’s easy to navigate. (Ketty, Student Interview)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identification</td>
<td>I think it was the rhetorical function tab. (Ketty, Student Interview)</td>
</tr>
<tr>
<td>Existential</td>
<td>Being</td>
<td>Existing</td>
<td>There were a lot of examples for me to see in the tool. (Taylor, Student Interview)</td>
</tr>
</tbody>
</table>

Note: All the illustrative verbs are bolded.
As explained previously, to investigate the language learning potential quality of the materials, specific verb types in the ideational analyses of the transcripts were selected based on the characteristics of the processes as described in the framework and Mohan’s (1986, 2011) knowledge framework. First, the coded verbs under the mental, and material processes were further examined to see if any were related to either noticing or focusing, because these two process types were used to construct thinking skills and knowledge construction in the learners’ learning experiences with the materials (Mohan, 1986, 2011). As shown in the illustrative examples for the material and mental process in Table, the coded verbs in the action and cognition categories help describe the learners’ actions (e.g., clicked on the tab) and thinking processes (e.g., was wondering) which show their construction of reflection on their learning when working with the materials.

The quantified coded processes in each of these responses thus helped yield evidence of the existence and degree of noticing and focusing in the learning experience of each student. Moreover, the quantified coded circumstances in each response also provided evidence of what characteristics of the materials were involved in the construction of each learning experience, and how they led to the students’ noticing and focusing of source use features. On the other hand, the relational verb types (e.g., “be” and “have”) were selected to examine the specific characteristics of the materials because this process type was used to describe and classify attributes of the materials in the student interview responses (Mohan, 1986, 2011). As the examples for the relational process in Table show, the be verb helps construct the students’ descriptions of the tool and their identification of which feature in the tool in their responses.
All the identified verbs were then tallied by categories of processes in order to highlight what kinds of processes were involved in the learners’ experiences with the materials. Specifically, these coded verbs were counted for frequency and tallied for each process category and for each component, following the classical content analysis approach (Onwuegbuzie & Combs, 2010). Finally, the results of these coding and categorizing processes were used to identify themes in the interviews and stimulated recalls for each case in the study.

Aspect #2: Whether and how the learners obtained any learning gain in source use after completing the materials.

As shown in Table, six sources of data were collected to address the second aspect of the learning potential, which concerns the students’ learning gains after using the materials. Three sources of quantitative data were: (1) the students’ responses to the three 6-point Likert-scale questions (i.e., Question 6, Question 7, Question 11) about their learning gains in the post-training survey; (2) their scores on the pre- and post-test on sources; and (3) their grades on the first and revised documented essays which were written before and after the training. Following the suggestion by Onwuegbuzie and Combs (2010), descriptive analyses were conducted on all sources of quantitative data. For the scores of the tests and the source use quality of the writing drafts, one sample t-test analyses were conducted to examine any changes in knowledge and skills about source use after the examination of the data characteristics.

Three sources of qualitative data included: (1) transcripts of student responses to the interview questions about their learning gains; (2) written responses to the open-ended questions in the lesson; and (3) written responses to the open-ended question in the journal. Following the same within-case qualitative analysis approach as for the first aspect of the language learning
potential, the interview transcripts were coded using the ideational system in SFL to identify which thought processes and associated participants and circumstances were involved in the learners’ learning experiences with the materials. Each main verb in each of the main clauses was identified and assigned into one of the process types. Such ideational analyses of the interview data then yielded a categorized list of processes and a number of their associated participants and circumstances involved in the learning experiences of the students. The coded instances in the material and mental process groups were then used to identify if there was any learning gain reported in each student interview.

The selection of these two verb types to examine the learners’ learning gains is also supported by Mohan’s (1986, 2011) Knowledge Framework. In the framework, Halliday’s three main types of processes help construct the three theory-practice relations. Accordingly, sequences and principles are constructed using processes of doing (i.e., material), and choice and values are constructed using processes of sensing (i.e., mental). Moreover, as Mohan (1986, 2011) points out, these two verb types in the learners’ discourse also help them construct their reflection on their learning. Four examples showing how the interview data was coded to address the language learning gain aspect of the materials on source use are given below. In each example, the coded verb was bolded with its assigned process type in the bracket.

Example 1: I feel like, part of me learned (mental) just more about what they commonly use. You see (mental) the patterns that they’re doing, seeing that they’re using parenthetical a lot more using position support a lot more, and they did a lot of research. (Sam, Student Interview)
Example 2: *I was thinking (mental) about the connection to the purpose of the assignment because for the paper we also had to use outside research to complete the assignment.* (Nancy, Student Interview)

Example 3: *I feel like definitely I noticed (mental) and became more familiar (mental) with every topic (source use).* (Ketty, Student Interview)

Example 4: *Yeah, I think that it (knowledge about rhetorical functions) will change (material) the way I organize sources that I integrate.* (Ketty, Student Interview)

It should be noted from Example 1 and Example 3 that the verb “feel” in the phrase “I feel like” was not coded for any of the processes because it was used in the expression to convey the speaker’s certainty about his or her learning. Similarly, the verb “think” in the phrase “I think that” in Example 4 was not coded for the mental process. This distinction between the resources for the ideational function and the interpersonal function is described in the data analysis section above.

After the generation of themes about the learners’ learning gains in source use after the training, each of the students’ written responses in the lesson and the journal was examined in terms of how well it addressed the prompt and how well it helped illustrate the identified themes. Specifically, each was used to check if a student was able to identify any gap between the use of sources in the papers and that in the collection of A graded papers, and to generate any strategies to incorporate external sources to revise the paper. Each response was scrutinized to check how representative it was for the themes about learning gains emerging from the student interviews. Finally, both the results of the quantitative and qualitative analyses were triangulated with each other to examine if there were any similarities or differences between them.
4.5.4. Meaning Focus

The meaning focus quality of the materials on source use was investigated in terms of:

1. Whether and how the learners focused on constructing and interpreting the meaning of source use while working with the materials; and
2. Whether and how the intended characteristics of the materials directed the learners’ attention towards the meaning of features of source use.

**Aspect #1: Whether and how the learners focused on constructing and interpreting the meaning of source use while working with the materials**

As shown in Table, there was only one quantitative data source for the first aspect of the meaning focus quality. This data source included the responses to the 6-point Likert-scale statement in Question 6 and the five statements in Question 7 in the post-training survey, which directly state whether or not a person focuses on understanding different features of citation. The 6-point Likert scale ranges from *Strongly Disagree* to *Strongly Agree* corresponding to the numeric range from 1 to 6. As with the previous work with the Likert scale, a mean score of greater than 3 indicates a moderate level of agreement, and a mean score of greater than 4 indicates a high level of agreement.

In addition to this quantitative analysis, three qualitative data sources were analyzed to examine this aspect of the meaning focus quality. These sources included transcripts of the learners’ responses to interview questions about their focus on understanding the features of source use during the lesson, transcripts of the students’ stimulated recalls, and the written responses to the open-ended questions in the lesson and the journal. As explained in the previous section, the ideational analyses in SFL were also conducted on the first two qualitative data sources to investigate how the meaning focus process was involved as a part of the thought
process in each student’s learning experience with the materials. Following the same coding procedure to examine the language learning potential quality, all identified verbs in the mental and material groups were then tallied and categorized to examine whether and how the students focused on understanding the meaning of source use features. The students’ written responses to the questions in the lesson and the journal were examined for appropriate artifacts to supplement the results of the ideational analyses.

Aspect #2: Whether and how the intended characteristics of the materials directed the learners’ attention towards the meaning of features of source use.

As presented in Table, there were four quantitative data sources for the second aspect of the meaning focus quality. The first data source included the responses to the five 6-point Likert-scale statements in Question 7 and the statements in Question 10 in the post-training survey, which directly state which characteristics of the materials help direct learners’ attention to understand different features of citation. The 6-point Likert scale ranges from Strongly Disagree to Strongly Agree corresponding to the numeric range from 1 to 6. The other three quantitative data sources were the average amount of time each student spent on each of the two main components of the materials. As described above, these quantitative data results were also reported to examine the language learning potential quality of the materials.

The qualitative analyses were based on the same ideational analyses of the interview transcripts about meaning focus and the stimulated recalls. All the associated circumstances and participants of the identified verbs in each transcript were further examined to investigate which characteristics of the materials were involved in the reported processes for focusing on meaning. Two examples of the collected qualitative data that were coded for types of processes,
participants, circumstances to examine the two aspects of the meaning focus quality are provided below.

Example 5: *I was looking* (mental) *at the blue, little boxes, and figuring out* (mental) *what the general category was.* (Taylor, Stimulated Recall)

Example 6: *I tried* (mental) *to look at examples for different things and see if the examples are structured in a similar way to the ones given in the lesson.* (Nancy, Student Interview)

Example 7: *I usually started out* (material) *by just reading the question to figure out what it was asking.* (Sam, Student Interview)

In the examples above, the identified verbs were bolded with their assigned types of processes in brackets. Their associated participants were single underlined, and the circumstances were double underlined. It should be noted that the “looking” verb was assigned into the mental process because the speaker did not intend to describe her simple action of looking at the tab in the tool, but she was also mentally thinking with a purpose when looking at the tab. Therefore, as Halliday (1994) explains, this potential behavioral verb should be coded as a mental verb. As can be seen, all the bolded verbs with their associated participants who were the students themselves provided evidence of whether or not the students focused on understanding the features of source use when working with the materials. Moreover, the underlined circumstances in these examples offer evidence of which characteristics were involved in these focusing on meaning processes.

4.5.5. Learner Fit

The learner fit quality of the materials was examined through the participants’ perceptions of: (1) the difficulty level of the materials, and (2) their engagement in completing the materials and the usefulness of the materials. As presented in Table, the same sources of data
were examined to study these two aspects of the learner fit quality. The first quantitative analyses were based on the students’ responses to the 6-point Likert scale statements in Question 8 of the post-training survey, which asks how a person finds the materials appropriate for him or her. The analyses of the working records of the students in the Moodle-based lesson, and the corpus-based tool were also used to examine if and how the students were able to work with the materials during the lesson.

In addition, the two sources of qualitative data including the transcripts of the interviews held with the students and the instructors were analyzed to examine the learner fit quality. Following the coding procedure described in the data analysis section, the interview transcripts were coded using the appraisal system in SFL. Each main clause in the transcript was coded in terms of different aspects of attitude including (1) types of attitude; (2) polarity of attitude; (3) graduation (i.e., strength) of attitude; and (4) engagement type and level in attitude (see Figure 18). By using the theoretical concepts in exploring one’s perception through their choice of language resources, such appraisal analyses afford an insightful and meaningful understanding of the participants’ evaluation of the appropriateness of the materials. Several examples of how the data were coded in terms of the five major categories in the coding framework for the appraisal system in this study are presented in Table 20 below.
<table>
<thead>
<tr>
<th>Examples</th>
<th>Aspects</th>
<th>Attitude</th>
<th>Polarity</th>
<th>Graduation</th>
<th>Engagement</th>
<th>Types</th>
<th>Graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>When you still don’t know it that well, <strong>it’s really hard</strong> to put stuff into your own words <em>(Taylor, Student Interview)</em></td>
<td>Difficulty</td>
<td>Appreciation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Some of the writing, to me, was <strong>more tiresome in a way, like less interesting than</strong> just like clicking on some like if this is right or that kind of thing. <em>(Nancy, Student Interview)</em></td>
<td>Engagement</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saying why the right answer was correct, that’s <strong>helpful and nice</strong> for me to understand what was happening. <em>(Sam, Student Interview)</em></td>
<td>Usefulness</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yeah, I think I <strong>was able to understand the meaning of everything</strong>. <em>(Sam, Student Interview)</em></td>
<td>Difficulty</td>
<td>Affect</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>And I’m still interested in it to look for the patterns. <em>(Ketty, Student Interview)</em></td>
<td>Engagement</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel like I <strong>got a lot of useful information that I had not known before</strong>. <em>(Nancy, Student Interview)</em></td>
<td>Usefulness</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* + (positive), - (negative); H (high), M (mid), L (low); C (contracting), E (expanding)

In the examples above, all the language resources of attitude were bolded. These examples were taken from the collected students’ interview responses to each specific aspect of the learner fit quality. Each main clause in the chosen response was examined for language
resources in order to be categorized into a sub-category of the five categories of the appraisal system. For instance, the first two examples in the table both contain evaluative language resources that describe the difficulty level of the materials, which reflects the quality of the materials. Therefore, the clause was classified into the appreciation group. The meanings of these evaluative language resources allowed them to be categorized into the negative polarity type. However, while the first example uses the second personal pronoun “you” to convey the speaker’s perception of the difficulty aspect of the materials, the second example uses the phrase “to me” to emphasize the self-ownership of the perception about the materials. Thus, they were assigned into two different types of engagement as shown in the table. Moreover, based on the accompanying language resources with the evaluative resource and the coding scheme for graduation (Huffman, 2015; Martin & White, 2005), the strengths of attitude and engagement conveyed in both these clauses were set in the medium level.

As described in the data analysis procedure, all the coded instances of attitude were then examined for central ideas or categories after being tallied in a table. This categorizing and theming process provides evidence of how the participants perceived the difficulty level, the usefulness, and their engagement with the materials. Moreover, the analyses of the associated engagement and graduation resources highlighted how strong the evaluations of the participants were, and how committed the participants were to their evaluations of the materials.

4.5.6. Impact

Two aspects of the impact quality of the materials were under examination in this study including: (1) how positive the experiences of the students with the materials were; and (2) how positive the experiences of the teachers with the materials were. As presented in Table, two
major sources of data coming from questionnaire surveys and interviews with the students and instructors were examined to study these two aspects of the impact quality. Similarly, both quantitative and qualitative were conducted to investigate each aspect.

In order to explore the participants’ perceptions of their experiences with the materials, several quantitative analyses were needed. To explore the first aspect, the first quantitative analysis was based on the students’ responses to the 6-point Likert-scale statements in Questions 4 and 5 about the need for learning source use in the course and the student evaluation of how to teach it. Moreover, an additional analysis was implemented on the students’ responses to the 6-point Likert-scale statement in Question 8 of the post-training survey about the positivity of their learning experiences with the materials. Another quantitative analysis was conducted to examine the impacts of the learning experiences on the learners based on the students’ responses to the two 6-point Likert scale statements in Question 6 and Question 8 of the post-training questionnaire survey. To explore the impact of the teaching experience with the materials, a quantitative analysis was conducted on the instructors’ responses to the 6-point Likert scale statements in the two questionnaire questions about the need for teaching source use and several ideas for teaching it. All these quantitative analyses followed the same procedure in the previous section for the quantitative analyses of survey responses.

To triangulate the quantitative results about the impact of the experiences with the materials on both instructors and students, the transcripts of corresponding interview responses by both the instructors and the students who used the materials were analyzed using the appraisal system in SFL. Following the same procedure described in the preceding section about learner fit, the appraisal analyses of the two sources of data took several steps. First, all the transcribed
interview responses were collected for the *impact* quality. Then, each of the main clauses in the collected responses were examined for any language resources that helped assign it into one of the five major categories in the appraisal coding framework (see Figure 18). Below are three examples which illustrate how the interview data were coded using the appraisal system to examine each aspect of the *impact* quality.

Example #8: (Learner’s experience) *I think I really have never had to use other, like, use many sources before, so I think this is really helpful (appreciation).* (Nancy, Student Interview)

Example #9: (Instructor’s experience) *It’s been eye-opening (appreciation), I guess.* (Instructor #4, Instructor Interview)

Example #10: (Impact on learners) *I feel like looking at this, my attitude towards writing is that it’s not as big of a monster as I thought it was (affect).* (Ketty, Student Interview)

Example #11: (Impact on learners) *I think that they’ll pay a lot more attention to mention of citations in the rubric (affect).* (Instructor #1, Instructor Interview)

In the examples above, the evaluative language resources with their assigned attitude types are in bold. Based on the meanings of the evaluative language resources, all of these identified attitudes were found to convey positive evaluations. Moreover, based on the coding scheme for graduation, the language resources in these statements indicate a moderate level of strength in the conveyed attitudes. Although the language resources in these examples show the same type of engagement of the speakers towards their evaluations through the presence of expressions such as *I feel, I guess*, the strength of engagement in the first example is different from that in the other examples. Because the speaker provides an explanation for her evaluation in the first example, her level of engagement in the evaluation of the learning experience is considered to be
stronger than that statement without a reason.

After the coding process, the appraisal analyses for the *impact* quality of the materials were then followed by the categorizing and theming stages. These stages yielded categories and themes that provided qualitative evidence for the quality. Such evidence was then triangulated with the results from the quantitative analyses to generate an argument on the *impact* quality of the materials.

### 4.6. Chapter Summary

The purpose of this chapter was to provide detailed descriptions regarding the methodology of the evaluation project. The chapter started with a presentation of the mixed-methods research design of the project. Following this part was a report of how the data were collected and analyzed to address each research question in the study. The report began with a description of the instructional contexts where the experimental teaching materials were implemented before explaining the three-phase procedure of the data collection. Each phase of the data collection procedure was also detailed in the report. The presentation of the data collection phase included both the development and the use of multiple instruments in the study (e.g., interviews, stimulated recalls, writing drafts, computer-based logs) and the characteristics of the collected data. The final part of the chapter then explained the data analyses conducted for each collected data source in order to answer each research question of the study. Each presentation of a data analysis also delineated specific steps taken to complete it. Based on the detailed explanations of the data analyses in this chapter, the next chapter presents the results of the data analyses to address each research question.
CHAPTER 5: FINDINGS OF THE LANGUAGE LEARNING POTENTIAL OF THE MATERIALS ON SOURCE USE

This chapter presents the results of the investigation into the language learning potential quality of the materials on source use. Based on the theory of action framework for the teaching materials presented in Chapter 2, this criterion is operationalized to consist of two aspects in this study. The first aspect refers to whether the design characteristics of the materials on source use led to the students’ focusing and noticing of source use features or not. The second aspect involves the examination of the learners’ learning gains in the features of source use that were focused on and noticed while using the materials.

Both quantitative and qualitative data analyses were conducted to investigate each of these two aspects of the language learning potential of the materials. The overall results showed that most of the college students in the study could focus on and notice features of source use to some extent when working with the materials. Moreover, they were shown to gain some knowledge about source use although there was no statistically significant change in their performance on the pre- and post-tests on source use. Similarly, the analyses of the students’ source use quality scores on the first drafts and the revised drafts indicated an increase in the source use on the revised essays after the training in spite of the statistically insignificant result. Consistent findings were also obtained through the metalinguistic and pragmatic awareness questionnaire survey on source use. Its results showed that the students raised their awareness about source use and felt they knew how to revise their source use in the first drafts of the documented essay assignment after working with the materials. Each section below presents the
findings of each aspect in the *language learning potential* quality. Each section starts with the quantitative results followed by the qualitative results. Based on the convergence model as described by Creswell and Plano Clark (2007), these two results were then compared and contrasted to make a context-specific argument about each aspect of the language learning potential of the materials on source use for college students in the study.

5.1. Noticing and Focusing on the Features of Source Use

The first aspect of *language learning potential* concerns how the materials helped the students focus on and notice the features of source use when working with the materials. To examine this aspect, this section divides the presentation of the results into two subsections. The first subsection investigates whether the students focused on and noticed the features of source use when working with the materials. The second subsection examines how the design characteristics of the materials led to the focusing and noticing processes of the students.

5.1.1. Whether the Students Focused on and Noticed the Features of Source Use

The results for this question came from both the quantitative and qualitative analyses. The first quantitative analyses consisted of the analyses of the computer-based logs of the students’ time spent on the Moodle-based lesson and on the web-based corpus tool. The number of searches was examined for each of the twenty five search features in the tool. The second quantitative analyses were based on the 71 students’ responses to the 6-point Likert-scale questions about their perceptions of their focusing and noticing processes when working with the materials on source use. To triangulate these quantitative results, the ideational analysis of processes, a SFL-theoretically based analysis, was also conducted on the transcripts of stimulated recalls with four students (Betty, Casey, Yi, and Dan).
First, the average time spent on the Moodle-based lesson on source use in each of the eight participating classes in the study is presented in Table 21. The table also displays the number of student participants in each class who agreed to share their Moodle-based usage records with the researcher. As shown in the table, each student in each class spent an average of about half an hour on the materials. The students in Class #2 spent the least average time on the materials while the students in Class #4 took the most time on the materials.

Table 21. Summary of the Students’ Time Spent on the Moodle-based Lesson (N=100)

<table>
<thead>
<tr>
<th>Instructional ID</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class #1 (n=12)</td>
<td>29 minutes 26 seconds</td>
<td>7 minutes 13 seconds</td>
</tr>
<tr>
<td>Class #2 (n=10)</td>
<td>19 minutes 19 seconds</td>
<td>3 minutes 17 seconds</td>
</tr>
<tr>
<td>Class #3 (n=14)</td>
<td>31 minutes 27 seconds</td>
<td>6 minutes 17 seconds</td>
</tr>
<tr>
<td>Class #4 (n=14)</td>
<td>36 minutes 26 seconds</td>
<td>8 minutes 14 seconds</td>
</tr>
<tr>
<td>Class #5 (n=14)</td>
<td>26 minutes 22 seconds</td>
<td>6 minutes 16 seconds</td>
</tr>
<tr>
<td>Class #6 (n=11)</td>
<td>23 minutes 26 seconds</td>
<td>5 minutes 15 seconds</td>
</tr>
<tr>
<td>Class #7 (n=17)</td>
<td>28 minutes 25 seconds</td>
<td>8 minutes 16 seconds</td>
</tr>
<tr>
<td>Class #8 (n=8)</td>
<td>35 minutes 22 seconds</td>
<td>13 minutes 15 seconds</td>
</tr>
<tr>
<td>Total (N=100)</td>
<td>29 minutes 24 seconds</td>
<td>8 minutes 15 seconds</td>
</tr>
</tbody>
</table>

Based on the instructional context table (see Table 7), this average time difference could be explained by the fact that the instructor in Class #2 was 10 minutes late for the class and did not use the PowerPoint slides to give sufficient context and instructions for the students in the class to complete the materials as expected. However, the lesson was conducted over the whole period of 50 minutes in all the other classes, and the students were presented with the materials before starting the lesson on their own. Although this result shows that the students, on average, spent a decent amount of time on the materials, this amount of time was not sufficient to allow them explore all the features of source use in depth as hypothesized in the theory of action for the
design and evaluation of the materials (see Chapter 2). As described in the design characteristics of the materials, the lesson was designed for a 50-minute class, and the students were expected to spend at least 40 minutes on the lesson to explore the materials and understand the features of source use.

Similarly, the result of the analysis on the students’ active time on the web-based corpus tool shows that the students did not spend as much time as hypothesized in the theory of action framework for the materials, which was at least 10 minutes. Based on the data of 100 students who consented to share their tool usage logs, the average time each student spent on the tool was 4 minutes and 20 seconds (M=4.20; SD=2.09) although the range of the active time was quite large (18.03). While the least active time on the tool was only 1 minute and 07 seconds, the greatest recorded time was 19 minutes and 10 seconds.

Further quantitative analyses of the students’ activities on the tool also reveal that they used the tool to do a number of different searches on the tool as shown in Table 22. On average, each student conducted nearly 20 searches on the tool. While the highest number of searches was on the rhetorical functions of citation (4.12), the lowest number of searches was on the types of textual integration (0.81). This result suggests that the rhetorical functions may be more unfamiliar and more complicated for the students than the other features.

<table>
<thead>
<tr>
<th>Search Types</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Search</td>
<td>1.76</td>
<td>8.33</td>
<td>0</td>
<td>74</td>
</tr>
<tr>
<td>Combination Tag Search</td>
<td>3.31</td>
<td>5.57</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Citation Types</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parenthetical</td>
<td>1.64</td>
<td>1.50</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Non-Parenthetical</td>
<td>1.70</td>
<td>1.98</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Sub-total</td>
<td>3.34</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 22 continued

<table>
<thead>
<tr>
<th>Author Integration</th>
<th>Author Integral</th>
<th>General-author Integral</th>
<th>Non-author Integral</th>
<th>Sub-total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.02</td>
<td>0.40</td>
<td>0.40</td>
<td>1.82</td>
</tr>
<tr>
<td>Textual Integration</td>
<td>Paraphrases (or Assimilation)</td>
<td>0.29</td>
<td>0.66</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Quotation</td>
<td>0.27</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td>0.25</td>
<td>0.74</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sub-total</td>
<td>0.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Textual</td>
<td>0.80</td>
<td>1.34</td>
<td>0</td>
</tr>
<tr>
<td>Verb Types (Denotation)</td>
<td>Mental</td>
<td>0.66</td>
<td>1.88</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Research</td>
<td>0.72</td>
<td>1.21</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sub-total</td>
<td>2.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Endorse</td>
<td>0.69</td>
<td>1.18</td>
<td>0</td>
</tr>
<tr>
<td>Verb Types (Stance)</td>
<td>Contest</td>
<td>0.53</td>
<td>1.07</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Acknowledgement</td>
<td>0.54</td>
<td>1.21</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sub-total</td>
<td>1.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Context Establishment</td>
<td>0.57</td>
<td>1.11</td>
<td>0</td>
</tr>
<tr>
<td>Rhetorical Functions</td>
<td>Exemplification</td>
<td>0.28</td>
<td>0.65</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Position Identification</td>
<td>0.69</td>
<td>1.32</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Position Support</td>
<td>1.07</td>
<td>1.98</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Knowledge Building</td>
<td>0.31</td>
<td>0.66</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Compare and Contrast</td>
<td>0.33</td>
<td>0.69</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Evaluation</td>
<td>0.32</td>
<td>0.73</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Credit</td>
<td>0.55</td>
<td>1.40</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sub-total</td>
<td>4.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19.92</td>
<td>14.99</td>
<td>0</td>
<td>85</td>
</tr>
</tbody>
</table>

To provide further evidence for whether the students focused on and noticed features of source use when working with the materials, I conducted an analysis of the 71 students’ responses to the eight 6-point Likert-scale statements about their working processes in Question 7 of the post-training survey.

Table 23 presents the summary of the students’ responses to the eight statements about the focusing and noticing processes when working with the materials. The first column of the
The table presents these eight statements. As shown in the table, four out of these eight statements are related to the noticing process (#3, #7, #9, #12) and two of them (#11, #18) are about focusing. The other two statements (#13, #15) are about the importance of these processes in their learning of source use. The 6-point Likert scale ranges from Strongly Disagree to Strongly Agree which was then converted to a numeric range from 1 to 6 correspondingly. As shown in the second and third columns of the table, all the first three points (Strongly Disagree, Disagree, Slightly Disagree) were grouped together under the Disagree category while the other points (Strongly Disagree, Disagree, Slightly Disagree) were gathered under the Agree category.

Table 23. Summary of Students’ Responses to the Statements about their Working Processes (N=71)

<table>
<thead>
<tr>
<th>Statements in Question 7</th>
<th>Disagree</th>
<th>Agree</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noticing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I was able to notice some language forms for each citation feature.</td>
<td>14.09%</td>
<td>85.92%</td>
<td>4.32</td>
<td>0.92</td>
</tr>
<tr>
<td>7. Working with the tool <strong>did not</strong> help me notice any language cues for each citation function.</td>
<td>74.65%</td>
<td>25.35%</td>
<td>2.72</td>
<td>0.97</td>
</tr>
<tr>
<td>9. The instruction in the lesson allowed me to notice the patterns of using citation features.</td>
<td>22.54%</td>
<td>77.47%</td>
<td>4.06</td>
<td>1.00</td>
</tr>
<tr>
<td>12. The instruction in the lesson helped me notice some gaps in my source use practice for the assignment.</td>
<td>18.32%</td>
<td>81.69%</td>
<td>4.23</td>
<td>1.15</td>
</tr>
<tr>
<td>Focusing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. The instruction in the lesson made me focus on the use of citation features in the documented essay.</td>
<td>16.90%</td>
<td>83.10%</td>
<td>4.17</td>
<td>1.21</td>
</tr>
<tr>
<td>18. I focused on understanding citation features by observing them before explaining their use in the target assignment.</td>
<td>23.94%</td>
<td>76.05%</td>
<td>4.92</td>
<td>1.26</td>
</tr>
</tbody>
</table>
The results on the students’ responses to the statements about noticing and focusing processes were quite similar. In terms of the noticing process, the majority of the students, ranging from 77% to 85%, agreed that they were able to notice features of source use such as forms and language resources associated with each form. They were also able to notice some differences between their own practice of source use and the practice in the A graded papers. The mean scores on the 6-point Likert-scale of these statements also indicated a moderately high level of agreement among the students with these statements. It should be noted that although Statement #7 was negatively stated, the result was quite similar to those of other statements. Similarly, the results on Statement #11 and Statement #18 showed that most of the students (83.10% and 76.05%) agreed that they focused on observing and understanding features of source use when working with the materials. Their mean scores on the 6-point Likert-scale also indicated the moderately strong agreement on these statements.

However, there existed a discrepancy in the students’ perceptions of the importance of these noticing and focusing processes in their learning of the features of source use and their
revisions of the first drafts that they submitted. The responses to Statement #13 showed that a considerable proportion of the students (76.05%) had a relatively strong agreement (M=4.11, SD=1.01) about the importance of noticing and focusing on the differences in source use between their papers and the A graded papers in their revision of the papers. However, fewer of them (50.71%) disagreed with Statement #15 which states that noticing and focusing on the features of source use in the A graded papers are unnecessary for their learning to write the papers. It should be noted that the average disagreement strength level with this statement (M=2.80, SD=1.09) was much lower than the agreement strength with Statement #13. This discrepancy might be caused by the difference in phrasing the two statements. While Statement 13 is stated in the affirmative form, Statement 15 is written in the negative form.

To triangulate these quantitative results, the appraisal analyses of processes were conducted on the transcripts of the students’ stimulated recalls and interviews. The analyses were based on Halliday’s (1991) ideational system of the SFL which allowed me to examine students’ verbal reports of the types of processes involved in the students’ learning experiences with the materials systematically. To address the question of whether the students focused on and noticed features of source use when working with the materials, a close look at the verbs reporting process types in the student’s working experiences with the materials was suitable. Consequently, all the verbs in each of the main clauses in the transcripts of the stimulated recalls were coded using the appraisal coding scheme presented in the data analysis section of the previous chapter. The results of this coding are presented in Table 24 below.
Table 24. Summary of Raw Counts and Percentages of Coded Processes in Four Students’ Stimulated Recalls

<table>
<thead>
<tr>
<th>Process Types &amp; Subcategories</th>
<th>Dan</th>
<th>Yi</th>
<th>Casey</th>
<th>Betty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral</td>
<td>15(6.7%)</td>
<td>2(1.9%)</td>
<td>7(3%)</td>
<td>3(1.2%)</td>
</tr>
<tr>
<td>Existential</td>
<td>2(0.9%)</td>
<td>1(0.9%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Material Action (Doing)</td>
<td>62(27.7%)</td>
<td>35(32.4%)</td>
<td>61(26.5%)</td>
<td>64(24.9%)</td>
</tr>
<tr>
<td>Event (Happening)</td>
<td>4(1.8%)</td>
<td>3(2.8%)</td>
<td>9(3.9%)</td>
<td>2(0.8%)</td>
</tr>
<tr>
<td>Sub-total</td>
<td>66(29.5%)</td>
<td>38(35.2%)</td>
<td>70(30.4%)</td>
<td>66(25.7%)</td>
</tr>
<tr>
<td>Mental</td>
<td>0(0%)</td>
<td>2(1.9%)</td>
<td>2(0.9%)</td>
<td>1(0.4%)</td>
</tr>
<tr>
<td>Affection</td>
<td>91(40.6%)</td>
<td>41(38%)</td>
<td>96(41.7%)</td>
<td>117(45.5%)</td>
</tr>
<tr>
<td>Cognition</td>
<td>10(4.5%)</td>
<td>7(6.5%)</td>
<td>7(3%)</td>
<td>9(3.5%)</td>
</tr>
<tr>
<td>Perception</td>
<td>101(45.1%)</td>
<td>50(46.4%)</td>
<td>105(45.6%)</td>
<td>127(49.4%)</td>
</tr>
<tr>
<td>Sub-total</td>
<td>101(45.1%)</td>
<td>50(46.4%)</td>
<td>105(45.6%)</td>
<td>127(49.4%)</td>
</tr>
<tr>
<td>Relational</td>
<td>38(17%)</td>
<td>15(13.9%)</td>
<td>44(19.1%)</td>
<td>61(23.7%)</td>
</tr>
<tr>
<td>Verbal</td>
<td>2(0.9%)</td>
<td>2(1.9%)</td>
<td>4(1.7%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Total</td>
<td>224(100%)</td>
<td>108(100%)</td>
<td>230(100%)</td>
<td>257(100%)</td>
</tr>
</tbody>
</table>

Table 24 summarizes the results of the process analyses on the stimulated recalls with four students. All the process types and their sub-categories in the coding scheme are listed in the first column. As shown in the table, the students’ self-reports about working with the materials were dominated by material and mental processes, especially action and cognition activities. A closer look at the cognition subcategory of the mental process type found that cognition activities were much involved in each of the reported learning experiences with the materials by the students. Specifically, the numbers of coded cognitive verbs made up from 38% to 45.5% out of all the coded verbs in these introspective reports as shown in the last row of the table.

A further examination of the collection of coded material and mental activities in the students’ stimulated recalls was undertaken. This examination was first intended to categorize the identified verbs, and specifically to look for the coded verbs related to focusing and noticing.
processes from all the four students’ stimulated recalls. Another ideational analysis, which examined the participants and circumstances involved in these identified focusing and noticing activities, was carried out to identify themes in these processes of the learners. Finally, the most representative quotation from the learners’ reports was also chosen to illustrate each of these themes.

The results of the closer examination on the collection of material and mental verbs in the four students’ stimulated recall are presented in Table 25. The first column displays the two major process categories which are focusing and noticing. The second column summarizes the major themes emerging from the further analysis of the participants and circumstances involved in these categorized processes. The last column illustrates each theme with corresponding excerpts from the students’ stimulated recalls. In these excerpts, the material verbs are italicized and the mental verbs are bolded.

Table 25. Summary of the Examination on the Material and Mental Processes in Four Students’ Stimulated Recalls

<table>
<thead>
<tr>
<th>Cognition Processes</th>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focusing</td>
<td>Understanding instructions and explanations in the lesson</td>
<td>(1) I was probably reading and <strong>trying to just piece</strong> it (the instruction) together in my head. (Dan)</td>
</tr>
<tr>
<td></td>
<td>Understanding examples in the tool</td>
<td>(2) Here I <strong>was figuring out</strong> what the first page meant where it said ‘click on the tabs’. (Yi)</td>
</tr>
<tr>
<td></td>
<td>Understanding the features of source use in the tool</td>
<td>(3) I <strong>was looking</strong> at them and just <strong>thinking about</strong> what they [the examples] meant. (Casey)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) I <strong>was trying to see</strong> maybe a resemblance between that sentence and these sentences and <strong>see</strong> if I could figure it out from there. (Betty)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5) I <strong>kept trying to make sense</strong> of this [rhetorical functions] really. (Casey)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6) I <strong>was reading</strong> this part [explanations] here, and <strong>comparing</strong> it with the graph I looked at just now. (Yi)</td>
</tr>
</tbody>
</table>
Table 25 continued

<table>
<thead>
<tr>
<th>Noticing</th>
<th>Instructions and explanations in the lesson</th>
<th>(7) I <strong>realized</strong> it wanted me to look at maybe some examples so I <strong>started</strong> just <strong>glancing</strong> over the examples and <strong>trying to decide</strong>. (Casey)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visuals in the tool</td>
<td>(8) I <strong>saw</strong> that the parenthetical had the highest frequency so I <strong>chose</strong> that answer. (Yi)</td>
<td>(9) Just <strong>trying to focus</strong> in here. <em>Looking at the chart displaying the distribution of citing sentence across 3 types.</em> Then I <strong>noticed</strong> that this was similar to the last question and <strong>tried to figure out</strong> what the answer could be. (Betty)</td>
</tr>
<tr>
<td>Features of source use in the lesson and the tool (5)</td>
<td>(10) [Looking at the explanations about multiple forms of source use] I <strong>was wondering</strong> how I would use it in my paper. Then, I <strong>found</strong> that it would make my writing more interesting and fluent. (Dan)</td>
<td>(11) Then I <strong>realized</strong> that that’s the one I’m looking for. Checking my answer, I just <strong>saw</strong> the green check mark and I was excited.</td>
</tr>
<tr>
<td>Examples in the tool</td>
<td>(12) I <strong>noticed</strong> all the examples that are parenthetical, had the parentheses, so I <strong>figured</strong> without even looking on non-parenthetical. (Casey)</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Material verbs are in italics and mental verbs are in bold.

As can be seen in the table, the themes of the analyses also show the association between the focusing and noticing processes with the characteristics of the materials in the student’s working experience. In terms of focusing, the three themes generated from the process analyses of the stimulated recalls indicate that students focused on the materials to achieve different goals such as to understand the instructions and explanations, to understand the examples in the tool, and to understand each feature of source use. First, students focused on understanding the instructions in the lesson to direct their attention to what they should look for. In Excerpt 1 and Excerpt 2, the students were focusing on understanding the questions and the directions in the
lesson. Such understanding was important to help them orient themselves to explore the features of source use. Then, the second theme specifies how the students constructed the meaning of source use features through their focusing on understanding examples in the tool. The two illustrative examples show how the two students perused the examples to understand the features of source use in these examples. Finally, the third theme indicates the students’ construction of the meaning of source use features by their attention to associate the features of source use in the lesson and those in the tool. As shown in Excerpt 6, the student’s focusing on understanding the meaning of source use in documented essays involves her mental comparison between the explanations about the source use feature in the lesson and its distribution graph in the tool.

In terms of noticing, a further analysis of the associated participants and circumstances of the noticing activities in the four stimulated recalls yielded four themes that reveal the relationship between the noticing processes and the characteristics of the materials. As shown in the table, the students reported noticing features of source use thanks to a number of design characteristics of the materials including the instructions and explanations in the lesson, the graphs, and examples in the tool. As shown in Excerpt 10, the student recalled that the examination of the explanations in the lesson allowed him to notice the rhetorical effects of using various forms of source use on his writing quality.

At the same time, these emerging themes from the stimulated recalls also indicate the characteristics of the materials that helped draw students’ attention and trigger their mental effort to understand the materials. For example, Excerpt 4 demonstrates the second theme of the students’ focusing activities to understand the examples in the corpus tool. This student
(Excerpt 4) reported that she was focusing on understanding a feature of source use by examining the examples in the tool and comparing them to identify any difference among them so that she could distinguish one feature of source use from another.

Overall, these qualitative results appear to support the findings of the quantitative analyses on the students’ focusing on and noticing of features of source use when working with the materials. The qualitative results from four stimulated recalls also suggest the association of these focusing and noticing processes with the characteristics of the materials. Further investigation on how the characteristics of the materials led to these focusing and noticing processes is presented in the next subsection.

5.1.2. How Characteristics of the Materials Led to the Students’ Focusing on and Noticing of Features of Source Use

To address this issue, two sources of data were analyzed to triangulate their results. The quantitative analysis was conducted on the students’ responses to the 6-point Likert-scale question about how the eight characteristics of the materials led to their focusing and noticing of the features of source use. The qualitative analysis was based on the examination of the ideational meanings in students’ responses to the interview question about their perceptions of the characteristics of the materials and their learning processes of source use.

The results of the quantitative analysis of the student’s responses to Question 10 about the characteristics of the materials in the post-training questionnaire survey are presented in Table 26. Similar to the reporting in the previous subsection about the students’ responses to the statements about their working processes, the presentation of the results for this aspect in Table 26 followed the same procedure.
Table 26. Summary of Students’ Responses to the Question about the Characteristics of the Materials (N=71)

<table>
<thead>
<tr>
<th>Question 10. Please indicate your level of agreement with how helpful each of the characteristics of the materials below was to your focusing and noticing of source use features in documented essays.</th>
<th>Disagree</th>
<th>Agree</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Multiple examples in the same kind of writings in the tool.</td>
<td>11.27%</td>
<td>88.73%</td>
<td>5.28</td>
<td>1.17</td>
</tr>
<tr>
<td>2. Charts displaying the distributions of citations across sub-types of each citation feature in the tool</td>
<td>19.72%</td>
<td>80.28%</td>
<td>5.18</td>
<td>1.37</td>
</tr>
<tr>
<td>3. Examples with color-coded citation features</td>
<td>28.17%</td>
<td>71.83%</td>
<td>4.97</td>
<td>1.49</td>
</tr>
<tr>
<td>4. A menu with search tabs</td>
<td>12.68%</td>
<td>87.33%</td>
<td>5.30</td>
<td>1.20</td>
</tr>
<tr>
<td>5. User-friendly interface design of the tool</td>
<td>15.50%</td>
<td>84.51%</td>
<td>5.32</td>
<td>1.28</td>
</tr>
<tr>
<td>6. The guided instruction (or steps) in the lesson</td>
<td>14.09%</td>
<td>85.92%</td>
<td>5.32</td>
<td>1.24</td>
</tr>
<tr>
<td>7. The questions or tasks in the lesson</td>
<td>22.86%</td>
<td>77.14%</td>
<td>4.99</td>
<td>1.44</td>
</tr>
<tr>
<td>8. The provision of answer keys with explicit explanations</td>
<td>19.73%</td>
<td>80.29%</td>
<td>5.25</td>
<td>1.34</td>
</tr>
</tbody>
</table>

The first column presents the question which asks the students to indicate their level of agreement on a 6 point Likert-scale about how each of the eight given characteristics of the materials helped them with focusing on and noticing of the features of source use. As shown in the table, 71.83% to 88.73% of the 71 students who took the survey agreed on the role of all the eight characteristics in their focusing on and noticing of features of source use. The two features that received the lowest number of agreement were the examples with color-coded citation features (#3) and the tasks or questions in the lesson (#7) although the highest number of these participants agreed that the provision of multiple examples in the same genre (#1) made them focus on and notice the features.
In addition to the qualitative results of stimulated recalls reported in the previous section, another qualitative analysis of the four students’ interview responses about which design characteristics helped them with noticing and focusing on the materials were conducted to examine this aspect of the *language learning potential*. As explained in the data analysis section, the ideational analysis, which examines types of processes in text, helps reveal the working processes involved in the learners’ learning experiences with the materials and the characteristics of the associated learning materials. Each of these process types are shown to display different sets of knowledge structures of the speakers based on the Knowledge Framework (Mohan, 1986, 2011). The analysis of relational processes in the interview responses was found appropriate because this process type was described to provide attribution and identification information for the materials on source use. Moreover, as explained in the Knowledge Framework (Mohan, 1986, 2011), the relational process type including the *be* and *have* verb is intended to construct the knowledge structures of description and classification. In other words, this process type allows a student to describe and identify characteristics of the materials involved in his or her learning processes in the interview response. As a result, the relational process type was selected to investigate which characteristics of the materials led to the students’ focusing and noticing of the source use features. The examination of relational processes and their neighboring participants and circumstances in the students’ responses about the characteristics of the materials afforded a close analysis of attributes of the materials that led to their focusing and noticing of source use.

Following the same procedure for the ideational analyses of stimulated recall transcripts, each main clause of an interview transcript was coded for types of processes. Then, all the coded
relational verbs were further examined in terms of their associated participants and circumstances to identify characteristics of the materials that were involved in the students’ focusing and noticing activities. Representative quotations from the students’ responses for each characteristic were selected to illustrate how each characteristic was associated with the students’ noticing and focusing activities.

The results of the ideational analysis on types of processes for the four interview responses are summarized in Table 27. As shown in the table, the relational processes were the most frequent coded type in all the students’ responses making up from 35% to 60% of the all coded processes in the four transcripts.

Table 27. Summary of Raw Counts and Percentages of Coded Processes in Four Students’ Interviews about Characteristics of the Materials

<table>
<thead>
<tr>
<th>Process Types &amp; Sub-categories</th>
<th>Taylor</th>
<th>Ketty</th>
<th>Nancy</th>
<th>Sam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral</td>
<td>0(0%)</td>
<td>6(7.2%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Existential</td>
<td>12(11%)</td>
<td>0(0%)</td>
<td>2(2.9%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action (Doing)</td>
<td>24(22%)</td>
<td>14(16.9%)</td>
<td>8(11.8%)</td>
<td>6(13.6%)</td>
</tr>
<tr>
<td>Event (Happening)</td>
<td>2(1.8%)</td>
<td>1(1.2%)</td>
<td>2(2.9%)</td>
<td>1(2.3%)</td>
</tr>
<tr>
<td>Sub-total</td>
<td>26(23.9%)</td>
<td>15(18%)</td>
<td>10(14.7%)</td>
<td>7(15.9%)</td>
</tr>
<tr>
<td>Mental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affection</td>
<td>7(6.4%)</td>
<td>4(4.8%)</td>
<td>4(5.9%)</td>
<td>4(9.1%)</td>
</tr>
<tr>
<td>Cognition</td>
<td>24(22%)</td>
<td>7(8.4%)</td>
<td>22(32.4%)</td>
<td>10(22.7%)</td>
</tr>
<tr>
<td>Perception</td>
<td>2(1.8%)</td>
<td>1(1.2%)</td>
<td>1(1.5%)</td>
<td>1(2.3%)</td>
</tr>
<tr>
<td>Sub-total</td>
<td>33(30%)</td>
<td>12(14.5%)</td>
<td>27(39.7%)</td>
<td>15(34%)</td>
</tr>
<tr>
<td>Relational</td>
<td>38(34.9%)</td>
<td>50(60%)</td>
<td>27(39.7%)</td>
<td>22(50%)</td>
</tr>
<tr>
<td>Verbal</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>2(2.9%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>83</td>
<td>68</td>
<td>44</td>
</tr>
</tbody>
</table>
The close analysis of the associated participants and circumstances of the coded relational processes also yielded a list of characteristics of the materials which were thought to lead to the students’ focusing on and noticing of source use features. Table 28 presents the results of this further analysis. The second column lists the identified characteristics of the two corresponding components of the materials (i.e., the Moodle-based lesson, and the web-based corpus tool). Representative quotations from the students’ responses are given in the third column to help understand how each characteristic was associated with the learners’ noticing and focusing activities. In these examples, coded relational verbs are both bolded and underlined.

Table 28. Summary of the Examination on the Relational Processes in the Student’s Interview about the Characteristics of the Materials

<table>
<thead>
<tr>
<th>Components of the Materials</th>
<th>Characteristics of the materials</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Moodle-based lesson</td>
<td>Instruction (pedagogy)</td>
<td>(13) I think what is interesting is the way that you put it, too. I find the way that you put the lesson and the tool next to each other guide us to learning, but also we have to take that extra step...So I feel like that’s more of a better way for me to retain. Because I have to go in and find what I’m looking for. (Betty)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(14) Yeah the lesson is interesting because it presents it for the first time when you’re making your best guess on, like for example what is position identification or credit, like what is this, then it shows you exactly what those are and it gives you examples and then you go back, and engages if you even learned anything. (Nancy)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(15) The materials are interactive. Yeah, both of them [the lesson and the tool]. They’re both interactive with you and they’re in a format that we’re very familiar with. (Betty)</td>
</tr>
</tbody>
</table>
Table 28 continued

<table>
<thead>
<tr>
<th>The web-based corpus tool</th>
<th>Bolded texts in directions and explanations</th>
<th>(16) It’s the bolded texts. The bold helps us, because that’s apparently all I read. (Ketty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organized menu for searching</td>
<td>(17) [The tool] It’s organized. It has a lot of information in it. (Ketty)</td>
<td></td>
</tr>
<tr>
<td>Easy to navigate</td>
<td>(18) Yeah it was helpful that they were grouped together and that kind of helped me recognize the pattern there. When I clicked on the tab for neutral, all of these examples were grouped together. (Nancy)</td>
<td></td>
</tr>
<tr>
<td>Examples</td>
<td>(19) It’s easy to navigate. (Ketty)</td>
<td></td>
</tr>
<tr>
<td>(20) (Laughter) I think I mean it was interesting because it presented a lot of examples of how to use sources. (Nancy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(21) The tool, I liked how when you clicked on the different things, it had examples of what a neutral citation would look like in the paper, because then you can kind of see a generalized idea of what it’s supposed to look like and then you can base your own writing off of that. (Taylor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphs – easy to identify information</td>
<td>(22) The graphs were awesome because it shows you, it’s like a hint. It’s like a hint, and I like that about it. To be like, &quot;Here’s how you do this, here’s an example of how you do it, and here’s why you should do it.” That was interesting. (Ketty)</td>
<td></td>
</tr>
<tr>
<td>A useful and thought-stimulating learning tool to answer questions in the lesson and explore source use features</td>
<td>(23) The visuals were nice, it was easy right off the bat what was most used, so I liked that. (Nancy)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(24) For the questions, I like how it tells you to go and reference a tool. Referencing the tool, that was a big help. Just looking at the way it’s structured, how certain things are in blue, how you’re supposed to focus on. That’s nice because there’s a lot going on in the project in general, and it helps you focus. (Taylor)</td>
<td></td>
</tr>
</tbody>
</table>
Table 28 continued

(25) Yes, working with the tool was great because this gave me something to think about and helped me come up with strategies instead of thinking about how crappy it’s going to be that I have to write this essay. (Ketty)

*Note:* Relational verbs are both bolded and underlined.

As shown in the table, multiple characteristics of the materials were identified to help the students focus on and notice features of source use. Four major characteristics of the Moodle-based lesson were reported by the students to draw their attention and facilitate their noticing of the features. These were the instructional or pedagogical approach, the interactive and user-friendly format, and the bolded texts in the directions and explanations. As illustrated in the given excerpts, the students also gave a brief explanation about how each of the features facilitated their focusing and noticing activities. For example, Excerpts 13 and 14 showed that the students found the pedagogical approach of the lesson effective as it enabled them to understand and retain the content of the lesson better.

Similarly, the corpus-based tool, the second component of the teaching materials was found to have five characteristics that led to the students’ focusing and noticing of source use features. They included the organized search menu of source use features, the navigation, the provision of ample examples in the target genre and graphs of feature frequencies, and its value as a self-reference tool for the lesson. For example, the students (Excerpts 24 and 25) indicated that working with the tool stimulated their thinking processes so that they would focus more on the features and notice their use in the target text type more effectively. Excerpt 24 clearly shows the student’s positive perception of how the tool facilitated her focusing and noticing processes...
as she was working to look for the answers to the questions in the lesson. In Excerpt 25, the student reported that the materials not only made her think more about different features of source use, but also directed her focus on specific things of source use features.

Overall, the qualitative results corroborated the quantitative ones. Both types of results revealed the same characteristics of the materials, which were perceived to lead to the students’ focusing on and noticing of source use features. Moreover, the results of the qualitative analysis allowed us to see how each of the material characteristics affected their focusing and noticing activities. Further investigation into the learning gains of the students who used the materials was conducted to gain an insight into the importance of the characteristics of the materials in their learning gains. The next section continues to present the results of the investigation.

5.2. The Students’ Learning Gains after Working with the Materials on Source Use

This section presents the results of the investigation into the students’ learning gains after working with the materials on source use. Their learning gains were assessed through qualitative and quantitative data in terms of knowledge about form and function of source use, metalinguistic awareness about source use, and revision strategies to improve the first drafts of documented essays.

5.2.2. Improvements in the Knowledge about Form and Function of Source Use

To assess if there existed any changes in the knowledge about form and function of source use after working with the materials, two types of findings were used. The quantitative results came from the comparative analysis of the 68 students’ performances on the pre- and post-tests on source use, and the quantitative analysis of the 71 students’ responses to the seven 6-point Likert-scale statements about the learning gains in knowledge about source use in the post-
training questionnaire survey. The qualitative results originated from the ideational analysis of the mental and material processes in the student’s response to the interview question about their perceptions of learning gains after working with the materials. To support the findings of that ideational analysis, some representative examples were chosen from the collection of 100 students’ responses to the open-ended questions about form and function of source use in the Moodle-based lesson.

The first source of quantitative results was the comparative analysis of the students’ performance on the pre- and post-tests on source use which were given before and after their completion of the materials respectively. Both tests followed the same format and specification. These two tests were evaluated by the instructors before their official use to check if their contents were consistent with the criteria of source use quality in the teaching materials and the learning outcomes of the training. Each of the final pre- and post-tests has a total of seven items with the maximum score of 7.

Based on the performances of 68 participants who completed these two tests and Carr’s (2010) instructions on examining the reliability of criterion-referenced tests, the score dependability analyses of the two tests showed that the two tests had very low score dependability coefficients (0.27 for the pre-test, and 0.24 for the post-test). These score dependability coefficients indicate that the test results were not sufficiently consistent in assessing whether the students learned the features of source use or not. These low dependability scores could be explained by several reasons. First, as reported in the data collection procedure, most of the instructors assigned the tests as an optional activity for the students. In addition, as the instructors who used the tests in their classes reported, the test scores were not counted.
towards the students’ course grades. Therefore, the students may have had a low motivation to complete these tests. Secondly, due to the constraint of time and the number of activities involved in the implementation of the materials, the number of test items in these two tests was very limited. Moreover, although the tests were designed to last for 30 minutes, the analysis of the students’ Moodle-based logs showed that each of them spent an average of 17 minutes and 13 seconds and 14 minutes and 30 seconds on the pre-test and the post-test respectively. This short time spent on the tests might have negatively affected the score dependability indices of these two tests. However, as these two tests were evaluated by the instructors before being delivered to match up with the goals of the materials, these two tests were found to meet the specific criteria given as the learning goals of the materials. As a result, the quantitative results of the students’ performances on these two tests are presented here.

To examine any change in test scores about source use before and after the training, a close look at the descriptive statistical results of the students’ performances on these two tests was first taken for comparison. The descriptive statistics of the students’ results on the pre- and post-tests on source use are presented in Table 29.

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th></th>
<th>Post-test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Form</td>
<td>Function</td>
<td>Total</td>
<td>Form</td>
</tr>
<tr>
<td>Mean</td>
<td>0.43</td>
<td>2.21</td>
<td>2.63</td>
<td>0.47</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.06</td>
<td>0.16</td>
<td>0.19</td>
<td>0.06</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.50</td>
<td>1.36</td>
<td>1.54</td>
<td>0.50</td>
</tr>
<tr>
<td>Sample Variance</td>
<td>0.25</td>
<td>1.84</td>
<td>2.39</td>
<td>0.25</td>
</tr>
<tr>
<td>Minimum</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maximum</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>
For each test, there are two component scores on form and function of source use and a total score of these two components. As shown in the second row of Table 29, there was a slight increase in the mean total score on source use from 2.63 to 3.16 after the training. In addition, the analyses of the Moodle-based records of these test-takers also show that the average time spent on the post-test was three minutes shorter than that on the pre-test. These two results suggest that the post-test took less time, and its average performance was a little better than that of the pre-test.

Furthermore, a closer look at the component scores of the two tests in the second row of the table found that the increase in the average post-test total score compared to the pre-test total score was mostly made up by the increase in the students’ average sub-score on rhetorical functions. In addition, while none of the students got the maximum sub-score on the rhetorical functions questions in the pre-test, several of them attained the top score in the post-test. The increase in the average sub-score in rhetorical functions on the post-test could be explained by referring to the results of the students’ working processes with the materials reported in the previous section. Accordingly, the students were found to use the tool to undertake the greater number of searches on rhetorical functions on average.

A statistical test was conducted to check whether the change in the students’ performance on the tests was statistically significant. The examination of the histograms of the test scores of these two tests showed that they represented a normal distribution. Moreover, the sample size of the two tests was greater than 20. Therefore, a paired sample t-test was chosen to check if there was any significant change in the students’ test scores after the training (Field, 2013; Larson Hall, 2015). Unfortunately, the t-test value indicated that there was no significant change in the
scores for the pre-training test ($M_{\text{pre-test}} = 2.63$ vs. $SD = 1.54$) and the post-training questionnaire ($M_{\text{post-test}} = 3.16$ vs. $SD = 1.64$); $t(67) = -2.85$, $p = 0.005$). Hence, we could not reject the null hypothesis that the change in test score about source use before and after the training was due to chance.

Additional quantitative analyses of the students’ responses to the 6-point Likert-scale statements about their perceptions of learning gains after the training provided positive evidence of the effects of the training. Table 30 presents the results of the analyses on the seven statements in Question 6 of the post-training questionnaire survey. The first column of the table presents the seven statements which describe learning gains in terms of knowledge about the two major aspects of source use which are forms (e.g., language resources, reporting verbs) and rhetorical functions, and one statement about their knowledge about revising their first drafts. The next two columns display the percentages of participants which were grouped into two major categories of Disagree (i.e., Strongly Disagree, Disagree, Slightly Disagree) and Agree (i.e., Strongly Agree, Agree, Slightly Agree). The fourth column shows the mean score on the scale of 1 to 6 where they indicate Strongly Disagree and Strongly Disagree respectively.

Table 30. Summary of Students’ Responses to the Statements about Learning Gains ($N=71$)

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Question 6</th>
<th>Disagree</th>
<th>Agree</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gains in Knowledge about Source Use</td>
<td>1. I learned different features of citations that I did not know before.</td>
<td>9.86%</td>
<td>90.15%</td>
<td>4.54</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>2. I learned additional language resources to incorporate external sources into my writing.</td>
<td>19.73%</td>
<td>80.28%</td>
<td>4.27</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>3. I knew different ways to incorporate an external source into my writing.</td>
<td>22.22%</td>
<td>77.77%</td>
<td>4.21</td>
<td>1.04</td>
</tr>
<tr>
<td>Gains in Knowledge about Revision</td>
<td>4. I learned how to use reporting verbs to improve my source use in my writing.</td>
<td>18.32%</td>
<td>81.69%</td>
<td>4.13</td>
<td>1.01</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------</td>
<td>--------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>6. I learned different functions of citations in the documented essay.</td>
<td>18.31%</td>
<td>81.69%</td>
<td>4.18</td>
<td>1.11</td>
</tr>
<tr>
<td></td>
<td>8. I learned how to form citing sentences with different purposes in the documented essay.</td>
<td>19.72%</td>
<td>80.28%</td>
<td>4.24</td>
<td>1.20</td>
</tr>
<tr>
<td></td>
<td>9. Overall, the materials helped me learn how to integrate sources in the documented essay effectively.</td>
<td>15.49%</td>
<td>84.50%</td>
<td>4.32</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>10. After taking the lesson, I still did not know what I could do to improve source use in my documented essay first draft.</td>
<td>59.16%</td>
<td>40.85%</td>
<td>3.27</td>
<td>1.25</td>
</tr>
</tbody>
</table>

As seen in the second and third columns of the table, most of the students displayed a moderate agreement with each of the first seven statements about the knowledge gains in forms and functions of source use. For example, up to 90.15% of the participants agreed that they learned new features of source use that they had not known before. The mean score on the scale of 1 to 6 also indicated that the statement received a moderate level of agreement from the students. Congruent with the results on the increase in the average post-test score on rhetorical functions, the majority of the students (81.69% and 80.28%) perceived that they were able to learn about different functions of citations and how to use them for different purposes.
To triangulate the quantitative results on learning gains of the students after the training, the qualitative analyses on the students’ interview responses about their perceptions of their learning gains and their actual open-ended responses in the lesson and the homework journal were conducted. As described in the data analysis section, the first qualitative finding came from the ideational analysis of the material and mental processes in the students’ responses to the interview question about their learning gains in form and function of source use. As the target learning gain concerns any changes in the students’ knowledge about using sources, the ideational analysis on process types in the students’ interview responses was found suitable because the processes in their responses were explained to help construct different sets of knowledge structures in their learning.

Taking the same procedure for the ideational analysis of processes in the previous sections, I examined both the participants and circumstances of the coded material and mental activities for the categorizing and theming stage. The stage was intended to see if there emerged any themes from the students’ responses in terms of learning gains in knowledge about source use. Then, a representative quote was selected from the students’ interview responses to illustrate each of the identified themes.

The results of the process coding stage for the four interview responses about learning gains are summarized in Table 31. Most of the coded verbs fell into the action and cognition categories ranging from 50% to 71% out of the total coded verbs in each of the four transcripts. This high dominance of these two verb types in the students’ responses indicated the involvement of action and cognition activities in their learning gain reports.
Table 31. Summary of Raw Counts and Percentages of Coded Processes in Four Students’ Interviews about Learning Gains

<table>
<thead>
<tr>
<th>Process Types &amp; Sub-categories</th>
<th>Taylor</th>
<th>Ketty</th>
<th>Nancy</th>
<th>Sam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Existential</td>
<td>10(7.7%)</td>
<td>7(4.2%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action (Doing)</td>
<td>46(35.4%)</td>
<td>33(19.8%)</td>
<td>22(28.6%)</td>
<td>24(32.4%)</td>
</tr>
<tr>
<td>Event (Happening)</td>
<td>1(0.8%)</td>
<td>5(3.0%)</td>
<td>1(1.3%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Sub-total</td>
<td>47(36.2%)</td>
<td>38(22.8%)</td>
<td>23(29.9%)</td>
<td>24(32.4%)</td>
</tr>
<tr>
<td>Mental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affection</td>
<td>7(5.4%)</td>
<td>9(5.4%)</td>
<td>6(7.8%)</td>
<td>5(6.8%)</td>
</tr>
<tr>
<td>Cognition</td>
<td>28(21.5%)</td>
<td>41(24.6%)</td>
<td>22(28.6%)</td>
<td>15(20.3%)</td>
</tr>
<tr>
<td>Perception</td>
<td>6(4.6%)</td>
<td>8(4.8%)</td>
<td>5(6.5%)</td>
<td>6(8.1%)</td>
</tr>
<tr>
<td>Sub-total</td>
<td>41(31.5%)</td>
<td>59(35.4%)</td>
<td>33(42.9%)</td>
<td>26(35.1%)</td>
</tr>
<tr>
<td>Relational</td>
<td>32(24.6%)</td>
<td>61(36.5%)</td>
<td>21(27%)</td>
<td>24(32.4%)</td>
</tr>
<tr>
<td>Verbal</td>
<td>0(0%)</td>
<td>1(0.6%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Total</td>
<td>130(100%)</td>
<td>167(100%)</td>
<td>77(100%)</td>
<td>74(100%)</td>
</tr>
</tbody>
</table>

The further examination of these identified *material* and *mental* verbs and their associated participants and circumstances yielded four important themes that are directly relevant to learning gains in knowledge about form and function of source use, which are presented in Table 32. As shown in the table, the four themes generated from the students’ responses about learning gains were categorized into two major types of knowledge about source use which are form and function. For each theme, a representative excerpt was also given to illustrate it. In these excerpts, the material and mental verbs are italicized and bolded respectively.
Table 32. Summary of the Material and Mental Processes in the Student Interview Responses about Learning Gains in Knowledge about Source Use

<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge about Form</td>
<td>(26) I didn’t really know, like the term for reporting verbs, like I was not familiar with that. I didn’t know about that so it was interesting and it’s something that stuck with me. (Nancy)</td>
</tr>
<tr>
<td>1. Knowing and understanding different</td>
<td>(27) I feel like definitely I noticed and became more familiar with every topic (source use). If that makes sense. Because walking into this, I couldn’t tell you what most of this means. Walking away from it, I can see those words and know what they were linked to… I mean, obviously I learned something, I know these words now. I know what they relate to. I can even give an example for (some of them). (Ketty)</td>
</tr>
<tr>
<td>features of source use</td>
<td>(28) I feel like, part of me learned just more about what they [A graded essays] commonly use. You see the patterns that they’re doing, seeing that they’re using parenthetical a lot more using position support a lot more, and they did a lot of research. (Sam)</td>
</tr>
<tr>
<td>2. Knowing different choices in incorporating</td>
<td>(29) This [the lesson] gives me ways to be like “Hey, you can do something different with it. You can put different words in.” I mean I now know that there’s different ways to make your paper more exciting ...(Ketty)</td>
</tr>
<tr>
<td>sources</td>
<td>(30) Just learned how to incorporate different citations. The tool showed us different ways that they have been used before, so we kind of recognize that that is the specific way of doing it and not just writing, I guess… That also helped me try to stir away from not using quotations so much because that’s kind of what was drilled into me in high school, as being the easiest way to write papers, I guess. (Taylor)</td>
</tr>
<tr>
<td></td>
<td>(31) Yeah, I learned that looking at examples were helpful. They just explain a bunch of the different types of ways you can integrate sources. (Sam)</td>
</tr>
</tbody>
</table>
Table 32 continued

<table>
<thead>
<tr>
<th>Knowledge about Function</th>
<th>Note: Material processes are in italics, and mental processes are in bold.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Understanding the effects of form selection in source use on writing quality</td>
<td>(32) I always <em>used</em> the parenthetical citations for most things, and I also never <em>thought</em> about how that can break the flow of your paper, so I guess that is another thing that I learned. (Nancy)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knowledge about Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Knowing about different rhetorical functions of source use</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>5. Understanding the importance of rhetorical functions of source use</td>
</tr>
</tbody>
</table>

In terms of form, the students’ verbal reports show that they gained more knowledge and an understanding of different features of source use. They became aware of different ways to integrate a source into their writing. Importantly, such knowledge helped them understand the effects of their selection of forms on the writing quality. As the excerpts illustrate, the students admitted that these source use features were new to them (Excerpt 27), but they became more familiar and were able to talk about them after the training (Excerpt 28), including the patterns of using them in the A graded papers (Excerpt 29). Moreover, Excerpts 30 to 32 indicate that the students raised more awareness about different choices in integrating sources by examining the
examples in the tool. Importantly, such knowledge about features of source use enabled a student to see how a selection of source use could influence the writing quality rhetorically (see Excerpt 33).

Similarly, the students reported that they learned more about rhetorical functions of source use and gained a better understanding of their importance in one’s writing quality. Excerpt 33 and Excerpt 34 show that the students knew more and understood rhetorical functions of source use after working with the materials. Moreover, such understanding even helped them become more aware of their own practice of using external sources in their writing. For example, Excerpt 35 indicates that the student raised more awareness about her purpose when integrating a source. In other words, knowledge and awareness about rhetorical functions of citation changed her way of using sources in her writing.

The examination of the collection of the students’ works on the materials yielded several artifacts that could illustrate the students’ perceived learning gains in knowledge about forms and functions of source use as reported above. Below are two excerpts from the students’ responses to the two open-ended questions which asked them to explain why such features of source use appear in the A graded essays. These questions were a part of the Moodle-based lesson, and were given after the students worked with the web-based corpus tool and answered several multiple-choice questions that helped them attend to the features of source use in the tool. In these excerpts, the students’ explanations about features of source use were italicized.

(36) The patterns exist because the A graded paper writers used the citing sentence types that kept a conversation going. They used parenthetical citation as well as paraphrase and summary because it is the easiest transition for the reader to gather evidence supporting the main points of the essay. Neutral verbs were used because it allows the author to
make claims without taking sides into an argument or stance. Verbal verbs were used the most because it allows the reader to get the notation of an action being performed to obtain the evidence or source given. Position support was most strongly used because it helps the author denote support for his or her argument and validate their claims. (Stacie, Response in the Moodle-based lesson with relevant explanations in italics) 

(37) Position support is obviously important, as the idea of these essays is to put forth an argument and support it with research. Comparing and contrasting viewpoints can be useful if one intends to address a potential rebuttal, or to display two sides of an argument before delving into which side is supported by your argument. Context establishment is important if the reader of your essay is not familiar with the source material, or if you need to provide a setting/background to your argument. The use of evaluation allows a student to make an essay more interesting/narratively engaging, however it can cause the student to take a side on an argument which may not be appropriate. Credit can be useful to provide a functional definition of important terms before diving into an idea in your essay. Knowledge building allows the student to guide the reader through their reasoning. (Zach, Response in the Moodle-based lesson with relevant explanations in italics) 

As can be seen, the first excerpt illustrates how well the student learned about forms and patterns of source use, and the second one specifically exemplifies how insightfully the student understood rhetorical functions of source use. In the first excerpt, the student pointed out the patterns of using source use features in the A graded papers (e.g., citation types, reporting verbs) and then explained them. For example, she recognized that the use of neutral reporting verbs would allow the writer to invite alternative perspectives to the reported proposition. These explanations thus show the students’ gain in understanding these features of source use. Moreover, the student in the second excerpt demonstrated an in-depth understanding of rhetorical functions of source use as he could provide not only an explanation of each one, but
also an evaluation of its importance in the target paper type that they were writing (i.e., documented essays).

Overall, both the quantitative and qualitative findings showed to some extent the students’ learning gains in their knowledge about the features of source use that they interacted with when working with the materials. However, there was no significant change in their test scores on their knowledge about source use after the training. This lack of statistical significance in the change could be explained due to the limited time of the intervention and the average duration of time that the students spent on the materials. On the other hand, both the quantitative survey analyses on the students’ perceptions of their learning gains in knowledge about source use and the qualitative analyses of the four students’ interview responses about their learning gains supported the argument that the training was beneficial to the students’ learning of form and function in source use. The next subsection continues to examine any learning gain in metalinguistic and pragmatic awareness about source use.

5.2.3. Improvements in the Metalinguistic and Pragmatic Awareness about Source Use

The evidence about the learners’ gain in metalinguistic and pragmatic awareness about source use was based on the findings from both quantitative and qualitative analyses. The quantitative results on the learner’s gain in metalinguistic and pragmatic awareness about source use came from the quantitative analysis of the students’ responses to the eight 6-point Likert scale statements about their source use skills in both the pre-training and post-training questionnaire surveys. These statements were developed to collect the students’ perceptions of their awareness about different aspects involved in incorporating external sources into one’s writing such as language choices and rhetorical functions. Four of them were negatively stated,
and the responses were then reversely converted on the 6-point scale before calculating the total metalinguistic and pragmatic awareness score for each student, with a high score indicating a strong metalinguistic and pragmatic awareness about source use in academic writing including documented essays. Descriptive statistics and a paired sample t-test of the metalinguistic and pragmatic scores before and after the training were reported. As with the data analysis approach presented in the previous section, the qualitative analysis was conducted using the same procedure on the four students’ interview responses about their learning gains after the training. Major themes generated from the examination of the coded material and mental verbs in the four interview transcripts were then reported as evidence of the students’ learning gain in metalinguistic and pragmatic awareness about source use.

For the metalinguistic and pragmatic awareness questionnaire, the Cronbach’s alpha analyses of the 65 students’ responses to these eight statements in both the pre- and the post-training questionnaires showed that the metalinguistic and pragmatic awareness questionnaire about source use was sufficiently reliable (0.82 for the pre-training questionnaire and 0.73 for the post-training questionnaire). A close look at the descriptive statistical results of these two scores was undertaken. Table 33 summarizes the descriptive statistical results of the students’ scores on the questionnaire survey about the metalinguistic and pragmatic awareness of source use before and after the training.
Table 33. Summary of the Students’ Scores on the Metalinguistic and Pragmatic Awareness Questionnaire on Source Use before and after the Training (N=64)

<table>
<thead>
<tr>
<th></th>
<th>Pre-Training</th>
<th>Post-training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>29.82</td>
<td>31.25</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.73</td>
<td>0.77</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5.87</td>
<td>6.24</td>
</tr>
<tr>
<td>Sample Variance</td>
<td>34.46</td>
<td>38.87</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.65</td>
<td>8.81</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.24</td>
<td>-1.98</td>
</tr>
<tr>
<td>Range</td>
<td>26</td>
<td>41</td>
</tr>
<tr>
<td>Possible Minimum</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Possible Maximum</td>
<td>48</td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 33, the descriptive statistical results showed a slight increase of 1.43 in the mean score of the metalinguistic and pragmatic awareness about source use. However, as this increase was within one standard deviation, it might be due to the error of the measurement. A further statistical test was conducted to examine if this increase was due to chance or not.

The examination of the histograms and characteristics of the pre-training and post-training scores on metalinguistic and pragmatic awareness about source use showed that these two scores represented a normal distribution; therefore, a paired one sample $t$-test, which compared the means of the pre- and post-training scores, was chosen to investigate if there was any significant change in their metalinguistic and pragmatic awareness after training. The $t$-test result showed that there was no significant differences in the scores for the pre-training questionnaire ($M_{\text{pre-training}}=29.82$ vs. $SD=5.87$) and the post-training questionnaire ($M_{\text{post-training}}=31.25$ vs. $SD=6.24$); $t(63)=-1.56, p>0.005$). Therefore, we could not reject the null hypothesis that the change in metalinguistic and pragmatic awareness before and after the training was due to chance. This result indicates that the positive effect of the training on the students’ gain in the
score in metalinguistic and pragmatic awareness about source use in academic writing and documented essays was inconclusive. The descriptive statistical results of the students’ responses to the individual statements in the two questionnaires before and after the training are summarized in Table 34.

Table 34. Summary of Students’ Responses to the 6-point Likert-scale Statements about Metalinguistic and Pragmatic Awareness about Source Use (N=64)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Pre-training Survey</th>
<th>Post-training Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>1. I know various ways to integrate external sources into my writing.</td>
<td>19%</td>
<td>81%</td>
</tr>
<tr>
<td>2. I know how to use external sources in my writing for different rhetorical functions or purposes.</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>3. I don’t spend time thinking about how to incorporate external sources into my writing when I write.</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>4. I think about the rhetorical function of each citing sentence when I incorporate an external source in my paper.</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>5. I don’t know many reporting verbs to integrate external sources in my writing effectively.</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Table 3 continued

<table>
<thead>
<tr>
<th>Statement</th>
<th>19%</th>
<th>81%</th>
<th>4.19</th>
<th>0.90</th>
<th>33%</th>
<th>67%</th>
<th>3.97</th>
<th>1.10</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. I carefully select which verb to use to incorporate an external source in my writing accurately.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I do not consider contextual situations of my writings when integrating external sources into my writings.</td>
<td>63%</td>
<td>38%</td>
<td>3.11</td>
<td>1.06</td>
<td>70%</td>
<td>30%</td>
<td>3.08</td>
<td>1.09</td>
</tr>
<tr>
<td>8. I am unsure about how to integrate sources to serve the purpose of the documented essay assignment effectively.</td>
<td>50%</td>
<td>50%</td>
<td>3.28</td>
<td>1.30</td>
<td>61%</td>
<td>39%</td>
<td>3.16</td>
<td>1.20</td>
</tr>
</tbody>
</table>

While there was little difference in the level of agreement with the statements about learners’ gain in the awareness about form in source use before and after the training (Statements #1, #2, #5) or even a decrease in their awareness about selecting reporting verbs after the training (Statement #6), the variation was greater towards the statements about the awareness about rhetorical functions of source use. For example, while only 47% of the respondents disagreed that they did not spend time thinking about how to incorporate external sources in their writing (Statement #3), up to 63% respondents disagreed with that statement after the training. Similarly, an increase of 28% of the respondents after the training agreed with the statement that they think more about the rhetorical function of each citing sentence (Statement #4) when writing (50% vs. 78%). A slight increase in the number of the respondents after the training was also observed to agree with the statements about learning gains in awareness about the use of external sources and the writing context (Statements #7 and #8).
Based on the same procedure reported in the previous section, the ideational analyses of the material and mental processes in the students’ interview responses about their learning gains in metalinguistic and pragmatic awareness yielded three major related themes after the training. The results of the analyses are presented in Table 35. In the table, the three themes are given in the first column with their corresponding illustrative excerpts from the students’ responses in the second column. In these excerpts, the material and mental verbs are in italics and bold respectively.

Table 35. Summary of the Examination on the Material and Mental Processes in the Four Students’ Interview Responses about Learning Gains in Awareness about Source Use

<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Being aware of the rhetorical effects of choices in source use on the writing</td>
<td>(38) Reading this, I’m thinking, ‘Oh, well, if I say ... For instance, this one where it says, &quot;Webster dictionary defines addiction as a strong and harmful need to ...&quot; yeah. This sounds so much more interesting than a quote, &quot;Addiction is a strong and harmful need to regularly have something or do something.&quot; (Webster, 2016). That sounds so much better than what I would have done in the past, that would be the quotes.’ (Ketty)</td>
</tr>
<tr>
<td></td>
<td>(39) I got more aware of variety in writing. Yeah, variety is a big thing. I only used sources for position support, but you can use it or have it done in so many ways. So it’s not...You don’t always have to use a source to say this is another reason why my argument...you can use them for different things like evaluation, comparison to make your writing more interesting, I guess. (Nancy)</td>
</tr>
<tr>
<td>2. Being aware of the role of the audience in source use</td>
<td>(40) They (citation types) seem close to me, but they do different things, and I think that’s important to know. The parenthetical and non-parenthetical meaning like there’s different ways to write what you’re writing. So you should pick which is the best for the audience in the moment that you’re writing. You know? (Ketty)</td>
</tr>
<tr>
<td>3. Being aware of the purpose of the assignment in source use</td>
<td>(41) It [the lesson] definitely made me think more about the connection to the purpose of the assignment, because for the paper we had to use outside research to complete the assignment...Especially when having to explain why certain ways are more popular in the A graded papers. (Sam)</td>
</tr>
</tbody>
</table>

Note. Material processes are in italics, and mental processes are in bold.
The first theme indicates that the students became more aware of the effects of their choices, when integrating external sources, on their writing quality. Excerpt 38 illustrates this theme well as the student recognized that the way of integrating sources in the example would made the writing more interesting and engaging than with a simple quotation as she used to do. The second and third themes reveal the students’ increased awareness about the choice of source use and the writing context, which involves the consideration of the audience and the purpose of the writing task, specifically the documented essay assignment. For example, Excerpt 40 illustrates how a student became aware of different methods for incorporating an external source and the importance of her audience in selecting an appropriate method.

The comparison of the quantitative and qualitative findings about the students’ learning gains after the training found that to some degree working with the materials helped raise the learners’ metalinguistic and pragmatic awareness about source use. Although the quantitative analyses of the students’ responses to the post-training survey displayed their positive perception of learning gains in their metalinguistic and pragmatic awareness about source use, the quantitative results of the scores of metalinguistic and pragmatic awareness about source use were inconclusive. Furthermore, the qualitative analyses yielded three major themes supporting the students’ learning gains in awareness about source use after the training. Overall, the students became more aware of various choices in terms of forms (e.g., language resources, citation types) in incorporating an external source in their writing, and of the rhetorical effects of their selection decision on their writing quality. In addition, they became more critical about the purpose of incorporating a source in their writing. Importantly, they appeared to become more aware about the writing context including the audience and the purpose of the writing assignment
when deciding how to incorporate an external source. Because the training on source use was designed to help the students revise their first drafts of documented essays in terms of source use, a further exploration of whether the students were able to learn new strategies to revise their drafts was critical. The next subsection presents the results of this exploration.

5.2.4. Learning How to Revise the Papers in terms of Source Use

To examine if the students could generate any strategies to revise their first drafts, two types of data analyses were employed. The quantitative evidence came from the analysis of the 71 students’ responses to the 6-point Likert-scale statement in Question 6 of the post-training questionnaire (see Table ). This question asks to what degree a student agrees or disagrees with the statement about the ability to revise source use in the first drafts after the training. An additional statistical analysis was conducted on the source use quality scores of 41 first drafts and revised drafts of documented essays submitted before and after the training to measure if there was any change in the source use quality of the revised papers after the training. To prepare for this quantitative analysis, all the letter grades on the source use quality of the collected papers were converted into a scale of 1-4 where 1 and 4 represent the D and A grades respectively. These numeric scores were then used to run descriptive statistical analyses and inferential statistical analyses as described in the data analysis. The qualitative results came from the ideational analysis of the material and mental processes in the four students’ interview response about their learning gains. To support the qualitative results, representative artifacts from the collection of 100 students’ journals on source use, where they had to compare their own practice of source use in their first drafts and the patterns observed in the A graded papers from the training, were selected to supplement the findings of the ideational analysis on process types.
As shown in the last row of Table 36, only 59.16% of the students who took the post-training survey disagreed with the statement that they still did not know what to do to improve source use in the first drafts of documented essays. Furthermore, the mean score on the scale from 1 to 6 indicated that the students only showed a slight disagreement level with the statement. Moreover, the descriptive statistical analyses of the source use quality scores before and after training provided further evidence of the students’ gains in revision strategies for source use. The results are summarized in Table 36 below.

Table 36. Summary of the Students’ Grades on First and Revised Drafts before and after the Training (N=41)

<table>
<thead>
<tr>
<th></th>
<th>First Drafts</th>
<th>Revised Drafts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.05</td>
<td>2.91</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.12</td>
<td>0.12</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.77</td>
<td>0.81</td>
</tr>
<tr>
<td>Sample Variance</td>
<td>0.59</td>
<td>0.67</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-1.29</td>
<td>-0.16</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.08</td>
<td>-0.43</td>
</tr>
<tr>
<td>Min</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Max</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Range</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

As shown in the table, there was an increase in the mean score of the source use quality in the revised drafts compared to that in the first drafts. Specifically, while the average score of the 41 first drafts was a C letter grade, that of the revised drafts was about a B letter grade. Noticeably, while the highest score of the first drafts was a B, that of the revised drafts was an A. These two major differences reflected some changes in the source use quality in the students’ papers after the training.
A further statistical test was conducted to examine if this increase in the source use quality mean score after the training was due to chance or not. As the number of the papers before and after the training was greater than 20, a paired one sample $t$-test, which compared the source quality mean scores of the first and revised drafts, was chosen to investigate if there was any significant change. However, the $t$-test result showed that there was no significant change in the source use quality scores for the drafts before the training ($M_{\text{first drafts}} = 2.05$ vs. $SD = 0.77$) and the drafts after the training ($M_{\text{revised drafts}} = 2.91$ vs. $SD = 0.81$); $t(40) = -7.5, p>0.005$). Therefore, we could not reject the null hypothesis that the change in source use quality of the drafts before and after the training was due to chance. This result indicated that the positive effect of the training on the students’ gain in revision strategies for source use in documented essays was inconclusive.

The qualitative analysis of the student’s material and mental processes in their responses about the learning gains also produced evidence showing the learners’ ability to revise their papers after the training. It should be noted that the qualitative result was a partial outcome of the analyses of the four students’ responses about learning gains that are presented in the previous two sections. The results of this analysis are summarized in Table 37 below.
Table 37. Summary of the Examination on the Material and Mental Processes in the Students’ Interview Responses about Learning Gains in Strategies for Revision

<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Checking and correcting wrong forms in source use</td>
<td>(42) Yeah. This is actually really silly, but after I read this I <strong>realized</strong> that I put all of my periods inside of the parentheses instead of outside, so I <strong>did fix</strong> that when I saw they needed it differently, which is silly, but it was good to know and see that was wrong, and I <strong>went back and fixed</strong> it in my paper. (Ketty)</td>
</tr>
<tr>
<td></td>
<td>(43) Also, I’m going to check if they cite sources correctly, for example, when they’re pulling direct quotes and stuff like that. I’m pretty sure I saw a direct quote in the paper and I know people <strong>don’t</strong> really <strong>know</strong> how to cite that correctly. (Taylor)</td>
</tr>
<tr>
<td>2. Changing the practice of source use by following the patterns and methods noticed in the A graded papers</td>
<td>(44) I think the biggest thing for me is when I took this lesson, I <strong>realized</strong> that everything that I did had the lowest amount of people that did it and got a good grade. I was like, “Wow. Maybe I should go through and change some things.” I <strong>didn’t think</strong> that until I learned from the tool, and from the lesson. (Ketty)</td>
</tr>
<tr>
<td></td>
<td>(45) I’ll try to give a variety in my paper because an A paper has them all incorporated in there. I think that <strong>helps make</strong> a more complete paper, rather than just doing a simple quote or just paraphrases. I <strong>know</strong> that’s what I normally do, just those two, because they’re the easiest, but there’s definitely other ways to use them. (Taylor)</td>
</tr>
<tr>
<td></td>
<td>(46) I <strong>didn’t always introduce</strong> the author, like they did in the A grade paper, so I went back and kind of <strong>changed it up</strong> so I did <strong>mention</strong> the author, kind of <strong>showed</strong> the credibility about why they should be listened to, just added some of that in there to make it more official sounding. (Sam)</td>
</tr>
<tr>
<td>3. Thinking about choices when incorporating sources</td>
<td>(47) I’m definitely going to try to <strong>paraphrase</strong> more, like most of my writing is direct quotes and I think paraphrasing will really <strong>help</strong> me <strong>keep</strong> the flow of the paper a little bit more, maybe, and I’m going to <strong>stop</strong> with the parenthesis unless the authors need parenthesis. I’m going to <strong>work</strong> a lot on the flow of my paper and also <strong>look at</strong> what reporting verbs I used and like what they can be, like how many times I used them and how many times I need them. I’m going to <strong>look into</strong> that... I also try to <strong>use</strong> sources for different purposes, like not just use my sources just for argument support, but also use it instead as an example. (Nancy)</td>
</tr>
</tbody>
</table>
Table 37 continued

| 4. Using the tool as a reference resource | (48) I *knew* how to look at and analyze a source, and I *knew* how to write, but putting those 2 together was not easy for me. When I looked under textual integration, I *thought*, "Okay, well, that sounds like something that’s going to help me." I *went under* there and *thought of* ways doing this. (Ketty)

   (49) I don’t know I really *like* that tool, and I *used* it a few times while revising this paper. (Sam) |

*Note.* Material processes are in italics, and mental verbs are in bold.

As shown in the first column of the table, four themes emerged which showed the four aspects in the learners’ gains regarding how to revise their papers after the training. Each of the themes is illustrated with representative quotations from the students’ responses in the third column. In these examples, the material and mental verbs are in italics and in bold respectively. To supplement the four themes of the ideational analysis of the students’ responses about their gains in strategies to revise their papers after the training, representative artifacts from the collection of the students’ journals on source use were selected to illustrate each of these reported gains. All the propositions in each artifact that directly corresponds to the illustrated theme are in italics.

As shown in the second row of Table 37, the first revision strategy that students came up with after the training is checking and correcting forms of source use in their first drafts. For example, Excerpt 42 exemplifies how a student was able to notice and correct a concrete accuracy issue with citation forms in her writing. Similarly, the speaker of Except 43 also planned to check the form accuracy of citing sentences in her group’s paper. An artifact from the students’ journal collection further illustrates this reported revision strategy from the interviews.
(50) In my first draft, I forgot to put citation in either parentheses or brackets with citing sentences. I will add this information in my revised essay. I did some of author integrals and paraphrases in the first draft, but I think they are not enough. I will take care of them in the revised version. I hope my essay would be better after using more strategies.  
(Sandra, Journal on source use with relevant explanations in italics)

Supporting the identified theme about the revision on accuracy of source use, the artifact shows another accuracy issue with source use that the student recognized in her first draft. In other words, the training helped her become more aware of the need for giving credit when using a source in her paper.

The second revision strategy generated from the interviews is that the students became more aware of the specific areas in the use of sources in their papers that they needed to work on. This strategy originated from their noticing of gaps or differences between their own practice of source use and that in the A graded essays. For example, Excerpt 44 shows how the student’s noticing of the differences in her way of incorporating sources and the patterns in the A graded papers triggered her thinking for revising her paper. Additionally, Excerpts 45 and 46 illustrate that the students would change their ways of incorporating sources by following what they had observed from the source use practice in the A graded papers such as variety (Excerpt 45) and source integration (Excerpt 46). In Excerpt 46, the student was able to give the rationale for that change in his practice of source use which was to strengthen the credibility of the source and his own paper. Two excerpts from the students’ journal responses below further support this reported strategy.

(51) In my first draft, I did not follow the patterns in the A graded papers. I wasn’t really sure how to use citations so I didn’t use them much. I did have quite a bit of paraphrasing
of my sources in my paper. When I go back to revise it, I would like to use more Named-Author integral citations to give my paper more credibility… Based on the patterns in the A graded papers, I also think it would be helpful to have some direct quotations in my paper. Everything right now is coming from my own words, so I think the argument would be stronger if I had some words from cited authors in there as well. (Linda, Journal on source use with relevant explanations in italics)

(52) After completing the homework in class on Thursday and reviewing my paper, I found some interesting patterns. I tended to use the same style of citation again and again. I most commonly used citation as exemplification, or to give specific example of my point. After completing the lesson, I realized there are more ways to use citations. I will go back and rewrite my paper to include a few more types of citations including to compare and contrast ideas, to explain a concept, to present specific viewpoints, or to strengthen my argument. There is a huge variety of ways in which I can use citations, and if I can expand my use, I hope they can only make my paper better. (Alden, Journal on source use with relevant explanations in italics)

The two artifacts demonstrate that the students identified several patterns in their practice of source use in their first drafts after the training. Moreover, they also generated specific strategies to improve their drafts with explanations. For example, the speaker in Excerpt 51 expressed that he would use more named-author integral citations and quote words from original sources more in the revised paper to make his writing more credible. Similarly, the speaker in Excerpt 52 recognized his dominant use of external sources for the exemplification purpose (i.e., giving examples). Thus, he planned to use citing sentences for other rhetorical functions to make his writing more effective.

The third revision strategy is to think and make choices in source use when revising the papers. Students would consider more the rhetorical effects of their choice in source use on their
writing and the purpose of the assignment. Excerpt 48 illustrates how a student came up with clear directions about making choices in different aspects of source use to revise the first drafts such as the use of reporting verbs, the rhetorical functions. The student showed an awareness of the importance of such choices in the revised drafts. For instance, the choice of paraphrasing, which is a kind of textual integration where the writer reports an external source by using his or her own words, was explained to enhance her writing flow. Two artifacts from the collection of the students’ journals were found to corroborate this reported revision strategy from the interviews.

(53) Also, when I use the sources, I try to use neutral language, and neutral verbs to describe the sources. There are some sources that I need to change the language to better fit the assignment. I need to use other ways to integrate my sources, so that the paper will flow better and better fit the assignment instructions. For example, using citations with neutral words, as well as using rhetorical properties like knowledge building and credit to enhance the paper. (Samantha, Journal on source use with relevant explanations in italics)

(54) The topic for my documented essay is “Is the use of doublespeak ethical when communicating and delivering information?” I’ve selected four sources and after viewing the lessons, I managed to analyze the techniques I’ve used so far in my writing. I realized that I am using both parenthetical citing and non-parenthetical citing in my essay. But I realized my non-parenthetical citing might not be as effective in forms of word choice. I think I can improve this part if I can rephrase the sentences. I think I might use too much quotation in my essay when I am presenting different viewpoints on the issue. At first I thought that if I rephrase the points I might end up doing a summary. But I think it is possible if I use the right choice of words. For my essay, I thought it will be better if I can effective compare each source at the same time so that everything make sense and it is easier for readers to understand the whole thing since each of the sources use different
techniques in presenting their arguments and viewpoints. (Nathan, Journal on source use with relevant explanations in italics)

As shown in the two artifacts, the two students came up with specific directions to revise their papers and connected them to the context of their writing. In Excerpt 53, the student showed her high awareness about the purpose of the assignment in her decision to select appropriate words and rhetorical functions of citing sentences in the revised paper. In addition, the speaker in Excerpt 54 indicated the importance of the audience in his consideration of selecting words and functions in citing sentences when revising the draft.

The last strategy is the students’ option of using the web-based corpus tool as a supplementary resource on source use to revise the papers. As shown in Excerpt 48, this student found the tool helpful as she could think of ways to deal with her difficulty with source use by using the tool. Similarly, the student in Excerpt 49 admitted that he used the tool several times when revising his paper. An artifact from the collection of the students’ journals was found to illustrate this theme.

(55) The number one thing I can improve on when citing my sources is including in text citation in my paragraph. Right now, I haven’t cited my sources in a paragraph I have only cited the sources on a work cited page. Using in text citation will help my paper to be more reliable with source inclusion. One strategy I can use to help is looking at examples in the tool to see on how the people include sources in their text. This will be very beneficial. (Jones, Journal on source use with relevant explanations in italics)

Supporting the fourth theme from the interviews with the students, the student’s journal reflection on the first draft indicated her choice of using the tool for reference on ways to integrate external sources when revising the draft. The fact that the student did not have any in-text citations in her first draft suggests that she might not have been familiar with integrating
sources in academic writing. Therefore, she found referencing the examples in the tool useful to her as she could familiarize with the ways of source use that other students used in the A graded papers.

Overall, the quantitative and qualitative findings on the students’ learning gain in strategies to revise the papers show that the majority of the students were able to generate some strategies to revise source use in their submitted first drafts of documented essays. Although the statistical results on the change in the source quality grades of the essays before and after the training were inconclusive, the quantitative survey analyses indicated a moderate agreement level of the respondents about their ability to revise the first drafts in the post-training survey. The positive survey results were supported by the qualitative analyses of the four students’ interviews about their learning gains after the training. These qualitative analyses generated four themes or specific revision strategies that the students had after the training to revise their source use in the first drafts. Moreover, these themes were illustrated with several artifacts selected from the student journals which asked them to examine the source use quality in their first drafts and to identify specific areas for revision in the revised drafts. All the major findings of the language learning potential of the teaching materials are summarized in the next section.

5.3. Chapter Summary

This chapter presents the findings of the quantitative and qualitative investigation into the two major aspects of the language learning potential of the teaching materials on source use. The examination of the first aspect of the quality found that to some extent the design characteristics of the materials helped the students attend to and focus on the features of source use. The quantitative analyses of their computer-based records of using the materials and their
responses in the questionnaire survey revealed a moderate level of the students’ attention and focus when working with the materials. The qualitative analyses generated the design characteristics of the materials that facilitated the learners’ attention and focus.

The investigation of the second aspect of *language learning potential* was divided into three major areas of learning gains which are knowledge about source use, metalinguistic and pragmatic awareness about source use, and revision strategies for the first drafts. Each of the areas was investigated by the combination of both quantitative and qualitative findings. The findings showed that the learners gained some knowledge and metalinguistic and pragmatic awareness about source use, and generated specific strategies for revising their source use in the first drafts after the training although the statistical tests of these gains were not significant. These non-significant statistical findings may be due to the duration of the intervention. The qualitative analyses of the four students’ interviews about their learning gains and the quantitative results of the post-training surveys showed the students’ positive perceptions of their learning gains in all the three areas after the training. The next chapter continues to report the investigation of other important qualities of the teaching materials which are *meaning focus*, *learner fit*, and *impact*. 
CHAPTER 6: FINDINGS OF THE MEANING FOCUS, LEARNER FIT, AND IMPACT OF THE MATERIALS ON SOURCE USE

This chapter consists of three major parts corresponding to the examinations on the three important qualities of the teaching materials on source use. These three qualities are meaning focus, learner fit, and impact. As explained in Chapter 2, these three qualities are taken from Chapelle’s (2001) CALL task appropriateness framework that were integrated into the theory of action framework for the teaching materials. The examination of each of these three qualities in this chapter was implemented by combining the results of quantitative and qualitative analyses. Each part starts with brief explanations about the quality under investigation and the purpose of the examination followed by a report of the quantitative and qualitative results. The chapter then ends with a triangulation of the two types of results to draw a conclusion about the quality of the materials in this context. A summary of the major findings of the three qualities of the teaching materials is also provided at the end of the chapter.

6.1. The Meaning Focus Quality of the Materials

The meaning focus quality of the materials concerns how the materials help the students focus on understanding the meaning of source use features in the target genre that they are writing. The investigation into this quality of the materials was conducted on two aspects. The first aspect was whether and how the students focused on constructing and interpreting the meaning of source use features in their documented essays while working with the materials, and the second aspect was which characteristics of the materials helped draw the students’ attention
to construct and understand the meaning of these features. Each subsection below reports the results of the investigation into each of these aspects.

6.1.1. Whether and How the Learners Focused on Understanding the Meaning of Source Use in Documented Essays

The investigation of this research question was based on the analyses of quantitative and qualitative data as presented in Table. The quantitative data included the students’ responses to the 6-point Likert-scale statements in Question 6 and Question 7 of the post-training questionnaire survey. These statements directly state how a person focuses on understanding the meaning of source use in documented essays when working with the teaching materials. The 6-point Likert-scale ranges from Strongly Disagree to Strongly Agree corresponding to the numeric range from 1 to 6. As a result, a mean score greater than 3 is considered to indicate a moderate level of agreement, and a mean score greater than 4 a high level of agreement. The qualitative data consisted of the four interview transcripts with the students who completed the materials.

The results of the quantitative analysis of the students’ responses to the Likert-scale statements in the questionnaire survey are summarized in Table 38 below. The first column presents the statements in the questionnaire survey. The statements are also grouped into two major sets in the table. The first one is the students’ perceptions about their focusing and understanding of the meaning of source use features, and the second one is their perceptions about the importance of the meaning focus process to their understanding and learning of the features. The three points on the Likert-scale, which ranges from Strongly Disagree or Strongly Agree to Slightly Disagree or Slightly Disagree, are also grouped into two major categories. These two major categories are presented in the second and third column respectively. In
addition to the percentages of the respondents in one of these two categories for each statement, a mean score and standard deviation of the responses on the converted numeric scale from 1 to 6 are reported in the last two columns of the table.

Table 38. Summary of Students’ Responses to the Statements about the First Aspect of Meaning Focus (N=71)

<table>
<thead>
<tr>
<th>Question: Please indicate the level of agreement with each statement below.</th>
<th>Disagree</th>
<th>Agree</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focusing and Understanding the Meaning of Source Use Features</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I focused on understanding the meaning of citation features in documented essays while taking the lesson. (Question 7)</td>
<td>14.09%</td>
<td>85.91%</td>
<td>4.32</td>
<td>0.92</td>
</tr>
<tr>
<td>2. I did not focus on understanding the meaning of citation features in my writing when working with the materials. (Question 7)</td>
<td>84.51%</td>
<td>15.49%</td>
<td>2.72</td>
<td>0.97</td>
</tr>
<tr>
<td>5. I focused on understanding the meaning of the patterns of using citation features in documented essays. (Question 6)</td>
<td>16.99%</td>
<td>83.01%</td>
<td>4.02</td>
<td>1.09</td>
</tr>
<tr>
<td><strong>The Importance of Meaning Focus in Understanding and Learning Source Use Features</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. The focusing on the meaning of citation features was important to my learning of how to incorporate external sources for the assignment. (Question 7)</td>
<td>18.31%</td>
<td>81.69%</td>
<td>4.10</td>
<td>1.06</td>
</tr>
<tr>
<td>16. My focusing on the meaning of citation features enabled me to induce (or come up with) the strategies for using citation features in my documented essay (Question 7)</td>
<td>23.95%</td>
<td>76.05%</td>
<td>4</td>
<td>1.08</td>
</tr>
<tr>
<td>17. Focusing on the meaning of citation features in my writing was very beneficial to my learning. (Question 7)</td>
<td>21.13%</td>
<td>78.87%</td>
<td>4.07</td>
<td>1.16</td>
</tr>
</tbody>
</table>

As shown Statements 1 and 5 in Table 38, the majority of the 71 respondents (85.91% and 83.01%) agreed that they focused on understanding the meaning of source use features (Statement #1) and their patterns of use in the target genre (Statement #5) while working with the materials. Moreover, the mean scores on the 6-point Likert-scale also indicated a high level of agreement among these respondents towards the statement (M<sub>1</sub> = 4.32 and M<sub>5</sub> = 4.02). Similarly,
84.51% of them disagreed with the statement that they did not focus on connecting the meaning of source use features in their own writing when working with the materials (Statement #2). The mean score on the 6-point Likert-scale displayed a moderate level of disagreement ($M_2 = 2.72$). Moreover, most of the respondents agreed with a high level of strength on the importance of focusing on the meaning of source use features to their understanding and learning of these features. Specifically, 81.69% of the respondents recognized the importance of the meaning focus process in their understanding of the features (Statement #14) with a high level of agreement ($M_{14} = 4.10$). Additionally, 78.87% of them found that focusing on the meaning of source use in their writing helped them generate strategies to integrate external sources in their paper (Statement #16) and was beneficial to their learning (Statement #17).

The analyses of the interview transcripts yielded positive evidence of the students’ focusing on meaning of source use features when working with the materials. As described in the data analysis section, the ideational analysis of process types was conducted on the student interviews to investigate how the meaning focus process was involved in the students’ learning experiences in addition to the analyses of the stimulated recalls reported in Chapter 5. Accordingly, the interview questions specifically ask whether and how the students focused on understanding the meaning of source use features introduced in the materials. All the verbs of the main clauses in the four student responses about their meaning focus were then examined in terms of process types. The results of the process type analyses are presented in Table 39 below. As shown in the table, the material and mental verbs made up for at least 63% of all the coded verbs in the four student interview responses. Moreover, the mental verb group was dominant in all the responses with at least 35.3% of the total coded verbs.
Table 39. Summary of Raw Counts and Percentages of Coded Processes in Four Students’ Interviews about their Meaning Focus

<table>
<thead>
<tr>
<th>Process Types &amp; Sub-categories</th>
<th>Taylor</th>
<th>Ketty</th>
<th>Nancy</th>
<th>Sam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Existential</td>
<td>2(3.92%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Material</td>
<td>18(35.3%)</td>
<td>14(25%)</td>
<td>12(20%)</td>
<td>29(28.4%)</td>
</tr>
<tr>
<td>Action (Doing)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Event (Happening)</td>
<td>18(35.3%)</td>
<td>14(25%)</td>
<td>12(20%)</td>
<td>29(28.4%)</td>
</tr>
<tr>
<td>Mental</td>
<td>19(37.3%)</td>
<td>20(35.7%)</td>
<td>25(41.7%)</td>
<td>29(28.4%)</td>
</tr>
<tr>
<td>Affection</td>
<td>0(0%)</td>
<td>0(0%)</td>
<td>0(25%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Cognition</td>
<td>3(5.9%)</td>
<td>5(8.9%)</td>
<td>7(11.7%)</td>
<td>7(6.9%)</td>
</tr>
<tr>
<td>Perception</td>
<td>22(43.2%)</td>
<td>25(44.6%)</td>
<td>32(53.4%)</td>
<td>36(35.3%)</td>
</tr>
<tr>
<td>Relational</td>
<td>7(13.7%)</td>
<td>17(30.4%)</td>
<td>15(25%)</td>
<td>36(35.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>51(100%)</td>
<td>56(100%)</td>
<td>60(100%)</td>
<td>102(100%)</td>
</tr>
</tbody>
</table>

A further examination of the associated participants and circumstances of the material and mental processes in these four interview transcripts about the focus on meaning of source use features also yielded seven themes about how the students constructed the meaning of the target features. These themes are summarized in Table 40 below. Each theme is illustrated with one representative example where the identified material and mental verbs are underlined and bolded respectively.
<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Focusing on understanding the instructions in the lesson</td>
<td>(56) When I was using the tool, I would look at a question and see what it was asking for, and I’d go into the tool. (Taylor)</td>
</tr>
<tr>
<td>2. Focusing on understanding the features of source use through</td>
<td>(57) When we had to pair them (rhetorical functions) up and stuff, I tried to go through and that really helped me understand. (Ketty)</td>
</tr>
<tr>
<td>explanations in the lesson</td>
<td></td>
</tr>
<tr>
<td>3. Focusing on understanding the names of source use features through</td>
<td>(58) I look at the blue, little boxes, kind of just to see what the general category was, and then I’d click on them. (Taylor)</td>
</tr>
<tr>
<td>the menu in the tool</td>
<td></td>
</tr>
<tr>
<td>4. Focusing on understanding the patterns of source use through the</td>
<td>(59) I was more like thinking about what is the pattern and why does it make sense, so yeah, I looked at how frequently things were used in the graphs and that was a big thing for me. And then, I tried to make sense with in my own mind why this would be more frequent and why this would be less frequently used. Like for the mental versus verbal, obviously it makes more sense to be more direct. Verbal seems more direct, for me it just made much more sense to use verbal than mental because how are you supposed to know how this person thinks? And how is the writer supposed to know what this person is thinking because this person said this? (Nancy)</td>
</tr>
<tr>
<td>graphs in the tool</td>
<td>(60) I think with these [rhetorical functions], a lot of them, when there were questions about them in the lesson, I would look at the way the examples were worded to try to match them. I could get a general sense of what it was trying to get. If it’s a compare and contrast, it’s obviously got one opinion and then another and they’re opposite viewpoints, you can kind of get that. (Taylor)</td>
</tr>
<tr>
<td></td>
<td>(61) Well, being able to click on them, and click on the feature thing, and compare them to each other is very helpful. You click on one, read a few examples, understand what was different about it. Then click on another one, and read some of those examples and see how they vary from each other… You can also click on the sentence example for the extended context. That kind of shows you how it (the citing sentence) fits into the context. (Sam)</td>
</tr>
<tr>
<td></td>
<td>(62) Yeah when I was reading through the examples I like… within myself I just kept thinking of how would I use this, why would I use this, what are the benefits to using this. (Nancy)</td>
</tr>
</tbody>
</table>
Table 40 continued

<table>
<thead>
<tr>
<th>6. Focusing on understanding the connection between the lesson and the tool</th>
<th>(63) I guess I was <strong>focusing on trying to find</strong> a correlation between what it was asking and something that was put in the tool. (Ketty) (64) I <strong>read</strong> the explanations and then I <strong>reasoned</strong> through like the patterns and like why this would be used more frequently… <strong>I read</strong> through the examples again and I kind of <strong>linked</strong> them to why they would be most commonly used and why these might be least commonly used, and why these might not be as popular to use in this type of essays, you know. (Nancy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Focusing on explaining the features in one’s own words</td>
<td>(65) I’m just kind of like, <strong>thinking</strong> about what the question was asking, <strong>thinking about</strong> what would be useful in explaining my answers, <strong>trying to put</strong> what I’m thinking about into understandable sentences, I guess. <strong>Kind of making it all explainable.</strong> I <strong>keep</strong> the question <strong>in the back of my head,</strong> and just kind of <strong>look at</strong> the example to see what’s useful, what’s happening, and what the patterns that are going on. (Sam)</td>
</tr>
</tbody>
</table>

Note. Material processes are in italics, and mental verbs are in bold.

As shown in the table, four out of these seven themes (#1, #2, #5, #6) were similar to the ones identified in the students’ stimulated recalls about their focusing process reported in Chapter 5. Accordingly, the four students reported their focusing on understanding the instructions and explanations in the lesson to direct their exploration of source use features in the tool and to get an overall understanding of these features before their exploration of the features in the corpus. For instance, the speaker of Excerpt 57 admitted that working with the explanations about rhetorical functions of source use in the lesson facilitated her understanding of the features.

The second theme shows that the students focused on understanding the features through examining the examples in the tool. Additionally, the fifth theme from the student interview responses elucidates how the examination of these examples allowed to construct the meaning of source use features. For example, Excerpt 60 and Excerpt 61 illustrate the involvement of
observing language use in the examples in assisting the students with understanding the target source use feature. In addition, Excerpt 62 specifically shows how the examples enhanced her focus on the meaning of the target source use feature by helping her relate to her own practice of source use.

Next, the sixth theme presents the students’ attempt to make a connection between the two components of the materials to construct and interpret the meaning of source use features comprehensively. Excerpt 64 demonstrates the student’s complex mental processes that were strongly involved in her focusing on meaning of source use features in documented essays.

In addition to these four shared themes with the stimulated recalls, the other three themes generated from the students’ interviews touch on other processes of focusing on meaning in their learning experiences. As shown in the third and fourth themes of the interviews, the students constructed the meaning of source use features by focusing on understanding the features in the menus and the graphs in the tool. Finally, the last theme provides an evidence of the students’ attention to the meaning of source use features by their effort to articulate their explanations about source use features in the target genre. As shown in Excerpt 65, this verbal articulation of the explanations about source use features provided an opportunity for the student to think about his understanding of the features and to make sense of the provided explanations and examples of source use features in the specific context of the lesson.

Overall, both the quantitative and qualitative results showed that the students focused on constructing the meaning of source use features in documented essays when working with the materials. Most of the 71 respondents agreed with a high agreement level that they focused on the meaning of source use features in the target genre. Moreover, the quantitative survey results
indicated their positive perceptions of the importance of the meaning focus processes in their learning of the features. Supporting the quantitative results, the qualitative analyses of the students’ interviews revealed how the students focused on the meaning of source use features. For example, their attention to the meaning of source use features in the target genre was evident through their focusing on understanding the examples in their paragraphs and their effort to make sense of the observed patterns of source use in the A graded papers by relating to their own writing. Additionally, the themes generated from the qualitative analyses of the four stimulated recalls and interview responses indicated several characteristics of the two main components of the materials that were involved in the students’ focusing on meaning of source features. The next subsection continues to examine this aspect in more detail.

6.1.2. How the Intended Characteristics of the Materials Directed the Learners’ Attention towards the Meaning of Source Use Features

As presented in Table, both quantitative and qualitative analyses were conducted to examine the second aspect of the meaning focus quality. In addition to the two quantitative results that were reported in Chapter 5 about noticing and focusing processes in the students’ learning experience, one additional source of quantitative data was collected to further investigate this research issue. The two quantitative sources of data, which were reported to examine the language learning potential quality of the materials in the previous chapter, were referred to investigate this aspect. They were the average amount of time each student spent on each component of the materials (i.e., the Moodle-based lesson and the web-based corpus tool), and the quantitative results on the students’ responses to the 6-point Likert scale statements in Question 10 about which characteristics of the materials led to the students’ focusing and
noticing of source use. The additional quantitative data source was the 71 responses to the five 6-point Likert-scale statements in Question 7 in the post-training survey, which directly state which components of the materials help direct learners’ attention to the meaning of source use features. The 6-point Likert-scale ranges from Strongly Disagree to Strongly Agree corresponding to the numeric range from 1 to 6. As the result, a mean score greater than 3 and lower than 4 is considered to indicate a moderate level of agreement, and a mean score equal to or greater than 4 a high level of agreement respectively.

As reported in Section 5.1 of Chapter 5, the analyses of the students’ usage records in the Moodle-based lesson and the web-based corpus tool indicated a moderate amount of average time that the students spent on the lesson (20 minutes) and the tool (4 minutes) respectively. The quantitative survey results of Question 10 in the post-training survey, which was based on the 71 students’ responses to which characteristics of the materials led to their focusing and noticing, revealed the students’ positive support for the intended characteristics of each component in the materials on source use.

Moreover, the analyses of the additional quantitative data source, which was the students’ responses to Question 7 of the post-training survey, provided a positive evidence of the students’ perception of the materials in drawing their focus on meaning of source use. The quantitative results of the post-training questionnaire about the students’ perceptions of the components of the materials that led to their attention to the meaning of source use features are presented in Table 41 below.
As shown in the first two rows of the table, at least 80% of the respondents perceived with a high agreement level that working with the tool helped them focus on the meaning of source use features (Statement #5) and understand their use in the target genre (Statement #4). The same percentages of the respondents agreed on the role of the instructions and explanations in the lesson in their focusing on understanding the meaning of source use features (78.88%) and their patterns (83.09%) in the target genre (Statement #8 and Statement #10). However, fewer respondents (73.23%) disagreed that the tool did not help them understand the meaning of rhetorical functions of source use in the documented essays (Statement #6).

As reported in the preceding subsection, the qualitative analyses of the students’ interviews about their meaning focus process yielded seven themes that showed the students’ focusing on meaning of source use features. The re-examination of these themes helped identify several characteristics of the materials that led to the students’ focusing on meaning of source
use in documented essays. The identified characteristics of each component were found to correspond to those presented in the theory of action framework for the study (see Chapter 2).

First, the major characteristic of the Moodle-based lesson, that was identified to draw the students’ attention to the meaning of source use features, is the guided induction approach of the lesson. As shown in the three themes of the student interviews, the students found that the instructions or types of questions (Theme #1, Theme #7), and explanations in the lesson (Theme #2) directed their attention to explore the features and help understand them better. For instance, the open-ended question, which asked them to verbally explain the meaning of the source use patterns in documented essays, forced them to mentally focus on constructing and interpreting the meaning of such patterns by relating to the assignment and their own practice of source use as well.

As the second component of the teaching materials, the web-based corpus tool was identified with three major characteristics that drew the students’ focusing on meaning of source use features in the target genre as shown in the five themes of the reported themes above. These characteristics include the menu with colored tabs showing names of source use features (Theme #3), the graphs of citation frequency distributions (Theme #4), and the concordance lines with examples of citing sentences taken from the A graded essays (Theme #5). For example, as illustrated in Excerpt 62, the examination of the examples in the target genre allowed the student to focus on the meaning of the target feature of source use by connecting to her own practice of language use. Moreover, these examples facilitated their construction of explanations about the source use features in documented essays (see Excerpt 64).
Overall, both the quantitative and qualitative analyses supported the argument that the intended characteristics of the materials helped draw the students’ attention to the meaning of source use features in the target genre that they were writing as hypothesized in the theory of action framework presented in Chapter 2. The quantitative survey results showed the high agreement level in the respondents’ perceptions about the role of the two components, and the design characteristics of these components in the students’ meaning construction of source use features in documented essays. Moreover, the qualitative analyses identified the intended characteristics of each component in the materials that drew their students’ focus on understanding the meaning of source use features. The next section continues to present my investigation into the learner fit quality of the teaching materials.

6.2. The Learner Fit Quality of the Materials

The learner fit quality of the materials was examined in terms of three major aspects. The first aspect looks at whether the materials were at the appropriate difficulty level for the intended college students. The second aspect concerns the engagement level of the materials to the students, and the last aspect pertains to the usefulness of the materials to them. To investigate each aspect, both quantitative and qualitative analyses were conducted. The quantitative analyses, which were based on the students’ responses to the post-training survey questions about their perceptions of the difficulty, engagement, and usefulness of the materials, followed the same approach for analyzing the students’ responses to the 6-point Likert-scale statements in the previous section and chapter. Accordingly, the 6-point Likert-scale responses were categorized into two major groups Agree and Disagree. These 6-point Likert-scale responses were also reported with the average Likert-scale score showing the average level of agreement
for each statement, and the standard deviation measuring the dispersion of the responses from its
Likert mean score.

The results of the quantitative analyses on the 71 students’ responses to the Likert-scale
statements about the difficulty, student engagement, and usefulness of the materials are presented
in Table 42. The first column of the table lists the names of the three aspects, and the second
column presents the specific statements for their corresponding aspect in the post-training
survey. Descriptions of the results for each aspect are given in each subsection below.

Based on the appraisal analysis approach described in the data analysis section, the
qualitative analyses were conducted on the transcripts of interviews with four students and two
instructors about the learner fit quality of the materials. Accordingly, the appraisal analysis
examined any language resources in a main clause that show the interviewee’s attitude towards
the difficulty, engagement, and usefulness of the materials. The attitude conveyed by the
identified language resources was investigated in terms of polarity (i.e., positive, negative, or
neutral), graduation (i.e., levels of strength including high, mid, and low), and engagement (i.e.,
types of engagement into the evaluation including contracting vs. expanding, and strength of
engagement including high, mid, and low). This attitude coding process thus provided counts of
language resources in each response for each of the categories. These raw counts and their
converted percentages were then used to examine the overall polarity and strength of the
students’ attitude to each learner fit aspect of the materials.

The supplementary engagement analysis further illuminated how strongly the
interviewees were committed in their evaluation of the materials. All the coded language
resources of attitude were then examined for central ideas or categories after being tallied in a
This categorizing and theming process then yielded specific themes about how the participants perceived the difficulty level, the usefulness, and the student engagement of the materials. The results of each investigation into each aspect of the learner fit quality of the materials are presented in each subsection below.

6.2.1. The Difficulty Level of the Materials

As described above, two analyses were done to investigate whether or how the materials were appropriate for the students in terms of the difficulty level. The quantitative analysis was based on the students’ responses to the 6-point Likert-scale statements in Question 8 of the post-training survey. These five statements in this question were stated in different ways to check if a student found the materials appropriately difficult for him or her. The results of this quantitative survey analysis are summarized as the first part of Table 42.

Table 42. Summary of Students’ Responses to the 6-point Likert-scale Statements about the Learner Fit Quality (N=71)

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Question 8: Please indicate your level of agreement with each statement below.</th>
<th>Disagree</th>
<th>Agree</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty</td>
<td>1. The lesson worked well for me.</td>
<td>26.75%</td>
<td>73.25%</td>
<td>3.90</td>
<td>1.21</td>
</tr>
<tr>
<td></td>
<td>2. I had no problem working with the corpus tool.</td>
<td>19.21%</td>
<td>80.29%</td>
<td>4.34</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>3. I was able to complete the lesson without any problem.</td>
<td>22.54%</td>
<td>77.46%</td>
<td>4.14</td>
<td>1.17</td>
</tr>
<tr>
<td></td>
<td>4. I found the tasks in the lesson challenging enough.</td>
<td>11.27%</td>
<td>88.73%</td>
<td>4.42</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>5. The type of instruction in this lesson did not work well for English 250 students like me.</td>
<td>64.79%</td>
<td>35.21%</td>
<td>3.20</td>
<td>1.32</td>
</tr>
<tr>
<td>Engagement</td>
<td>6. I was not engaged in the materials throughout the lesson.</td>
<td>60.57%</td>
<td>39.43%</td>
<td>3.35</td>
<td>1.24</td>
</tr>
<tr>
<td></td>
<td>7. I was very interested in working with the corpus tool.</td>
<td>20.02%</td>
<td>79.98%</td>
<td>4.07</td>
<td>1.18</td>
</tr>
</tbody>
</table>
Table 4 continued

<table>
<thead>
<tr>
<th>Usefulness</th>
<th>8. Working with the materials was very useful for students like me.</th>
<th>22.53%</th>
<th>77.47%</th>
<th>3.97</th>
<th>1.18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9. I did not find the corpus tool useful.</td>
<td>89.11%</td>
<td>10.89%</td>
<td>4.53</td>
<td>1.00</td>
</tr>
</tbody>
</table>

As shown in the third and fourth rows of the table, the majority of the respondents (80.29% and 77.46%) found no difficulty with using the corpus tool (Statement #2) and completing the lesson (Statement #3) with a high average agreement level (4.34 and 4.14 on the 6-point scale). Noticeably, up to 88.73% of the respondents agreed with a high average strength (4.42 on the 6-point scale) that the tasks were at the appropriate level of challenge for them (Statement #4). However, a lower number of the respondents found that the lesson and the type of instruction in the lesson (i.e., the guided induction approach) worked well for them (Statement #1 and #5). For example, only 64.79% of the respondents disagreed with a moderate level that the guided induction approach was not appropriate for them (Statement #5).

The appraisal analyses of the four student interviews and the two instructor interviews yielded evidence showing both positive and negative perceptions of the users about the difficulty level of the materials to the students. As described above, the first stage of the analysis, which was coding for attitude resources in the interview responses, yielded frequency counts and percentages of attitude-charged language resources for each interviewee. The coding results of the appraisal analyses for the four student interviews and the two instructor interviews were summarized in Table 43 below.

Table 43 presents the coding results of the attitude-charged instances in the interview responses with four students and two instructors in the study. As shown in the last two columns of the table, all the students and instructors except for the second one (Ketty) had an equal or
greater number of coded instances in the positive polarity compared to that in the negative polarity. For example, Sam and Instructor 1 had more than 70% of the attitude charged instances that were positive. On the other hand, the interview with the student showed that Ketty, the student with the highest number of negatively charged instances, was 10 minutes late for the class, and spent less than 30 minutes on the materials. Thus, the student missed the teacher’s introduction to the lesson at the beginning, which might have led to her reported confusion about the purpose of the lesson and her difficulties with completing the materials in the interview.

Table 43. Summary of the Attitude Analyses of the Interviews about the Difficulty Level of the Teaching Materials

<table>
<thead>
<tr>
<th>Participants</th>
<th>Attitude</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td>Taylor</td>
<td>Appreciation</td>
<td>1 (17%)</td>
<td>2 (33%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>2 (33%)</td>
<td>1 (17%)</td>
</tr>
<tr>
<td>Ketty</td>
<td>Appreciation</td>
<td>2 (22%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td></td>
<td>2 (22%)</td>
</tr>
<tr>
<td>Nancy</td>
<td>Appreciation</td>
<td>1 (7%)</td>
<td>3 (20%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>3 (20%)</td>
<td></td>
</tr>
<tr>
<td>Sam</td>
<td>Appreciation</td>
<td>9 (69%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>3 (23%)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Appreciation</td>
<td>2 (7%)</td>
<td>8 (26%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>1 (4%)</td>
<td>1 (4%)</td>
</tr>
<tr>
<td>Instructor</td>
<td>Appreciation</td>
<td>2 (17%)</td>
<td>3 (25%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>1 (8%)</td>
<td></td>
</tr>
</tbody>
</table>

Note: H (high), M(mid), L(low)

The examination of the distributions of the attitude coded instances across different graduation levels showed that the evaluations conveyed by the instructors and students towards the difficulty level of the materials mostly had a moderate strength as the majority of the positive-attitude coded instances were categorized in the mid-level category. The supplementary
analyses of the engagement resources in the clauses with attitude coded instances in these
interviews provided a further insight into the perceptions of the students and instructors about the
difficulty level of the materials. The results of these analyses are summarized in Table 44.

Table 44. Summary of the Engagement Analyses of the Interviews about the Difficulty Level of
the Teaching Materials

<table>
<thead>
<tr>
<th>Participants</th>
<th>Contracting</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H  M  L</td>
<td>H  M  L</td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taylor</td>
<td>3(50%)</td>
<td>2(33%)</td>
</tr>
<tr>
<td>Ketty</td>
<td>1(8%)</td>
<td>3(23%)</td>
</tr>
<tr>
<td>Nancy</td>
<td>1(9%)</td>
<td>4(36%)</td>
</tr>
<tr>
<td>Sam</td>
<td>1(8%)</td>
<td>4(31%)</td>
</tr>
<tr>
<td>Teacher</td>
<td>1</td>
<td>2(7%)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>6(75%)</td>
</tr>
</tbody>
</table>

Note: H (high), M(mid), L(low)

As shown in the last two columns of the table, all of the interviewees except for Taylor
had a much higher number of coded instances for the expanding engagement type. This result
showed that the interviewees were very personally committed to their evaluations of the quality
of the materials in their interview responses. In other words, their evaluations of the difficulty
level of the materials were based on the perceptions of their own, but not of someone else. The
graduation analysis of the attitude-coded instances displayed a moderate low level of
engagement strength of the interviewees to their responses. For example, both of the instructor
interview transcripts had at least 48% of the attitude coded clauses containing the engagement
resources of the middle-level graduation.

The categorizing and theming stage of the appraisal analyses on the interview transcripts
yielded four major themes shared by both the instructors and the students. These four themes
capture both the positive and negative perceptions of the interviewees about the difficulty level
of the materials. These themes are presented in Table 45 below. In the table, each theme is illustrated with a representative excerpt from the interview transcripts. In these examples, all the attitude-coded language resources are italicized.

As shown in the first theme in the table, the students reported no difficulty with using the materials to complete the lesson. Supporting this theme, both instructors reported not observing any student’s difficulty with using the tool and completing the lesson during their classes. For example, Excerpt 67 shows why the student perceived the materials at the appropriate level of difficulty for her. Her response indicates that she was able to follow the instructions in the lesson and use the tool to answer the questions. At the same time, the questions and the explanations in the lesson enforced her understanding of the features after working with the tool.

Table 45. *Summary of the Examination on the Appraisal Resources in the Interview Responses about the Difficulty Level of the Teaching Materials*

<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>(66) Using the actual lesson, no I didn’t encounter any difficulties specifically. (Taylor)</td>
</tr>
<tr>
<td>1. Having no difficulty with using the tool and the materials to complete the lesson</td>
<td>(67) Yeah, I think I was able to understand the meaning of everything. I think I got the majority of the questions correct, I want to say. It all made sense, I think. I like how the tool helped understand what each of them actually was, as I could see the example and then I checked in the lesson to see if you did it right or wrong. The tools were nice. You could see everything. Then the questions reinforced what you were doing from the tools, I feel like. You went and looked at it, and figured out what was going on in it. The questions asked you to make sure you actually understand what you were learning. (Nancy)</td>
</tr>
<tr>
<td></td>
<td>(68) I thought they were appropriate, yeah. They didn’t seem to have any trouble with the physical act. The going through and checking things and going back and answering the question, and that process seemed to work pretty well. (Instructor 4)</td>
</tr>
</tbody>
</table>
Table 4

2. Finding most of the questions and features at an appropriate challenge level for the students

(69) I think it [the lesson] was just about the right level. Everything flowed together pretty well. Very easy to get an understanding, it uses tools to answer the questions. I think, yeah, it was just the right level. I think the multiple-choice questions were fairly easy, and the matching ones were a little bit more difficult, but still worth some thought. I could get most of them I think. Then the essay ones, they’re a bit more difficult, probably the most difficult out of the different ones we did just because they take a lot more thinking about it, and connecting that different patterns between them... It takes a lot more thinking about the patterns. You have to go back and analyze what’s happening in each of the examples, and kind of connect it to the patterns in between them all. The essay is just open-ended, so you don’t really know if you’re doing it right or wrong. (Sam)

(70) I think they’re at the college level that I’m at. I think they’re easier to understand than other different ways they could have been written or structured. I think it [the lesson] breaks it down nice and makes it easier to go through it. (Taylor)

(71) I do think it’s an appropriate level, it’s challenging. What you asked them to write is a good way of synthesizing that material. The students who were just stuck and staring at it, I believe that they were capable of doing it. (Instructor 1)

(72) I think it’s appropriate. It’s appropriate. I mean, they certainly identify the author integration types with no problem. The stance is where it got really challenging for students. I guess I can say that I did notice that was where students were stuck most, in the stance section... But I think this is an appropriate level of challenge. (Instructor 4)

Negative

3. Struggling with open-ended questions due to their unfamiliarity with the inductive learning approach

(73) It’s hard to come up with your own explanation about things on the spot. Obviously, people my age should have a sense of how to do this, but if it hasn’t been focused on in a long time, you’re just relearning it. I know that we have the tool to use, but when you still don’t know it that well, it’s really hard to put stuff into your own words. It’s easier just to see what someone else has stated about it and just try and learn based off of that. (Taylor)

(74) I think that one of the things that my students commented on was that they had trouble I guess with the... they aren’t used to looking at a corpus, and so when they would click on something, they’d see the list and were like “Wait, what am I supposed to get out of this?” I don’t know (Instructor 4)
Table 45 continued

| Struggling with understanding the instructions and explanations | (75) You maybe couldn’t expect every student to understand that… That would be a great place to integrate classroom discussion, you know? What does this mean? Is this positive or negative? I think that’s where maybe this tool needs a little bit more help in the classroom. You know, pause, look at this, what do you all think about this? So that if people are having thought processes that aren’t really accurate, they can be corrected and re-oriented. (Instructor 1) |
| (76) Yeah, I don’t know…the beginning was great, but it was also kind of hard in the end because some of the sentences in the explanations were too complex in a way for me, but maybe because I was exhausted. (Nancy) |
| (77) I was frustrated because I was frustrated with the content, for not knowing what the lesson was about and what I was supposed to do. I was late so I just jumped to the lesson and followed the instructions. But there was really my lack of understanding of it all. (Ketty) |

Note. All the attitude-coded language resources are in italics.

The second theme from the interviews demonstrates that both the instructors and students found most of the questions and features of source use in the materials at the appropriate level of challenge for the students. As illustrated in the three excerpts, the interviewees all agreed that the multiple-choice questions and the matching exercises about different features of source use such as citation types were easy for the students while some features like stance and the open-ended questions were more challenging. However, they all agreed that these challenging feature and open-ended questions were doable to the students if they were focused and spent time with the materials.

The third and fourth themes in the table indicate the negative perceptions of the students and the instructors about the difficulty level of the materials. First, both the students and instructors found that the open-ended questions that asked the students to explain the patterns of
source use features in the materials might not work well for some students. As illustrated in Excerpt 73, the student reported her difficulty with generating her own explanation of the pattern of the source use feature due to her insufficient understanding of the feature. Additionally, Excerpt 74 from the instructor interview explains why some of the students found the task challenging. As the instructor’s excerpt suggests, this challenge might be due to the students’ unfamiliarity with the instruction approach as they did not know how they would make sense of the distributions of source use features from the tool. At the same time, the instructor’s Excerpt 75 indicates her perception of the need for class discussion among the students about their observation of source use features and their frequency patterns to facilitate their induction.

The fourth theme shows another issue with the materials that led to the students’ difficulty with implementing the materials. As reported by both instructors, most of the help that they gave to their students during the classes was to rephrase the explanations and instructions in the lesson. As illustrated in Excerpt 76, some students had trouble with understanding the explanations in the materials due to its complicated wording. Excerpt 77 indicates another reason for the students’ frustration with understanding the content of the materials which was due to her missing the teacher’s introduction to the lesson at the beginning of the class.

Overall, the quantitative and qualitative results showed that most of the content and the questions in the materials were at the appropriate level of difficulty for the students. Moreover, the students were able to use the Moodle-based lesson and the tool to complete the lesson as expected. However, the open-ended questions in the lesson which asked the students to explain the patterns of source use features in the A graded documented essays might be too challenging to some students due to their unfamiliarity with the guided induction approach. In addition, the
wording in the instructions and explanations in the Moodle-based lesson might cause some difficulty to the students’ understanding of the features. In the next section, I will continue to report the investigation into the student engagement level of the materials.

6.2.2. The Student Engagement Level With the Materials

The student engagement level with the materials concerns whether and how the students are engaged and interested in working with the materials. To investigate this quality, both quantitative and qualitative results were collected. The quantitative results were based on the 71 students’ responses to the two 6-point Likert-scale statements in Question 7 of the post-training survey. The results are presented in Table 42 above.

Overall, the quantitative results showed that more than half of the students had a positive perception of the student engagement level of the materials. As shown in the table, 60.57% of the respondents disagreed with a moderate strength level (3.35 on the 6-point scale) that they were not engaged in the materials throughout the lesson (Statement #6). However, a much higher number of the students (79.98%) agreed with a high moderate strength level (4.07) that they were very interested in working with the web-based corpus tool (Statement #7). These quantitative results of the students’ perceptions about the engagement level of the materials were found to associate with those of their perceptions about the difficulty level of the materials. As reported in the previous subsection, most of the students did not meet any difficulty with using the materials and the tool, but some of them found the questions in the lesson a bit too challenging for them. This finding of the difficulty level of the materials might help explain why fewer respondents were engaged in the materials than in the corpus tool.
The qualitative analyses of the interviews with the four students and the two instructors about their evaluation of the student engagement level of the materials generated both positive and negative evidence about engagement. The results of the coding for attitude resources as the first coding stage in the appraisal analyses are summarized in Table 46. In the table, both raw frequency counts and their percentages of coded instances in terms of attitude types and polarity types are provided for each interview transcript. As shown in the last two columns of the table, most of the attitude-coded instances in all the interview transcripts were positively charged, making up at least 77% of all the attitude coded instances in each transcript. These results suggest that both the students and instructors had a positive perception of the student engagement level of the teaching materials.

Table 46. Summary of the Attitude Analyses of the Interviews about the Student Engagement Level of the Teaching Materials

<table>
<thead>
<tr>
<th>Participants</th>
<th>Attitude</th>
<th>Positive</th>
<th>Polarity</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taylor</td>
<td>Appreciation</td>
<td>5(38%)</td>
<td>1(8%)</td>
<td>1(8%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>5(38%)</td>
<td>2(15%)</td>
<td></td>
</tr>
<tr>
<td>Ketty</td>
<td>Appreciation</td>
<td>1(8%)</td>
<td>3(23%)</td>
<td>1(8%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>2(15%)</td>
<td>4(31%)</td>
<td></td>
</tr>
<tr>
<td>Nancy</td>
<td>Appreciation</td>
<td>3(33%)</td>
<td></td>
<td>2(22%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>3(33%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sam</td>
<td>Appreciation</td>
<td>4(50%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>4(50%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Appreciation</td>
<td>1(50%)</td>
<td>1(50%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>1(50%)</td>
<td>1(50%)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Appreciation</td>
<td>1(11%)</td>
<td>1(11%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>5(55%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: H (high), M(mid), L(low)*
Moreover, the supplementary engagement analyses of the clauses containing attitude-coded instances in these interview transcripts revealed a strong moderate engagement of the interviewees towards their perceptions of the student engagement quality of the materials. The results of these engagement analyses are presented in Table 47. Both raw frequency counts and their percentages of the engagement coded instances in terms of engagement types and graduation levels are reported in the table. As shown in the table, all of the interviewees, except for Sam, used language resources in the high and middle levels of the expanding category. These results show that the interviewees had very high and middle level commitment to their own perceptions of the quality of the materials. In other words, their evaluations of the student engagement level of the materials were based on their own experiences and perceptions of that quality rather than those of other people.

Table 47. Summary of the Engagement Analyses of the Interviews about the Student Engagement Level of the Teaching Materials

<table>
<thead>
<tr>
<th>Participants</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contracting</td>
</tr>
<tr>
<td></td>
<td>H</td>
</tr>
<tr>
<td>Student</td>
<td></td>
</tr>
<tr>
<td>Taylor</td>
<td>5(42%)</td>
</tr>
<tr>
<td>Ketty</td>
<td>3(30%)</td>
</tr>
<tr>
<td>Nancy</td>
<td>6(75%)</td>
</tr>
<tr>
<td>Sam</td>
<td>2(20%)</td>
</tr>
<tr>
<td>Teacher</td>
<td>1(14%)</td>
</tr>
</tbody>
</table>

Note: H (high), M(mid), L(low)

The categorizing and theming stage of the appraisal analyses generated more insightful explanations about what aspects of the materials that the students were engaged in when completing the lesson. The examination of all the attitude coded instances in the six interview transcripts and their associated participants and circumstances yielded both positive and negative
themes about the student engagement level of the materials, although more positive themes were found. Three major themes were found to be supported by both the instructors and the students while the other five themes emerging from the students’ interviews helped elaborate specific aspects of the materials that they were engaged in. The results of this examination are summarized in Table 48 below. Specific themes from the categorizing and theming process are presented in the third column and categorized into two major groups (i.e., “Positive,” “Negative”). For each theme, representative examples from the transcripts are selected for illustration in the third column of the table. In these examples, all the attitude-coded language resources are italicized.

As shown in the first theme of the table, both the instructors and the students perceived that the materials were mostly engaging to the students. As illustrated in Excerpt 78, one student emphasized that he was engaged in completing the materials as he spent most of the class time doing the lesson. Additionally, both the student of Excerpt 79 and the instructor of Excerpt 80 agreed that the students were engaged in the materials because of their curiosity with the content. For example, the student of Except 81 was curious as she found the content new to her. Additionally, the instructor of Excerpt 82 indicated that her students became more interested in the materials thanks to her introduction where she explained her rationale for having them do the materials.
Table 48. Summary of the Examination on the Appraisal Resources in the Interview Responses about the Student Engagement Level of the Teaching Materials

<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
<td></td>
</tr>
<tr>
<td>1. Feeling engaged in completing the materials</td>
<td>(78) Yeah, I think I was pretty engaged in it. I think I spent a fair amount of time on the lesson. I think it took me more, most of the class period to complete it. (Sam)</td>
</tr>
<tr>
<td></td>
<td>(79) I was overall interested, I never really knew a lot of this so I thought it was interesting. (Taylor)</td>
</tr>
<tr>
<td></td>
<td>(80) I think they engaged well. They were interested. I think they were really curious because I had... when I tell my students, &quot;I want you to do this.&quot; I give them reasons why I think this is really important, and so I talk to them about the conversation model. I talk to them about how this material is something I’ve never really taught before, and I think that it’s really important for them to figure out how to do because scholars do it in a unique way, and so you need to be able to look at it and understand it and analyze it. (Instructor 4)</td>
</tr>
<tr>
<td></td>
<td>(81) There were definitely some students that were interested. Like I said, a more mathematical mind, they were interested. (Instructor 1)</td>
</tr>
<tr>
<td>2. Feeling interested in working with the tool</td>
<td>(82) I was definitely interested in the tool part, the interactive learning part of that. (Ketty)</td>
</tr>
<tr>
<td></td>
<td>(83) I thought it was interesting, I really did enjoy using the tool. I liked seeing all the different things, I liked having them organized in different ways. I’m a very organizational person, so seeing them structured in this way where it’s all just just kind of different. That helped me learn a lot better. (Taylor)</td>
</tr>
<tr>
<td></td>
<td>(84) Yeah totally I thought that was very cool, I liked the structure of it and how it was laid out and I thought it was really helpful. (Nancy)</td>
</tr>
<tr>
<td>3. Being interested in examining the examples</td>
<td>(85) I think being able to see the examples made it more interesting, seeing how it connected into the papers. (Sam)</td>
</tr>
</tbody>
</table>
Table 48 continued

<table>
<thead>
<tr>
<th>Negative</th>
<th>4. Feeling engaged in closed questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(86) I guess I just found more of the multiple choice questions more interesting, except towards the end. (Laughter) When it got more, you know I got less enthusiastic and more tired, but I don’t know I found the multiple choices more interesting, I guess. (Nancy)</td>
</tr>
<tr>
<td></td>
<td>(87) I like that you’re able to check your answers. You knew if you did it right or wrong, and then I think it gave you feedback on it when you did it wrong, said why the right answer was correct. That’s helpful and nice to understand what was happening. (Sam)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Negative</th>
<th>5. Feeling not engaged in open-ended questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(88) The ones where you had to provide your own responses, not as much [interested], no. I just wasn’t a fan. I think the aspect of time kind of factored into that. I didn’t really want to put the effort in to writing a paragraph when there was other questions we had to go complete. Also, not knowing the material that well factored in to that too. I just didn’t really want to try and take the time to look at the tool again and find a whole bunch of different ways to put it all in to one paragraph. (Taylor)</td>
</tr>
<tr>
<td></td>
<td>(89) Yeah there were a few things that I was more interested in than others for sure. Some of the writing was more tiresome in a way, like less interesting than just like clicking on some like if this is right or that kind of thing. (Nancy)</td>
</tr>
<tr>
<td></td>
<td>(90) But since a lot of the students in 250 don’t like writing, having them write their answers probably is a barrier to engagement versus some other form of interaction like clicking on an option or ... Well, that’s the option I gave. Drag and drop, or something like that. (Instructor 1)</td>
</tr>
<tr>
<td></td>
<td>(91) I don’t know, I guess I just found more of the multiple-choice questions more interesting, except towards the end. When it got more, you know I got less enthusiastic and more tired. (Nancy)</td>
</tr>
<tr>
<td></td>
<td>(92) They seemed really exhausted by the end of it. It seemed like maybe too big a chunk to chew all at once, but other than that they seemed fine. (Instructor 4)</td>
</tr>
</tbody>
</table>

Note. All the attitude-coded language resources are in italics.

As the second and third themes show, the student interviewees indicated that working with the tool was engaging to them due to a number of its design characteristics. Excerpt 82 indicates that the interactivity of the tool made the student interested in working with it.
Furthermore, Excerpts 83 and 84 show that the tool was organized which helped these students learn the features better. The speaker of Excerpt 85 added that the provision of authentic examples in the tool were interesting to him as he could figure out the feature by examining the examples and seeing their connection in the target papers as well.

However, the fourth and fifth themes show that although the closed questions where the students only had to select one out of the provided options were more engaging to the students, the open-ended questions were not very interesting. As illustrated in Excerpts 86 and 87, the students found the closed questions more interesting because they were less cognitively demanding (Excerpt 86), and they had clear right or wrong answers (Excerpt 87). Moreover, the three excerpts from the students and the instructor that were illustrated for the fifth theme demonstrated clearly why the open-ended questions were not engaging to the students. As shown in Excerpt 88 and 89, both students thought that these questions took a lot of time and effort which made the students less interested in them. Similarly, Excerpt 90 by the instructor supported the perception that this question type might affect the students’ engagement with the materials.

Additionally, the last theme in the table indicates that the students might not be engaged in the materials at the end of the lesson due to the amount of content of the lesson. As illustrated in the two excerpts, the student was tired and less engaged at the end of the lesson (Excerpt 91). The teacher explained that the amount of content in the materials might be overwhelming for some students who were not familiar with the feature (Excerpt 92).

Overall, both the quantitative and qualitative findings support the idea that the materials were engaging to most of the college students. They were engaged in using the tool to complete
the lesson and were interested in learning the content about source use in the materials. However, some students might not be interested in the materials because of the amount of content about source use and the challenge of open-ended questions. The next subsection continues to present the findings of my investigation into the usefulness of the materials.

6.2.3. The Usefulness of the Materials

The last aspect of the learner fit quality of the teaching materials on source use concerns how useful the materials were to the students. To investigate this aspect, the quantitative and qualitative analyses were conducted to examine the students’ perceptions of the usefulness of the materials. As described at the beginning of this chapter, the quantitative analysis was based on the students’ responses to the two 6-point Likert-scale statements in Question 7 of the post-training survey. These statements directly state if the students found the materials and the corpus tool useful or not. The qualitative results were based on appraisal analyses of the interview transcripts with the four students and the two teachers in the survey about their evaluations of the usefulness of the materials. Each type of result is reported below before reaching a final argument on the usefulness of the materials in the study context at the end of the subsection.

As described in the previous section, the quantitative survey results for each 6-point Likert-scale statement in the post-training questionnaire survey include the percentages of the respondents whose responses were categorized into the two major categories of Disagree and Agree, the average Likert score, and the standard deviation of those responses. The results of the quantitative survey analysis on the usefulness of the materials are presented in Table 42 above. As shown in the table, the majority of the 71 respondents (77.47%) found working with the materials very useful for them with a moderate level of consensus (Statement #8). Moreover, up
to 89.11% of the respondents disagreed with a high disagreement level (4.53) that they did not find the corpus tool useful (Statement #9).

The qualitative results of the appraisal analyses on the interview transcripts with the students and the instructors about the usefulness of the materials provided positive evidence of the participants’ perceptions of the usefulness of the materials. The results of the coding stage for attitude-charged language resources in the interview transcripts are presented in Table 49 below.

Table 49. Summary of the Attitude Analyses of the Interviews about the Usefulness of the Teaching Materials

<table>
<thead>
<tr>
<th>Participants</th>
<th>Attitude</th>
<th>Positive</th>
<th></th>
<th>Polarity</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H  M  L</td>
<td>H  M  L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taylor</td>
<td>Appreciation</td>
<td>8(73%)</td>
<td>2(18%)</td>
<td>1(9%)</td>
<td></td>
</tr>
<tr>
<td>Affect</td>
<td>8(73%)</td>
<td>2(18%)</td>
<td>1(9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketty</td>
<td>Appreciation</td>
<td>3(60%)</td>
<td>2(40%)</td>
<td>3(60%)</td>
<td></td>
</tr>
<tr>
<td>Affect</td>
<td>2(40%)</td>
<td>6(40%)</td>
<td>1(10%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nancy</td>
<td>Appreciation</td>
<td>3(100%)</td>
<td>1(10%)</td>
<td>6(60%)</td>
<td></td>
</tr>
<tr>
<td>Affect</td>
<td>1(10%)</td>
<td>2(20%)</td>
<td>1(10%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sam</td>
<td>Appreciation</td>
<td>3(75%)</td>
<td>1(25%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affect</td>
<td>1(25%)</td>
<td>3(50%)</td>
<td>1(10%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Instructor</td>
<td>Appreciation</td>
<td>3(50%)</td>
<td>3(50%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affect</td>
<td>3(50%)</td>
<td>3(50%)</td>
<td>3(50%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Instructor</td>
<td>Appreciation</td>
<td>1(10%)</td>
<td>6(60%)</td>
<td>1(10%)</td>
<td></td>
</tr>
<tr>
<td>Affect</td>
<td>1(10%)</td>
<td>6(60%)</td>
<td>1(10%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: H (high), M(mid), L(low)

As shown in the last column of the table, the entire attitude coded instances in five out the six interviews showed positive attitude of the interviewees. Moreover, the examination of the graduation resources associated with these attitude-coded instances in the five interviews revealed that the strength of their positive evaluation on the usefulness of the materials was at the
moderate high level as at least 90% of all the identified graduation resources were in the middle and high level categories in each interview.

The examination of the instructional contexts of the student interviewees found that the student whose interview transcript was found with negatively charged attitude instances was in the class where she was assigned to work on a collaborative writing project with their peers for the documented essays. Moreover, the instructor was late for the class and did not use the PowerPoint slide presentation to introduce the materials to the students. Therefore, the student was not provided with any guidance before starting the lesson. This instructional context might have affected the student’s perception of the usefulness of the materials. The supplementary analyses of the engagement resources that are associated with the attitude-coded instances provided an insight into the positive perceptions of the interviewees about the usefulness of the materials. The results of these analyses are presented in Table 50 below.

Table 50. Summary of the Engagement Analysis of the Interviews about the Usefulness of the Teaching Materials

<table>
<thead>
<tr>
<th>Participants</th>
<th>Contracting</th>
<th>Engagement</th>
<th>Expanding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taylor</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Ketty</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nancy</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sam</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td></td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Note: H (high), M(mid), L(low)

As shown in the last two columns of the table, most of the engagement coded resources in the six transcripts were in the expanding category. Moreover, the graduation resources of these engagement-coded instances showed that all of them were at the high and middle levels. These
results illustrated that the interviewees were committed to their evaluations of the usefulness of
the materials.

The categorizing and theming stages of the attitude-coded instances in the six interviews
generated positive evidence of the interviewees’ perceptions of the usefulness of the materials.
Overall, all the interviewees recognized the usefulness of the materials although one of the
interviewees admitted that she was not motivated to complete the materials because of her lack
of understanding about the whole lesson at the beginning. The results of the categorizing and
theming stages are summarized in Table 51.

As shown in the table, the categorizing and theming stages yielded four major themes
that specify which characteristics of the materials that were perceived to make the materials
useful to the students by the interviewees. Each theme is illustrated with several representative
excerpts from the interviews. In these excerpts, the attitude-coded language resources are
italicized.

Table 51. Summary of the Examination on the Appraisal Resources in the Interview Responses
about the Usefulness of the Teaching Materials

<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The corpus tool provides a useful source of reference to learn about source use.</td>
<td>(93) It’s a reference, it’s just another way for us to understand what we’re doing. If you get overwhelmed or something like that, it’s just something else you can look at to be like, &quot;Here’s a little help.&quot; You know? (Ketty)</td>
</tr>
<tr>
<td></td>
<td>(94) I think it would be pretty helpful. I feel like the tools definitely give you a better grasp on incorporating sources. It helps you understand why it’s important to do so, and how it would help your paper. (Sam)</td>
</tr>
<tr>
<td></td>
<td>(95) The categorization, I think that was really useful. Then also, the distribution. Charts. Because they feel like something I can count as real, right? (Instructor 4)</td>
</tr>
</tbody>
</table>
Table 51 continued

| 2. The relevant features of source use and authentic examples from the students’ essays in the target genre make the materials very useful. | (96) By reading the examples, you can see how much stronger you can make your paper when you do it correctly. I think especially with this type of paper, you’re using so many different sources, kind of necessary to incorporate them well just to make the paper sound right, and make a successful argument. (Sam) 

(97) The position support and rhetorical functions, that definitely apply to our paper right now. We had to provide the three different positions. Using the different rhetorical functions, I would say can be applied to our paper now that we’re writing. (Taylor) 

(98) This is perfect. I mean, you have real examples, and then you can illustrate all these different terms with real examples. That’s what I would try to do in the classroom. I think that’s the biggest strength (Instructor 1) 

(99) It’s not an example that you made up. It’s an example that another student like them wrote. So, the corpus tool. It’s empowering to know that it was someone who was an undergraduate taking 250 who wrote that. When we give them an example that we wrote, or someone else who has been to graduate school, or is in graduate school wrote, I think it makes it seem less possible for them or they might just write it off as overly academic or irrelevant to them, not helpful. (Instructor 4) 

| 3. Open-ended questions make the lesson challenging but useful for the students to learn about the features of source use effectively. | (100) It’s easier to do multiple choice quickly without actually having to try and think about what you’re learning. When you’re given a section where you have to actually try and apply it and think about, it forces you to actually try and think about what you’re learning. I think that’s important, especially at our level, because you kind of need to know what you’re learning. You’re going to have to keep incorporating that through the rest of college career and stuff like that, and if you don’t actually stop and try to figure it out, you’re just going to go straight over your head and you’re going to completely forget about it. (Taylor) 

(101) I think it’s useful, I mean I never knew about it before and if it were like something easier I would say, it wouldn’t be as helpful and it’s good that it’s a little challenging, but it’s not like, it’s doable and you can learn it. (Nancy) 

(102) There are a couple places where you ask them to explain why something is the way it is, and that’s useful because it forces them to sort of like what I just did, to have that epiphany where they’re like "I have to explain this. I have to come up with a reason why this is what it is." That’s really useful. The written portions are really useful. (Instructor 4) |
Table 51 continued

| 4. The reflection component of the lesson, which helps reinforce the learners’ understanding of source use features in documented essays, makes the materials useful to the students. | (103) I think that’s what it was more than anything. I think that the journal... the homework and journal part made a big difference on understanding each feature because they go through the quiz and they’re like "Uh, I think that’s the right answer. Oh, snap, that was the wrong answer." Then they get all the way through and all of a sudden, now they have to apply it to their own writing, and that really kind of brings it home for them. It says "No, this is like a real thing that you can use in your real everyday life.", and I think that’s where the understanding really came in. (Instructor 4) |
| (104) In the lessons, I like that it asks the students to reflect on what they were learning, what they understood, or how they knew something. We mentioned in class how some of the students didn’t really understand what was happening, and so at least not knowing that you don’t know something is a starting point for learning, so I think that reflective quality was useful. (Instructor 1) |

Note. All the attitude-coded language resources are in italics.

The first two themes are related to the web-based corpus tool. The first theme states that the tool provides a useful source of reference to learn about source use features. As illustrated in the three examples, each interviewee indicated different characteristics of the tool that made the tool useful for them. For example, the student of Excerpt 93 commented that the tool provided a good understanding of source use thanks to its structured menu which integrates features of source use. Supporting this point, the instructor of Excerpt 96 specified multiple characteristics of the tool that contributed to its usefulness such as categorization and graphs showing distributions of source use features.

Importantly, the second theme indicates the significant role of authentic examples and features of source use in the target genre in the participants’ perceptions of the usefulness of the materials. Excerpts 96 and 97 illustrate how the students found the examples and the rhetorical functions as a feature of source use in the tool very relevant and helpful to them because they
were directly related to their writing assignment. Excerpts 98 and 99 display the strong support of both instructors on the significance of the examples in the tool. Instructor 1 thought that this was the biggest strength of the materials, and the provision of these authentic examples in the tool matched up with her teaching approach (see Excerpt 100). Instructor 4 elaborated on the significance of these authentic examples by explaining that it was “empowering” for the students to know that the examples were written by an English 250 undergraduate like them (see Excerpt 99).

The last two themes pertain to the characteristics of the lesson as the second major component of the materials. The first theme expresses the recognition of the participants about the usefulness of open-ended questions in the lesson. While they were challenging to the students, they helped them reinforce and consolidate their knowledge about source use effectively. For example, Excerpt 100 demonstrates the student’s recognition of the importance of the open-ended questions in helping them “try and think about what you’re learning” so that they were “not going to completely forget about it.” The last theme indicates the reflection component of the lesson as an essential factor of the usefulness of the materials. In Excerpt 103, the instructor 4 found the journal which asks the students to reflect on their own practice of source use by examining their source use in their first draft to be very beneficial to the students’ learning as it enhanced the transfer of source use knowledge into their writing.

Overall, these data are intended to support the claim that the materials are a good fit for the learners. Both the quantitative and qualitative findings show that the teaching materials were useful to most of the intended students although a portion of the students did not find the lesson as helpful as the corpus tool. The strongly positive perception of the participants about the corpus
tool was supported by a number of characteristics including the design of the tool, the frequency distribution graphs of the features, and the provision of authentic examples with applicable features of source use in the writing assignment that they were writing. In addition, the open-ended questions and the reflection component in the journal as the homework of the lesson were found to be useful to the students because they enhanced their transfer of knowledge about source use in their own writing. However, some students found the open-ended questions and the wording of instructions and explanations in the lesson both difficult and not engaging enough. The results of the investigation into the impact quality of the materials are presented in the next section.

6.3. The Impact Quality of the Materials

Support for claims about the impact of the materials requires examination of whether the students and teachers had a positive learning and teaching experience with the materials, and how these experiences affected them. In the two subsections below, I present the findings of the investigation into the students’ learning experiences and the teachers’ teaching experiences respectively. For each investigation, both quantitative and qualitative findings were reported to determine the level of support for claims about the positive impact of the materials.

6.3.1. The Students’ Evaluation of their Learning Experiences

To investigate the impact of the materials on the learners, both quantitative and qualitative analyses were conducted. The quantitative analyses were implemented on the pre-and post-training surveys. The quantitative data in the pre-training survey included the 139 responses to the Yes/No question about whether or not participants had been explicitly taught about source use, and the 139 responses to the 6-point Likert-scale statements in Question 4 and
Question 5 about their evaluation of their source use skills and the need for learning source use in the writing course and how to learn it. The data in the post-training survey contained the 71 students’ responses to the 6-point Likert-scale statements in Question 6 and Question 8 about their perceptions of how positive their learning experiences were, and other impacts on them besides their learning gains about source use. The qualitative analyses were based on the appraisal analyses of the four student interviews about their perceptions of their learning experiences.

For the Yes-No question in the pre-training survey, a simple percentage of the responses for each category was reported. The Likert-scale responses in the pre-training and post-training surveys were analyzed using the same procedure as described in the data analysis section. The responses were categorized into three major categories (e.g., Agree vs. Disagree; Effective vs. Not Effective; Necessary vs. Unnecessary). The reported results included the percentages of the responses for each category with the mean Likert score and the standard deviation of those responses.

For the Yes-No question in the pre-training survey, nearly half of the 139 respondents (41.73%) admitted that they had not been taught how to incorporate external sources in academic writing before taking this class. Moreover, only 24.46% of them evaluated their source use skills to be effective or very effective with a moderate low level of agreement (3.07 in the 6-point scale, SD=0.87). These two results about the students’ lack of preparation for source use in academic writing might help explain why up to 89.92% of them agreed that it was necessary for English 250 students like them to receive explicit language instruction about how to incorporate
external sources in the course. Additionally, these respondents agreed on the necessity of the instruction type with a high average agreement level (4.59 in the 6-point scale, SD=1.03).

The results of the quantitative analyses on the responses in the post-training survey are presented in Table 52. As shown in the last two rows of the table, the majority of the respondents showed their positive perceptions about the learning experiences with the materials. Specifically, 73.25% of the respondents thought their learning experiences with the materials were satisfactory (Statement #4 in Question 8), with a moderate high level of agreement (3.99 on the 6-point scale). Additionally, 67.75% of the respondents agreed that they would love to work with similar corpus tools to learn about other language features in academic writing (Statement #9 in Question 8), with a moderate level of agreement (3.46 on the 6-point scale).

Table 52. Summary of Students’ Responses to the 6-point Likert-scale Statements about the Impact Quality (N=71)

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Agree</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. After the lesson, I became more aware of the choice of forming a citing sentence and its rhetorical effect in writing. (Question 6)</td>
<td>18.31%</td>
<td>81.69%</td>
<td>4.30</td>
<td>1.19</td>
</tr>
<tr>
<td>11. I became aware of how the use of external sources is connected to the purpose of the writing assignment. (Question 6)</td>
<td>15.50%</td>
<td>84.50%</td>
<td>4.15</td>
<td>1.02</td>
</tr>
<tr>
<td>10. Working with the designed materials also helped me to develop other strategies to learn about other language features in academic writing. (Question 8)</td>
<td>23.94%</td>
<td>76.06%</td>
<td>3.93</td>
<td>1.07</td>
</tr>
<tr>
<td>11. I was satisfied with the learning experience. (Question 8)</td>
<td>26.75%</td>
<td>73.25%</td>
<td>3.99</td>
<td>1.25</td>
</tr>
<tr>
<td>12. I would love to work with similar corpus tools to learn about other language features in academic writing. (Question 8)</td>
<td>32.25%</td>
<td>67.75%</td>
<td>3.46</td>
<td>1.22</td>
</tr>
</tbody>
</table>
Furthermore, the greater proportion of the respondents indicated agreement with statements on the positive impacts of the learning experiences on them. As shown in the second row of the table, up to 81.69% of the respondents agreed with a high agreement level (4.30) that they became more aware of the rhetorical meaning of source use in their writing (Statement #7, Question 6). Similarly, 84.50% of them thought that they got more aware of the relationship between the choice of source use features and the context of the writing (Statement #11, Question 6). Moreover, 76.06% of the respondents found that the training helped them develop other strategies to learn about language features in academic writing in general (Statement #10, Question 8).

The qualitative analyses of the student interviews about the impact quality of the teaching materials provided both positive and negative evidence regarding the students’ perceptions of the positivity of the learning experiences. As described above, the coding stage in the appraisal analysis involves the identification of any language resources in the main clauses that helped me assign them into one of the five main categories in the appraisal coding framework for the study (see Figure 18). The results of this stage are presented in Table 53 and Table 54.

<table>
<thead>
<tr>
<th>Student</th>
<th>Attitude</th>
<th>Positive</th>
<th></th>
<th>Negative</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>M</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Taylor</td>
<td>Appreciation</td>
<td>1(3%)</td>
<td>18(53%)</td>
<td>2(6%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>8(24%)</td>
<td></td>
<td>5(15%)</td>
<td></td>
</tr>
<tr>
<td>Ketty</td>
<td>Appreciation</td>
<td>3(5%)</td>
<td>38(58%)</td>
<td>4(6%)</td>
<td>1(2%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>14(22%)</td>
<td></td>
<td>5(8%)</td>
<td></td>
</tr>
<tr>
<td>Nancy</td>
<td>Appreciation</td>
<td>6(14%)</td>
<td>23(52%)</td>
<td>6(14%)</td>
<td>1(2%)</td>
</tr>
<tr>
<td></td>
<td>Affect</td>
<td>5(11%)</td>
<td></td>
<td>1(2%)</td>
<td></td>
</tr>
</tbody>
</table>
As shown in the last two columns of Table 53, most of attitude-coded instances in the four interviews ranging from 80% to 92% were in the positive polarity category. Moreover, all of these positively charged instances except for those in Nancy’s interview fell into the high and middle levels of graduation. These two results showed that the interviewees had a quite positive perception of the impact quality of the materials.

The supplementary analyses of the engagement resources that were associated with the identified attitude instances in these four interviews gave in-depth insight into the perceptions of the interviewees on the impact quality of the materials. The results of these analyses are summarized in Table 54. As shown in the last two columns of the table, most of the engagement resources in the four interviews were in the expanding category, and the majority of them were in the high and middle graduation level. These results show that the interviewees were moderately and strongly committed to their evaluations of the impact quality of the materials. Moreover, their evaluations were based on their own perceptions of the impact of their learning experiences with the materials.
Table 54. Summary of the Engagement Analysis of the Interviews about the Impact Quality of the Teaching Materials

<table>
<thead>
<tr>
<th>Participants</th>
<th>Contracting (C)</th>
<th>Expanding (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td>Taylor</td>
<td>1(3%)</td>
<td>6(16%)</td>
</tr>
<tr>
<td>Ketty</td>
<td>1(1%)</td>
<td>20(26%)</td>
</tr>
<tr>
<td>Nancy</td>
<td>3(7%)</td>
<td>1(2%)</td>
</tr>
<tr>
<td>Sam</td>
<td>3(10%)</td>
<td>5(17%)</td>
</tr>
</tbody>
</table>

*Note. H (high), M(mid), L(low)*

The categorizing and theming stages of the appraisal analyses on the four interviews generated five major themes that provided both positive and negative evidence of the impact of the learning experiences with the materials on the students. These themes are presented in Table 55. In the table, each theme is illustrated with representative excerpts from the student interviews. In these examples, all the attitude-coded language resources are italicized.

The first theme from the four student interviews indicates that the students were all aware of the importance of the training in their learning of source use skills for the assignment in particular and their learning of writing skills in the course in general. For example, the student of Excerpt 105 thought that the training was very important to her learning of source use which made the class valuable to her. The student of Excerpt 106 pointed out that the training not only helped her gain more knowledge about source use to improve her writing for the assignment, but also develop her knowledge about language use.
### Table 55. Summary of the Examination on the Appraisal Resources in the Student Interview Responses about the Impact Quality of the Teaching Materials

<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>1. The training was important to the students’ development and learning of writing skills in the course.</td>
</tr>
<tr>
<td></td>
<td>2. The students became more aware about the role of language use in communication.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 55 continued

<table>
<thead>
<tr>
<th></th>
<th>3. The students became more aware of their writing skills.</th>
<th>(110) I think that in my papers in the past, <em>I’ve had a lot of crap in there to fill up word space. This shows me how to almost make that paper more worth reading for that audience and getting all of it.</em> (Ketty)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(111) <em>It helped to make me think about how often I repeat my words. Sometimes I use the same words over and over again, instead of just kind of switching them up all the time. Usually it’s more entertaining to use different words. When you use the same thing over and over, it kind of dulls yourself to it, I feel like. With some variety, you kind of stay interested in what it is, what’s going on. Just keeps you more wrapped and more intrigued in the subject.</em> (Sam)</td>
</tr>
<tr>
<td></td>
<td>4. The students gained more confidence about their writing skills after the training.</td>
<td>(112) <em>I feel more confident about getting a better grade on the paper, just able to add a little bit more variety into it, make everything sound better, sound credible with my sources that I used. Make it sound, like they should be listened to, not just a random person off the street.</em> (Sam)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(113) <em>I think my attitude towards writing changed in a way where I just don’t dread it at much as I did. Because there’s reasoning behind it, and then it makes sense. There’s a method to it.</em> (Ketty)</td>
</tr>
<tr>
<td></td>
<td>Negative 5. The students felt tired and less interested at the end of the training.</td>
<td>(114) <em>It was just like towards the end I was just mentally worn because there were so many questions, and I was kind of disheartened a little bit.</em> (Nancy)</td>
</tr>
</tbody>
</table>

*Note. All the attitude-coded language resources are in italics.*

The second theme signifies the specific impact of the training on the students as it was perceived to raise their awareness about the role of language use in communication. As shown in all the three illustrative examples, the students became more aware of how language use would affect their written communication. For example, the speaker of Excerpt 107 said that she gained
more awareness about the importance of language choices to make her writing more engaging and informational in order to fit the college writing level. The speaker of Excerpt 108 specified her increased awareness about the implications of word choice in communication thanks to her recognition of the existence of word connotations. Importantly, the last excerpt illustrates how the student found the training brought her a new level of awareness about rhetorical effects or functions of language use in communication.

The third theme highlights another level of awareness among the students who completed the materials. Accordingly, the students became more aware of their own writing problems. For example, the student of Excerpt 110 said that she did not consider audience and purpose in her regular writing practice. Similarly, the student of Excerpt 111 admitted how the training helped him be more knowledgeable about the ineffectiveness of the current language use in his writing practice.

The fourth theme was found to be closely related to the previous themes. Thanks to the positive impacts of the training on the students’ awareness about language use in general and their own writing practice, the students became more confident about their writing after the training. The student of Excerpt 112 specifically explained how the training helped him feel more confident about how to revise the paper. In addition, the student of Excerpt 113 commented that the training had a big influence on her attitude toward writing as she was able to see concrete strategies and methods to learn how to write in the training. However, as shown in the last theme, two of the student interviewees mentioned in the interviews that they were tired and less interested at the end of the training due to the length and intensity of the lesson. This finding was consistent with the reported qualitative results about the difficulty and engagement levels of the
materials, which showed that some students found the open-ended questions too challenging and less engaging.

The triangulation of the quantitative and qualitative results on the impact quality of the materials showed that the training had a good impact on most of the students. Besides their learning gains about knowledge and skills in source use for the documented essays reported in Chapter 5, they became more aware of language use in general, especially the rhetorical effects or functions of language choice in communication. The students also became more knowledgeable about their own writing weaknesses and more confident about their writing skills. However, there were some students who did not find that the materials made a positive impact on them. The examination of the instructional contexts of these students suggested the possibility of other contextual factors such as the instructor’s instruction, and the students’ motivation in the course. Moreover, given the intensity and length of the lesson on source use, the training might have made some students feel tired or less interested. The next subsection continues to report the examination of the impact of the materials on the teachers’ teaching experiences in the study.

6.3.2. The Instructors’ Evaluation of their Teaching Experiences

To investigate the instructors’ perceptions about their teaching experiences with the materials, both quantitative and qualitative analyses were conducted. The quantitative analyses were based on the twenty-four instructors’ responses to five 6-point Likert-scale questions in their pre-training questionnaire survey for the instructors. The first two Likert-scale questions asked for their opinions about the necessity to give language instruction and source use instruction for college students in English 250 writing courses. The next two questions asked how frequently they gave language instruction and source use instruction in these courses. Then,
they were prompted to evaluate the source use skills of English 250 students based on their teaching experiences. The next question contained five 6-point Likert-scale statements and asks the students to indicate their level of agreement with each of the statements. The analyses of the Likert-scale responses about the necessity of instruction and the agreement level followed the same procedure described in the previous sections. Accordingly, the responses were re-categorized into two major groups (e.g. Disagree vs. Agree; Necessary vs. Unnecessary). They were then reported in terms of the percentages of respondents for each category, their Likert-scale mean score showing the average strength of necessity or agreement, and the standard deviation indicating the dispersion of the Likert-scale responses. The responses to the question with the 5-point range of frequency (i.e., Always, Often, Sometimes, Rarely, Never) were reported in percentages for each of the five categories. The qualitative analyses were based on the interviews with the two instructor participants of the study (Instructor 1 and Instructor 4). The analyses followed the same approach for the appraisal analyses that were reported in the data analysis section and in the previous sections about the learner fit quality of the materials.

The quantitative results of the twenty four instructors’ responses to the 6-point Likert-scale questions about their perceptions of the necessity for language instruction and source use instruction show that the majority (78.26%) found it necessary to give explicit language instruction for the English 250 students with a moderate high level of necessity (M=4 on the 6-point Likert-scale, SD=1.95). Moreover, a greater number of the respondents (86.95%) agreed on the necessity to give source use instruction with a similar level of necessity (M=3.61 on the 6-point Likert-scale, SD=1.20). Additionally, a large proportion of them (79.26%) agreed that the source use skills of English 250 students were slightly and moderately effective. Their average
Likert-scale score of the effectiveness in source use also indicated a low moderate level of effectiveness (M=2.61, SD=0.87). Furthermore, the results showed that seven instructors (29.17%) rarely or never provided explicit language instruction that gives the students’ attention to language use in academic writing, while nine of them (38.5%) always or often did that for their students in English 250 courses. Additionally, twelve out of twenty four respondents (50%) said that they always and often gave source use instruction while only four of them (16%) rarely or never did that in their classes. Overall, these quantitative results showed that many of the instructors saw the need for explicit language instruction and source use instruction for English 250 students.

The additional quantitative survey results of the instructors’ responses to the four 6-point Likert-scale statements about how to teach source use skills for English 250 students are summarized in Table 56. The first column lists the four statements. The responses were categorized into the two major categories of Disagree or Agree. A mean Likert-scale score showing the level of agreement was also calculated based on the twenty four responses for each statement.

Table 56. Summary of the Instructors’ Responses to the Statements about Teaching Source Use for English 250 Students (N=24)

<table>
<thead>
<tr>
<th>Question 24: Please indicate your level of agreement with each statement below.</th>
<th>Disagree</th>
<th>Agree</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students should be taught to observe language use in a specific genre.</td>
<td>0.00%</td>
<td>100.00%</td>
<td>5.13</td>
<td>0.69</td>
</tr>
<tr>
<td>2. Students should not be given a number of examples from the target genre.</td>
<td>90.91%</td>
<td>9.09%</td>
<td>2.04</td>
<td>0.92</td>
</tr>
<tr>
<td>3. Students should not be guided to notice and focus on important language features in the target genre.</td>
<td>90.91%</td>
<td>9.09%</td>
<td>1.86</td>
<td>1.25</td>
</tr>
</tbody>
</table>
Table 56 continued

| 4. Language instruction should encourage students to induce the rules about how to use language effectively. | 18.19% | 81.82% | 4.41 | 1.15 |

As shown in the table, all of the respondents agreed that the students in English 250 should be taught to observe language use in a specific genre with a high mean Likert score of agreement (5.12 on the 6-point scale). Moreover, up to 90.91% of the respondents disagreed that English 250 students should not be given examples from the target genre that they were writing with a moderate Likert mean score of disagreement (2.04). Similarly, the same number of respondents agreed with the high level of agreement that English 250 instructors should guide the students to notice and focus on important language features in the target genre. However, a lower number of the respondents (81.82%) agreed that language instruction in English 250 courses should encourage the students to induce the rules about language use. These quantitative results show that most of the instructors recognized the importance of giving examples and teaching language use features in the target genre for their students; however, they did not appear to hold a common view about the inductive learning approach in language use instruction for college students in these courses.

The results of the qualitative analyses generated both positive and negative evidence of the instructors’ perceptions of the impact of the teaching experiences with the materials. The qualitative analyses were based on the appraisal analysis approach that is described in the previous section and data analysis. Accordingly, all the main clauses in the interview transcripts with the two instructors were examined for any language resources that helped me assign them into one of the five major categories in the appraisal coding framework (see Figure 19). These
five major categories are attitude types, attitude polarity, graduation of attitudes, engagement types, and graduation of engagement.

The results of the coding stage of the appraisal analyses are summarized in Table 57. As shown in the table, more than half of the attitude-coded instances (82% for Instructor 1 and 84% for Instructor 2) in both interview transcripts were positively charged. All of the positively charged instances of attitude were in the middle or high graduation categories. These results show that both of the instructor interviewees held a strongly positive perception of their teaching experiences with the materials.

Table 57. Summary of the Appraisal Analysis of the Interviews about the Impact Quality of the Teaching Materials

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Attitude</th>
<th>Positive</th>
<th></th>
<th></th>
<th>Negative</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>M</td>
<td>L</td>
<td>H</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td>1</td>
<td>Appreciation</td>
<td>3(14%)</td>
<td>11(46%)</td>
<td></td>
<td>3(13%)</td>
<td>1(5%)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Affect</td>
<td></td>
<td>5(22%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Appreciation</td>
<td>5(13%)</td>
<td>15(39%)</td>
<td></td>
<td>2(5%)</td>
<td>4(11%)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Affect</td>
<td>2(5%)</td>
<td>10(26%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. H (high), M(mid), L(low)

The supplementary analyses of the engagement resources associated with the coded instances of attitude provided positive evidence about how insightful the perceptions of the interviewees were. The results of the analyses are summarized in Table 58 below. As shown in the table, all of the engagement resources were found to be in the expanding category. Moreover, most of these resources fell into the middle graduation level. These results show that the interviewees were moderately committed to their evaluations of their teaching experiences with
the materials. In other words, their evaluations were based on their own perceptions of the quality of the materials rather than others’ perceptions.

Table 58. Summary of the Engagement Analysis of the Interviews about the Impact Quality of the Teaching Materials

<table>
<thead>
<tr>
<th>Participants</th>
<th>Contracting</th>
<th>Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H  M  L</td>
<td>H  M  L</td>
</tr>
<tr>
<td>Teacher 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7(22%) 20(63%) 5(16%)</td>
<td></td>
</tr>
<tr>
<td>Teacher 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10(38%) 11(42%) 5(19%)</td>
<td></td>
</tr>
</tbody>
</table>

Note. H (high), M(mid), L(low)

The coding and theming stages of the appraisal analyses on the instructor interviews generated four major themes, which provided both positive and negative evidence about the impacts of the teaching materials on the instructors. The results of these stages are shown in Table 59 below. The first two columns list the themes and their polarity categorization showing whether a theme shows a positive or negative perception of the instructors about the teaching experience. Each theme is illustrated with representative examples from the two interview transcripts. In these examples, all the attitude-coded language resources are italicized.

As shown in the table, the first three themes demonstrate positive perceptions of the instructors about their teaching experiences with the materials. The first theme indicates that both instructors found the training important to their writing instruction in the course. As illustrated in the first two examples, both instructors agreed that the content of the materials about source use was important to their writing instruction and necessary for the students in their classes. Their perceptions about the importance of the training were strongly supported with their explanations as shown in the illustrative examples. Excerpts 115 and 116 present the instructors’ explanations...
for the importance and necessity of the materials in their writing instruction. Accordingly, both instructors agreed that academic writing was foreign to the students, and the classes would be beneficial to them if teachers gave explicit language instruction about how to write. Moreover, in Excerpts 117 and 118, the instructors emphasized how the use of the teaching materials could supplement their writing instruction about the assignment. For example, the instructor 1 hoped that the students would pay “a lot more attention to mention of citations in the rubric.” In other words, the training would help raise the students’ awareness and knowledge about the citation component of the assignment. On the other hand, the instructor 4 showed how she found the training very “cool” as it allowed their students to reflect on their own writing and see their own writing weaknesses, which she thought very critical for their writing skills development (see Excerpt 118).

Table 59. Summary of the Examination on the Appraisal Resources in the Instructor Interview Responses about the Impact Quality of the Teaching Materials

<table>
<thead>
<tr>
<th>Themes</th>
<th>Illustrative Examples (Excerpt #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>1. The teaching materials were important to their instruction on source use in particular, and their writing instruction in general.</td>
</tr>
<tr>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td></td>
</tr>
</tbody>
</table>
Table 59 continued

<table>
<thead>
<tr>
<th>2. The teaching materials went along with their teaching philosophy about writing instruction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(118) It was funny because as they went through the materials they were commenting on what they saw... or as they were doing the homework part, they were commenting on &quot;Oh my goodness, I didn’t realize I did this.&quot;, and that was really cool because you don’t often hear students saying that they’ve had an epiphany about how they write in class. So that was pretty cool. I’d like to be able to continue to develop that. (Instructor 4)</td>
</tr>
<tr>
<td>(119) I think looking at real examples is helpful, and that’s what I like about your teaching tool because you have that corpus tool and they get to see what real students wrote. I think that’s helpful. I mean, that’s how the brain learns, looking at examples and then synthesizing these rules. That’s probably the best way, but that takes a lot of time. I’ve thought about how to do that in class, but I don’t have example papers to draw from. I haven’t personally done that, but I think that’s the best way. (Instructor 1)</td>
</tr>
<tr>
<td>(120) If they read the textbook at all, it’s not usually the kind of writing that we want them to reproduce, and it’s not fair. So to give them examples in sort of a concentrated location is really useful...like the corpus is a really good example because they can see lots of instances where the same thing is happening. (Instructor 4)</td>
</tr>
<tr>
<td>(121) Because I looked at the corpus and the materials before the semester started, I’ve been thinking about that end goal more. It’s again, not something that I can say &quot;I did this day differently because...&quot; but it’s been something that has just sort of shifted the direction of my thinking and the way I present material in class. So it’s changed, it’s been shift in the way that I discuss the end goal of the research supported on an essay. (Instructor 1)</td>
</tr>
</tbody>
</table>
Table 59 continued

<table>
<thead>
<tr>
<th>Preparation for the assignment.</th>
<th>(122) I would like to be able to use these tools in my future classes. (Instructor 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(123) That’s funny because before your study, I hadn’t really thought about it. I would say “The MLA guide is in your handbook. Read it. You’ll get it.” I would suggest periodically citation generators or other tools that they could use, but I didn’t really talk very specifically about how to incorporate sources. I was actually really glad that your study came along. Oh yeah. Because especially when I started reading through the corpus, I thought “Oh, this explains a lot about what has really frustrated me in some of my previous teaching experience in my students’ writing because it…” until it’s pointed out, sometimes you just don’t notice things. It’s been eye-opening, I guess. (Instructor 4)</td>
</tr>
</tbody>
</table>

Negative 4. The teachers found the teaching materials lack of collaborative learning. | (124) I understand the reason for the model that we use here, but I would like to continue to use it in development… because of where I sit and the situation I don’t see how they’re thinking, I guess. I’m a big fan of modeling thinking. I would like to try it sort of with a different model… So you have one person who’s sort of in the hot seat, and we do the lesson up on the screen, then they choose an answer but everybody can sort of agree with the response or disagree with the response and have more of a reasoning out, and use the power of multiple brains. (Instructor 4) |

Note. All the attitude-coded language resources are in italics.

The second theme helps explain why the teaching experience was positive to the instructors. As stated, the characteristics of the teaching materials fitted their teaching beliefs about how to teach English 250 students to write. Both Excerpts 120 and 121 express that the instructors were very satisfied with the provision of examples in the materials, as they believed that modeling and exemplifying were the best teaching approach for their English 250 students.
The third theme provides another important piece of positive evidence on the *impact* quality of the teaching materials. The theme specifies how the teaching experience with the materials helped change the instructors’ perspectives about source use instruction in specific, and their writing instruction for the assignment in general. For example, in Excerpt 121, the instructor commented that the teaching experience was so impactful on her perspective about source use instruction. To her, that experience was “eye-opening.” Moreover, the instructor of Excerpt 122 explained how the use of the materials in her class helped her rethink her writing instruction for the assignment. Specifically, she got more direction about the purpose of the assignment and the importance of source use in her instruction right from the beginning.

However, the last theme illustrates the instructors’ negative evaluation about their experiences with the materials due to the lack of collaborative learning. As shown in the two illustrative excerpts, both instructors thought that integrating class discussion along the lesson would have made their teaching experiences more satisfactory and successful.

Overall, the triangulation of the quantitative and qualitative results on the impact quality of the teaching materials supports the argument that the materials had positive impacts on the teaching experiences of the teachers. First, as supported by the findings of both analyses, the teaching materials on source use were perceived to be important to English 250 students by most of the twenty-four instructor respondents to the survey, and the two instructor interviewees in the study. The qualitative findings helped provide more explanations for this argument. Accordingly, the use of the teaching materials for the training on source use was critical to the value of the course and strengthened the instructors’ writing instruction for the assignment, as the students would develop more awareness and knowledge about source use.
Moreover, as supported by the large proportion of the twenty-four instructor respondents and both instructor interviewees, the major characteristic of the materials, which include the provision of authentic examples from the A graded papers in the target genre, and the language instruction to draw the students’ attention to feature of source use, were perceived to bring benefits for their students. Additionally, the qualitative findings showed that the training on source use using the materials helped the instructors rethink their writing instruction for the assignment in general and source use in specific. However, the inductive learning component of the teaching materials through individual work was not positively perceived by most of the instructor respondents and the two instructors. According to the interviews with the instructors, they would prefer more collaborative learning including class discussion to facilitate their students’ inductive learning more effectively. In the next section, I summarize the major findings of the three qualities of the materials as presented in this chapter.

6.4. Chapter Summary

This chapter presents the findings of the investigations into three qualities of the teaching materials on source use. The first quality, meaning focus, involves whether and how the characteristics of the materials helped the students focus on the rhetorical meaning of source use in documented essays. The second quality concerns the learner fit of the materials, which includes the difficulty level, the student engagement, and the usefulness of the materials. The third quality is about the impact of the teaching materials on the users including both students and instructors. To investigate each quality of the teaching materials, both quantitative and qualitative analyses were conducted, and their results were compared in the interpretation phase to support the claims on each quality in the instructional context. Table 60 summarizes the
findings of the investigations. The first column lists the names of the three qualities. The second column and the third column present positive and negative evidence of a corresponding quality respectively.

As shown in the table, the quantitative and qualitative findings provided predominantly positive evidence of the participants’ perceptions about the three qualities of the teaching materials. In terms of meaning focus, both types of quantitative and qualitative results showed that the design characteristics of the materials helped draw the learners’ attention to the rhetorical meaning of source use features and provided conditions for them to construct the meaning of source use features in their own writing context as hypothesized in the theory of action framework. For example, the provision of authentic examples in the target genre for source use features was indicated to attract the students’ focus and facilitate their understanding of the meaning of source use in documented essays and in their writings. Moreover, the reflection component of the materials also helped strengthen their understanding of the meaning of source use features in the text that they were producing.

Table 60. Summary of the Findings of Meaning Focus, Learner Fit, and Impact of the Teaching Materials on Source Use

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Positive Support</th>
<th>Negative Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning Focus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quantitative findings:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- The majority of the 71 survey participants ranging from 79% to 86% showed a moderate high level of agreement with the statements that they focused on understanding source use features in documented essays and connecting the meaning of source use in their writing when working with the materials.</td>
<td></td>
</tr>
</tbody>
</table>
Table 60 continued

- At least 70% of the 71 survey participants agreed with the moderate and high levels about the intended characteristics of the materials (e.g., the examples in the tool, the instruction approach and tasks in the lesson) in drawing their attention to construct the meaning of source use in documented essays and their own writings.

Qualitative findings:

- The coding stage of the ideational analyses revealed the dominance of mental verbs showing cognition processes in the students’ interview responses about their working processes with the materials.

The theming stage of the ideational analyses ended with 7 themes that show the learners’ processes of focusing on meaning of source use when working with the materials, and the characteristics of the materials involved in these processes.

Learner Fit

Quantitative findings:

- At least 78% of the 71 survey participants showed a moderate high level of agreement with the statements that most of the materials (e.g., the tool, the multiple-choice questions, the reflection task) were appropriately difficult, engaging, and useful to them.

Qualitative findings:

- The appraisal analyses of the student and instructor responses generated ten themes indicating the users’ positive perceptions about the difficulty, engagement, and usefulness of the materials.

- The supplementary engagement analyses of the responses also indicated the interviewees’ moderate and strong levels of

Quantitative findings:

- Only 64.79% of the respondents disagreed with a moderate level that the guided induction approach was not appropriately difficult and engaging to them.

Qualitative findings:

- The appraisal analyses of the student and instructor responses yielded four themes that show the users’ uncertainty about the appropriateness in terms of difficulty and engagement of open-ended questions and explanations following the guided induction approach in
Table 60 continued

Impact on their evaluation of the materials.

Quantitative findings:

- Nearly half of the 139 respondents to the pre-training student survey admitted that they had never received language-level instruction on source use before the class. And 89.92% of them found it necessary for the students like them to receive such instruction in the course.

- The majority of the 71 respondents to the student post-training survey ranging from 75% to 85% agreed with a moderate high level that they were satisfied with the learning experiences with the materials and found them beneficial to their writing development.

- At least 90% of twenty-four respondents to the pre-training instructor survey supported the intended characteristics of the teaching materials (e.g., providing examples in the target genre, guided language-level instruction about features of source use).

Qualitative findings:

- The appraisal analyses of the students’ responses generated four themes that illustrate their positive perceptions of the impact of the experiences with the materials on both their intellectual (e.g., awareness about the context of language use and writing purpose) and affective development (e.g., confidence) in writing.

- The appraisal analyses of the instructors’ responses produced three themes displaying the positive impacts of the teaching experiences with the materials on their perspectives about writing instruction.

Quantitative findings:

- Only 67.75% of 71 respondents to the student post-training survey showed a moderate level of agreement with the statements that they would love to work with similar materials to learn about other features of academic writing.

Qualitative findings:

- The appraisal analyses of the students’ responses generated one theme which shows the negative impact of the learning experiences with the materials as the students felt tired and less engaged at the end of the lesson.

- The appraisal analyses of the instructors’ responses generated one theme which shows the negative impact quality of the materials as their teaching experiences were lack of collaborative learning among the students.

The findings on the three aspects of the learner fit quality indicated some interaction among them. First, the findings of the three examinations indicated several similar design
characteristics of the materials that were found to be appropriate, interesting, and useful to the students. For example, the provision of the authentic examples in the same genre, which was perceived to be one of the greatest strengths of the materials in drawing the students’ focus on meaning of source use, was evaluated to be very appropriate, engaging, and beneficial to most of the students. However, the guided induction in open-ended questions, which asked the students to generate explanations about the features of source use in the documented essays, was found to be challenging, less engaging, and thus less useful to some of the students in the course.

The third investigation into the impact quality of the materials also supported the claims that the materials had positive impacts on both the students and instructors in the study. The majority of the student respondents agreed that they were satisfied with their learning experiences with the materials, and the training helped them gain more knowledge and awareness about language use in general. The qualitative analyses of the student interviews also corroborated the quantitative findings and helped identify other strategies that they learned after the training. For example, they became more aware about the rhetorical functions of language choice and the role of audience in writing and communication.

In addition, the findings of the teachers’ perceptions about the impact quality of the teaching materials showed that the provision of the materials and the design approach of the materials were beneficial to the writing instruction in the intended courses. Most of the instructor respondents recognized the importance of the training on source use and supported the characteristics of the teaching materials which facilitated the learners’ focus on and notice of source use features in the target genre through authentic examples and relevant features. The findings of the instructor interview analyses were aligned with the quantitative results as the
instructors positively evaluated the importance of the training in their writing instruction about the assignment in their classes, and the changes to their perspectives about source use instruction after the training.

However, the investigations also did not provide sufficient support for the use of similar corpus-based tools and guided induction in the teaching materials to teach the students about other features of academic writing. First, fewer than 70% of the student respondents would like to continue to work with a similar corpus tool to learn about features of academic writing. The qualitative analyses of the students’ interviews also revealed that the students felt tired and less engaged by the end of the lesson. For instructors, only nearly 20% of twenty-four instructors of the course advocated for the guided induction approach in writing instruction in such courses. The analyses of the instructors’ interviews also indicated the instructors’ dissatisfaction with the shortage of collaborative learning in their teaching experiences with the materials. The instructors also suggested that they would integrate more class discussions in order to facilitate their students’ learning of the materials better.

The next chapter draws conclusions about the effectiveness of the teaching materials on source use by connecting the findings on the four qualities gained in this study. The chapter also highlights some limitations of the study. Based on the findings and the limitations of the study, specific implications for both research and pedagogy are presented.
CHAPTER 7: CONCLUSION

The present chapter serves to re-orient the reader to the study objectives by examining the implications of the results so that the study may be appropriately contextualized in the broader scope of research in the field. After a brief background of the study, the chapter summarizes the findings of the four qualities of the teaching materials that were investigated in Chapter 5 and Chapter 6. Based on the summary of the major findings, specific implications for writing instruction and materials design and development for college students are then discussed. After the implications of the findings are presented, the limitations of the study are highlighted. The chapter finally ends with a presentation of directions for future research and a brief summative conclusion.

The purpose of this mixed-methods study was to evaluate the effectiveness of the theoretically informed teaching materials on source use for college students in the context of a college-level writing course for both native and non-native speakers of English in a large Midwestern public land-grant university. The course is designed to provide college students with knowledge about basic concepts of rhetoric and practice to improve their four modes of communication: Written, Oral, Visual, and Electronic. In terms of written communication, the students in this course must write a documented essay which requires them to research and integrate several sources on a topic of interest to generate an argument on that topic or to report different viewpoints on that topic. The CALL experimental materials in this study were developed to help these students with source use skills in this specific type of essay.

The development and evaluation of the materials were grounded in relevant theoretical and empirical bases in SFL, Corpus Linguistics, and SLA. The introduction chapter provided an
argument for the need to give language-level instruction for college students in writing courses which motivated the study. The literature review chapter presented the theoretical and empirical grounds that directly informed the development and evaluation of the teaching materials on source use. The concrete design and development of the materials were described in Chapter 3 of the dissertation. The evaluation of the effectiveness of the materials in this study was shaped by the theory of action framework which integrates the four criteria in Chapelle’s (2011) CALL task appropriateness framework into Patton’s (2008) linear logic model. Thus, the effectiveness of the materials was evaluated in terms of four major qualities: language learning potential, meaning focus, learner fit, and impact. The methodology and the results of the investigations of these four qualities of the teaching materials were presented in Chapters 4 to 6. The section below highlights the major findings of these investigations.

7.1. Summary of Findings

Prior to presenting the implications and limitations and proposing potential directions for future research, a summary of responses to this study’s research questions may help provide a brief review of chief findings and their meaning. The argument on the effectiveness of the teaching materials on source use in this study was evaluated based on the investigations of the four qualities: language learning potential, meaning focus, learner fit, and impact. Each investigation was conducted using both quantitative and qualitative analyses. The combination of the results of these investigations showed that the teaching materials had a potential for combined strengths of these qualities for the targeted group of learners in the selected instructional context. Moreover, the findings indicated an independent and interlocking relationship among those qualities. A concise summary of each investigation with primary
findings from the analyses is presented in Table 61. The first column of the table displays the four criteria of evaluation for the materials on source use. The second column lists the major data sources for each criterion, and the last column indicates the level of support for the corresponding criterion that each data source provides. The level of support of each data source for its corresponding evaluation criterion was based on the overall analysis results of the data. Accordingly, a strong support level indicates strongly positive results for a criterion. A moderate support level specifies reasonably positive results for a criterion. A weak support level shows either inconclusive or weakly positive results for a criterion. Specific descriptions of the key findings for each quality of the materials on source use are provided below.

Table 61. Summary of Key Findings of the Evaluation of the Materials on Source Use

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Data Sources</th>
<th>Level of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Language Learning Potential</strong></td>
<td>• Quantitative post-training student survey</td>
<td>Moderately Strong</td>
</tr>
<tr>
<td><em>The characteristics of the materials led to the learners’ focus on and noticing of source use features</em></td>
<td>• Quantitative analyses of the students’ computer-based records in the lesson and the tool</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>• Qualitative analyses of the students’ stimulated recalls</td>
<td>Strong</td>
</tr>
<tr>
<td></td>
<td>• Qualitative analyses of the students’ interviews</td>
<td>Strong</td>
</tr>
<tr>
<td></td>
<td>• Quantitative analyses of the students’ test scores on source use, their scores on metalinguistic and pragmatic awareness about source use, and their source use quality scores of their drafts before and after the training</td>
<td>Weak (inconclusive)</td>
</tr>
<tr>
<td></td>
<td>• Quantitative post-training student survey</td>
<td>Moderately Strong</td>
</tr>
<tr>
<td></td>
<td>• Quantitative analyses of the students’ interviews and responses in the lesson</td>
<td>Strong</td>
</tr>
<tr>
<td><strong>Meaning Focus</strong></td>
<td>• Quantitative post-training student survey</td>
<td>Moderately Strong</td>
</tr>
<tr>
<td><em>The characteristics of the materials led to the learners’ focus on and noticing of the meaning of source use in</em></td>
<td>• Quantitative analyses of the students’ computer-based records in the lesson and the tool</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Table 61 continued

**Learner Fit**

The materials were appropriately difficult for the students.

- Qualitative analyses of the students’ stimulated recalls and interviews
- Quantitative post-training student survey
- Qualitative analyses of the students’ interviews and the instructors’ interviews

The materials were engaging to the students.

- Qualitative analyses of the students’ interviews and the instructors’ interviews
- Quantitative post-training student survey
- Qualitative analyses of the students’ interviews and the instructors’ interviews

The materials were useful to the students.

- Qualitative analyses of the students’ interviews and the instructors’ interviews
- Quantitative post-training student survey
- Qualitative analyses of the students’ interviews and the instructors’ interviews

**Impact**

The experience with the materials had positive impacts on the learners.

- Qualitative analyses of the instructors’ interviews
- Quantitative pre- and post-training student surveys
- Qualitative analyses of the students’ interviews

The experience with the materials had positive impacts on the teachers.

- Qualitative analyses of the instructors’ interviews
- Quantitative pre-training instructor survey
- Qualitative analyses of the instructors’ interviews

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**7.1.1. Language Learning Potential**

The *language learning potential* quality of the materials concerns how the characteristics of the teaching materials led to the students’ noticing and focusing on features of source use, and whether the students attained any learning gains after working with the materials. The investigation into this quality of the materials was thus divided into two major parts: learning processes and learning gains.

As shown in Table 61, the combination of the quantitative and qualitative findings on learning processes showed that to some extent the intended characteristics of the materials (i.e., the web-based corpus tool, and the Moodle-based lesson) helped draw the students’ attention to and facilitate noticing of the source use features. First, the triangulation of the quantitative and qualitative findings disclosed a moderately strong level of the students’ attention and noticing of
source use features when working with the materials. Providing a moderately strong level of support for the characteristics of the materials in facilitating the learners’ learning processes, the quantitative analyses of the students’ responses to the post-training survey displayed a great consensus among the students with the six-point Likert-scale statements about their ability to focus on and notice features of source use when working with the materials. For example, 85.92% of the 71 respondents highly agreed that they were able to notice language forms of source use features when working with the materials (M=4.32). The analyses of the students’ computer-based records on the materials showed seven out of the eight participating classes on average spent about half an hour on the Moodle-based lesson with 4.20 minutes on the web-based corpus tool. Three out of the four instructors of these classes used the PowerPoint slide presentation to introduce the lesson at the beginning of the class. However, the students in the class whose instructor did not use the slide presentation and was late for 10 minutes spent only 19 minutes on the lesson. The average time on the lesson and the tool in these classes indicated a moderate commitment level to the materials. This time duration was shorter than the hypothesized time required to obtain desired effects as specified in the theory of action framework of the materials, which was about 40 minutes for the whole lesson with 10 minutes on the tool.

Moreover, the ideational analyses of the four students’ stimulated recalls, which were based on the examination of the mental and material processes in the students’ verbal reports, strongly supported the language learning potential of the materials. The analyses yielded three themes on focusing processes and four themes on noticing processes. These themes also helped identify which characteristics of the materials were involved in these learning processes. For
example, the three themes on focusing processes delineate the instruction approach in the lesson, the interface design of the tool, and the provision of authentic examples in documented essays that led to their focusing on and noticing of the target features of source use.

Further quantitative and qualitative findings strongly supported the importance of the characteristics of the materials in drawing the students’ attention to and noticing of source use features in their learning experiences. The quantitative analyses of the student post-training survey data found that the majority of the respondents, ranging from 78% to 88.73%, agreed on the role of the eight intended design characteristics in facilitating the students’ focusing on and noticing of features of source use. Supporting this quantitative finding, the relational process analyses of the four student interviews identified the same characteristics of the materials with in-depth explanations of the users. These design characteristics can be grouped into the interface design, the provision of examples and graphs in the tool, and the guided induction approach with closed questions in the Moodle-based lesson. For instance, 88.73% of 71 respondents to the post-training survey agreed with a high agreement level that the provision of multiple examples in the web-based corpus tool was very helpful to their location of focus and noticing of the illustrated source use features. Additionally, the finding of the relational process analyses elaborated this quantitative result as the student responses indicated that the examples were written by the students of the same course and were taken from the same type of papers, which made them easy to understand.

The investigation of the learning gains as the second aspect of the language learning potential quality of the material examines any learning gains in knowledge about the form and function of source use, in metalinguistic and pragmatic awareness about source use, and in
revision strategies for source use in their documented essays. As summarized in Table 61, the combination of the quantitative and qualitative findings showed a moderate level of support for the quality of the materials. The comparisons of the students’ performances on the tests on source use, the metalinguistic and pragmatic awareness questionnaire, and the drafts before and after the training did not show a significant difference between them, although the mean scores of the post-training tests and the source use quality of the revised drafts were found to be higher than those of the pre-training tests and drafts. For example, the average source use quality score of the revised drafts was about one letter grade higher than that of the pre-training drafts. The inconclusive statistical results of the students’ increase in these three areas could be due to the short intervention of the treatment.

However, the combination of the post-training survey analyses on 71 responses to Question 6 and the qualitative analyses of the four students’ interviews revealed the students’ moderately positive perceptions of their learning gains in the three areas. In terms of knowledge about form and function in source use, 90.15% of the 71 participants agreed with a moderate level of agreement that they learned new features of source use that they had not known before. Similarly, the majority of them thought that they were able to learn about different functions of citations (81.69%) or how to use them for different purposes in documented essays (80.28%).

Supporting these survey analysis results, the ideational analyses of the four student interview transcripts yielded three form-related themes and two function-related themes in terms of learning gains in source use. These themes demonstrated the students’ increased understanding about various choices of form and function in source use and their rhetorical effects on their writing. Each of these themes was also found to be well supported with the
examples from the students’ actual responses to the open-ended questions in the Moodle-based lesson which explain the source use features introduced in the materials.

In terms of metalinguistic and pragmatic awareness about source use, the descriptive analyses of the 64 responses to the eight questions metalinguistic and pragmatic awareness about source use in the pre- and post-training questionnaires revealed a more positive perception of the students’ awareness about source use after than before the training. For example, while only 53% of the participants disagreed with the statement that they did not think about how to incorporate external sources when writing a paper before the training, 63% of them disagreed with this statement after the training. Similarly, an increase of 28% of the participants after the training agreed that they thought about the rhetorical functions of citing sentences when incorporating external sources in their essays. In addition, fewer students after the training (39% vs. 50%) were unsure about how to integrate external sources to serve the purpose of the documented essay assignment effectively. The ideational analyses of the four student interviews generated three themes that show the students’ raising awareness about the effects of different choices in source use on their writing, and the role of audience and context in their source use practice.

Regarding the revision strategies for source use in their documented essays, the quantitative result of the 71 respondents to the student post-training survey showed that most of them knew how to improve source use in the first drafts of documented essays after the training. Supporting this quantitative evidence, the ideational analyses of the student interviews about their revision strategies for their first drafts produced four major themes which specify four major revision strategies after the training. These strategies were found to associate with the students’ increased knowledge about form and function of source use and metalinguistic and
pragmatic awareness about source use. Accordingly, the interviewees reported their ability to recognize and correct errors in forms of source use thanks to their better understanding of form and function in source use. They were also able to recognize differences in their source use practice in the first drafts of documented essays and in the A graded papers. Moreover, they thought about using the tool as a reference when revising their papers. Overall, in spite of inconclusive statistical results about the changes in the students’ performance on source use after the training, the quantitative survey results and the qualitative findings indicated a potential of the materials to draw student attention to and promote noticing of source use features, which led to learning gains in knowledge about form and function of source use, metalinguistic and pragmatic awareness about source use, and revision strategies for their own papers.

7.1.2. Meaning Focus

The examinations of the meaning focus quality of the materials produced both positive and negative evidence of the users’ perceptions about these qualities. The examination for the quality was also based on both quantitative and qualitative findings. The level of support of each finding for the evaluation criterion is summarized in Table 61. As shown in the table, the quantitative analyses of 71 student responses to the post-training questionnaire displayed a moderately strong level of support for the meaning focus processes as the results showed that most of the students actively focused on constructing the meaning of source use in documented essays. For example, 85.91% of the participants agreed with a strong level that they focused on understanding the features of source use in documented essays when working with the materials. The majority of them recognized the importance of meaning focus processes in their learning of source use features and their generation of strategies for source use in their own papers.
The ideational analyses of the four student interviews gave a strong level of support for the quality as they yielded seven themes related to meaning focus. These themes revealed different aspects of the students’ focusing on constructing the meaning of source use in documented essays when working with the materials. One of the themes showed that the interviewees attended to formulate the meaning of source use in documented essays by observing and comparing examples in the tool as well as relating to their source use practice in the first drafts. Moreover, both quantitative survey analyses and qualitative analyses supported a similar set of design characteristics of the materials in facilitating the students’ focus on meaning of source use in documented essays. These characteristics are the menu with colored tabs showing names of source use features, the graphs of citation frequency distributions in documented essays, the concordance lines with examples of citing sentences taken from the A graded essays, and the questions and explanations in the Moodle-based lesson. All the interviewees also had a strong positive perception of the selection of source use features in the target genre that they were writing as the main content of the materials.

7.1.3. Learner Fit

The investigation into the learner fit quality of the materials was intended to examine if the users found the materials appropriate for the targeted students. The appropriateness of the materials was evaluated in terms of difficulty, student engagement, and usefulness. As shown in Table 61, both quantitative and qualitative findings provided moderately strong support for the difficulty and student engagement qualities of the materials, and they strongly supported the usefulness of the materials.
The combination of the quantitative and qualitative findings showed that the materials were overall appropriate for the learners in the study. The quantitative analyses of the 71 students’ responses to the post-training survey produced moderately strong positive evidence of the students’ perceptions about the difficulty and engagement levels of the materials, and strong positive evidence of their perceptions about their usefulness. The majority of the respondents reported no difficulty with using the corpus tool (78.29%) and completing the lesson (77.46%) with a high agreement level. A total of 79.98% agreed with a high moderate strength that they were very interested in working with the web-based corpus tool. Moreover, 89.11% of the respondents disagreed with the statement that they did not find the corpus tool useful. However, fewer than 65% of them found the guided induction in the lesson appropriate for them in terms of difficulty and engagement.

Supporting these quantitative findings about the learner fit quality of the materials by the majority of the student users, the qualitative analyses of the interviews held with four students and two instructors yielded both positive and negative evidence of the difficulty and engagement of the materials, and strongly positive evidence of their usefulness. Overall, the appraisal analyses of the interviews with the students and the instructors showed the dominance of positively charged attitudinal resources in these interviews, indicating the positive user perceptions about the quality of the materials. The supplementary analyses of engagement resources in these transcripts found a large proportion of expanding resources in the middle level category, displaying a moderate level of the interviewees’ commitment to their evaluations of the materials. Moreover, further examinations of the coded appraisal resources in the interviews generated themes that explain the reasons for their perceptions of the learner fit quality of the
materials. The comparisons of these themes revealed many overlapping characteristics of the materials that affected the interviewees’ perceptions of more than one aspect of the learner fit quality of the material. For instance, both the students and instructors indicated the provision of the examples and graphs in the tool to be very accessible and relevant to the students because they were taken from A graded papers written for the same course. They also agreed that the materials were useful for the students of the course.

The results displayed the interdependence among the three aspects of learner fit (i.e., difficulty, engagement, usefulness). For example, both the tool and the multiple-choice questions in the lesson were found to be challenging enough and engaging for the students while the open-ended questions and instructions in the lesson might have caused difficulty to some students and made the materials less engaging for them. However, the open-ended questions, which were perceived to be challenging and less engaging by some students, were evaluated to be useful to the students because they were thought-provoking, which was important and beneficial to their learning of the materials. Specifically, the reflection component of the open-ended questions, which asked students to explain the features of source use in the A graded papers, was found to enhance the students’ understanding and uptake of source use skills by both the instructor and student users. This component was noted to be too difficult and less interesting by some users. These findings thus showed a closely related but independent relationship among these three aspects of learner fit of the materials.

7.1.4. Impact

The examination of the impact quality of the materials was based on the perceptions of both the students and instructors. As presented in Table 61, both the quantitative analyses of the
survey responses and the qualitative analyses of the interviews generated moderately strong results about the impact of the materials on their perceptions of source use.

The analyses of 139 student respondents and twenty-four instructor responses to the pre-training surveys showed their strong perception of the importance of source use instruction in the course. Nearly half of the student respondents (41.73%) reported that they had not been taught how to incorporate external sources in academic writing before taking this class. In addition, both student and instructor respondents strongly agreed that teaching materials on source use were necessary for students in the course to write documented essays. Moreover, most of the instructor respondents supported the provision of examples and explanations about source use in documented essays for students in this course as a good pedagogical approach to teach them the source use skills. The additional analyses of 71 student responses on the post-training survey revealed their good evaluation about their learning experiences with the materials. For example, 76.06% of the respondents found that the training helped them develop other strategies to learn about language features in academic writing in general.

The appraisal analyses of the interviews with the students and instructors about their experiences with the materials generated themes displaying how the experiences were perceived by the interviewees. Both the instructors and students found that the experiences with the materials were very positive thanks to a number of beneficial impacts. The students gained more knowledge about source use skills specifically and became more aware of weaknesses in their own writing and language use in general. These intellectual gains thus helped them become more confident about their writing skills. The instructors found the teaching experiences very beneficial to their writing instruction in that course. Moreover, the teaching experiences changed
their perspective about how to teach source use skills to their students and their pedagogy for the assignment in that course. However, the interviews with the users disclosed two negative impacts of the materials. The students found that the experiences with the materials negatively affected their physical and emotional status as they were tired and less motivated by the end of the lesson due to the cognitive load of the guided induction instruction. In addition, the instructors saw a shortage of collaborative learning in the teaching experiences with the materials. They suggested integrating more collaborative learning into the teaching experiences with the materials, for example through class discussions, to make the learning more engaging to the students. These findings about the four qualities of the teaching materials have led to several implications that are presented in the next section.

7.2. Implications

Not only do the findings of this study carry implications for forming the pedagogical principles for designing the online materials on source use in this study, but they may also bring to light valuable information for designers of other CALL materials for college students in writing courses. They are also intended to provide insight for both researchers and instructors into effective pedagogical applications of CALL teaching materials in academic writing instruction. As a result, this section is divided into three major subsections. The first subsection discusses the instrumental uses of the findings of the study in producing the pedagogical principles for designing materials for students in college-level writing courses. The second subsection provides implications of the study for improving writing pedagogy for college students. The last one presents the conceptual uses of the study in CALL evaluation.
7.2.1. Implications for The Pedagogical Design Principles of Teaching Materials in College-level Writing Courses

The findings about the four qualities of the teaching materials in this study underscore the enormous capacity for the integration of theoretically grounded principles for designing and implementing teaching materials for college students in writing courses. As shown in the theory of action framework for the teaching materials in this study (see Figure 1), the principles for designing and developing the materials were theoretically informed by SFL, the Noticing Hypothesis in SLA, and the DDL approach in Corpus Linguistics. These theoretical principles led to the development of the two major components (i.e., the Moodle-based lesson and the web-based corpus tool) and the three design characteristics of the teaching materials on source use. The design characteristics are the genre-based approach, input flood coupled with input enhancement, and the guided induction approach. The implications of each of these theoretical principles for designing and implementing teaching materials for students in college-level composition courses are discussed below.

**Pedagogical principle #1: The genre-based approach**

The genre-based approach in the materials design and development in this study is primarily based on SFL, which views language as a resource of choices from which users can construct different kinds of meanings to perform different communicative functions based on contexts, and Corpus Linguistics, which is the methodological analysis of naturally occurring language on the basis of a principled collection of texts. Accordingly, the teaching materials on source use for college students under evaluation in this study were based on the results of the genre-based linguistic analyses of 76 A graded documented essays, which are in the target genre
and were written by students in the same course. The findings of the study showed that both the students and instructors strongly evaluated the effectiveness of this design characteristic of the teaching materials on source use. For example, the quantitative results of the student post-training survey indicated that the use of the texts in the target genre helped the students focus on the target features of source use and construct their meaning in documented essays. The qualitative analyses of the student interviews also displayed the students’ positive perception of the use of A graded documented essays. Because the texts were written by other students in the same assignment of the same course, they facilitated their understanding of source use features while examining the examples in the corpus tool. Both instructor interviewees in the study highly valued the genre-based linguistic analyses as the content of the materials on source use. To them, the selection of texts in the target genre greatly contributed to the learner fit quality of the materials, which then led to the learners’ learning gains in knowledge and skills about source use.

These positive results of the users’ evaluation of the genre-based approach in the teaching materials on source use support the current argument for this theoretical principle in the design and development of teaching materials to improve the writing pedagogy for students in college-level courses (Aull, 2015; Bawarshi and Reiff, 2010; Lancaster, 2014; Mohan, 2001; Nesi, 2014). Teaching materials for students in college-level composition courses should provide them with both generic and lexicogrammar features in example texts of the target genre. The shortage of the college students’ prior exposure to academic writing and linguistic variations across genres due to changes in communicative contexts in this study suggest that both instructors and materials designers for college students should incorporate the results of language use patterns in
genre-based linguistic analyses of texts in the target genre to help students gain more knowledge and awareness about language use. The sharing of these language use patterns assists in their understanding of the underlying values of the genre, which is seen as a social practice in SFL. As the findings of this study showed, this design characteristic of the materials on source use facilitated the students’ attention to and notice of source use features as they found the content of the materials directly relevant. This characteristic is indicated to associate and enhance the next design principle of the materials design.

**Pedagogical principle #2: Input flood coupled with input enhancement**

The second design principle of the materials on source use is input flood coupled with input enhancement. This principle is theoretically informed by the Noticing Hypothesis in SLA and the data-driven language learning (DDL) approach in Corpus Linguistics. It is also supported by the SFL genre-based approach. Following the DDL approach (Johns, 1991, 1994; Gilquin & Granger, 2010), there were two major components in the teaching materials on source use in this study, which are the web-based corpus tool and the Moodle-based lesson. Each of these components was designed with the intention of drawing the students’ focus on and notice of source use features based on the Noticing Hypothesis (Schmidt, 1990, 1993, 2001, 2010) and the role of noticing in inductive learning (Flowerdew, 2015; Papp, 2007). Both the quantitative and qualitative results of the study showed that the students held a positive perception of these characteristics in each component. They found the user interface of the tool with a search menu very user-friendly. They also saw the benefits of examining the multiple examples of citing sentences and graphs on the tool in understanding of source use features. Similarly, the multiple choice questions in the lesson were found to be engaging and appropriate for the students in the
study. These questions helped them attend to specific features of source use in the tool, which then led to their learning gains. Supporting these findings with the students, the instructor interviewees identified these characteristics of the materials on source use as important factors to the learner fit quality of the materials. These positive findings of the study about the importance of these characteristics in the four qualities of the materials suggest that the second principle might work well for college students in other writing courses.

Materials designers for college-level composition courses should integrate this principle of input flood coupled with input enhancement into their teaching materials so that students will be more likely to focus on and notice target features of language use. Being able to attend to and notice these features might increase the chance of learning them for students. Future web-based corpus tools and materials, which provide multiple examples and data about a target feature of language use, should enhance the provision of such input so that the illustrated features in the input are noticeable to students. As shown in this study, some techniques for input enhancement could be color-coded features, visuals, and a user-friendly interface. Finally, the findings of the study indicated that the principle of input flood coupled with input enhancement in the materials on source use facilitated the learners’ induction of source use features in documented essays, which is the third design principle of the materials in the study. The next part continues to discuss how the guided induction approach would work for designing teaching materials in college-level writing courses.

**Pedagogical principle #3: The guided induction approach**

The third design principle, which is the guided induction approach, integrates the theoretical bases in the DDL approach in Corpus Linguistics and the Noticing Hypothesis in
SLA. Accordingly, learners’ inductive learning is considered as a core of data-driven language learning with a number of benefits (Bernardini, 2002; Gilquin & Granger, 2010; Johns, 1991, 1994), and noticing plays a critical role in their induction (Flowerdew, 2015; Papp, 2007). In order to facilitate and promote learners’ inductive learning, other researchers have supported guided induction in DDL (Flowerdew, 2009, 2015; Johansson, 2009; Smart, 2014). As a result, the materials on source use in this study were developed to guide the students’ induction of rules and strategies of source use in documented essays. As shown in the theory of action framework for the materials, four major characteristics of the materials were realized following this principle, which are a corpus of A graded papers, citing sentences as concordance lines, patterns of each source use feature in the corpus, and the 4I’s approach in the Moodle-based lesson.

The findings of the study revealed that while most of the users evaluated the first three characteristics positively, mixed results were found on the last characteristic. However, all agreed on the usefulness of the approach. In other words, they all saw the benefits of this approach in helping the students become independent writers. As the results of the student post-training survey and interviews showed, the use of graphs and examples in the corpus of A graded papers assisted in drawing the students’ focus on and enhancing their noticing of target source use features, which was beneficial to their understanding of those features in the target genre. Mixed results were found on the effectiveness of the induction approach of the lesson. While some students perceived that the inductive questions were appropriate for them and beneficial for their learning, some students found those questions not engaging and difficult. Similarly, the two instructors held a contradictory view about the value of the induction approach. While both of them saw the benefits of this approach, they would love to change the pedagogy in this lesson to
make the learning more engaging and appropriate for their students. Specifically, they suggested combining the induction approach in the lesson with collaborative learning through class discussions so that the instructors could facilitate their inductive learning more effectively.

These findings of the study suggested that the guided induction approach would be useful to students in college-level writing courses. Materials designers and instructors should incorporate this principle in developing teaching materials for college students in similar courses based on a number of benefits which were both theoretical and empirical, as shown in this study. However, the mixed results of the learner fit quality of this principle in the materials on source use imply that the guided approach in future materials for college students in writing courses should consider incorporating more collaborative learning and instructor facilitation to promote the students’ inductive learning.

Overall, the three design principles, which are theoretically informed by SFL, Corpus Linguistics, and SLA, were empirically supported by the findings of the evaluation of the materials on source use in this study. The majority of the users of the materials on source use showed positive perceptions of the language learning potential, meaning focus, learner fit, and impact qualities of the materials. For instance, the materials in the study helped most of the students gain knowledge about various forms and features of source use to some extent. The students became more aware of the importance of source use in their papers that they were writing for the classes. Because the study was conducted in naturalistic settings and in multiple classes with the participation of different instructors, these positive results of the four qualities of the materials on source use in this study imply that the three theoretically informed design principles of the materials on source use in this study would probably work for college student
writers who share the same characteristics as the students in this study. The application of these principles in the materials design and implementation might enhance the students’ attention to and noticing of a target writing feature. It may also promote the students’ construction of meaning of the feature in the target genre. These processes will probably lead to their learning gains in knowledge and awareness about that feature and language use in general. Moreover, instructors who use such materials or follow these design principles to develop and implement their own teaching materials for college students in writing courses might have a positive teaching experience and get a new perspective to improve their writing pedagogy.

7.2.2. Implications for Improving Writing Pedagogy in College-level Writing Courses

The findings of the study about the four qualities of the teaching materials on source use give several important implications for improving instruction in college-level writing courses. The first implication is that language-level instruction on source use is necessary and beneficial to students in college-level writing courses. Moreover, the positive findings of the study on the four qualities of the materials support the current genre-based approach in writing pedagogy for students in similar college-level writing courses (Aull, 2015; Bawarshi & Reiff, 2010; Lancaster, 2014; Mohan, 2001; Nesi, 2014). The genre-based approach indicates that a writer needs to be informed about genre specific features to produce a text of that target genre. As the survey results of 139 student responses showed, nearly half of the students had not received any language-level instruction on source use in particular and language features of academic writing in general. Therefore, the majority of them saw the need for explicit language-level instruction on source use and academic writing in college level writing courses. Furthermore, the analyses of the twenty-four instructor responses also revealed a strong agreement among more than half of
the instructors on the importance of giving language level instruction to the students in the courses due to their shortage of prior knowledge and practice in academic writing, and unfamiliarity with common genres in college-level courses.

The positive evidence of the four qualities of the teaching materials, especially in terms of learning gains and impact, suggests instructors in college-level writing courses should integrate corpus-based analyses and guided induction into their writing instruction for college students. Accordingly, the integration of corpus-based analyses into the pedagogy for college-level courses may bring a number of benefits for the students. As the results of this study revealed, the sharing of patterns of source use features in the A graded papers of the same genre not only helped the students gain more knowledge about the features in the target genre, but also raised their awareness about the relationships between choices in source use and the contexts of use. In addition, based on the results from the survey and interview analyses, the provision of multiple examples from the same genre that the students were writing was reported to allow them to construct the meaning of source use in their own papers more effectively. Guided induction in the DDL approach might give students more opportunities for reflection, which is considered to facilitate their learning transfer to new writing tasks. For example, the students in this study were guided to reflect on their observations of patterns of source use features in the A graded papers and to compare with their source use practice in the first drafts. Consequently, the quantitative and qualitative results of the study showed that both the students and instructors evaluated the reflection component of the teaching materials as valuable as it helped them transfer the knowledge learned from the lesson to their own practice for the assignment. This
writing transfer to their writing assignment was perceived to be beneficial to the students’ writing development throughout and beyond the course by both the instructors and the students.

However, the mixed findings, which indicated both the users’ negative perceptions of the difficulty and engagement level of guided induction and their positive perceptions of the usefulness of this approach, imply that the guided induction approach should be improved to enhance its effectiveness. First, based on the instructors’ evaluation of the materials, the guided induction approach in the instruction of the teaching materials should integrate more collaborative learning through group discussions or class discussions to facilitate the students’ processing of the materials and motivate them to complete the lesson. Secondly, as the results of the student interviews indicated that they were not familiar with the guided induction approach, more time and guidance from the instructors would be necessary for them to succeed in such inductive learning tasks.

The third implication is relevant to the selection of teaching materials to improve writing pedagogy in similar writing courses. The positive results of the four qualities of the materials on source use suggest that the characteristics of the teaching materials would work well for the target group of learners in a similar context. For example, the provision of authentic examples from the students’ A graded papers in documented essays helped draw the students’ attention to and noticing of source use features in the target genre. The relevance and authenticity of the content of the materials engaged the students’ interest and facilitated their understanding of the target language features in the genre that they were writing. Besides positive impacts on the students, the characteristics of the materials had positive effects on the instructors who used the materials on source use in their classes. These findings thus imply that instructors should select
teaching materials with the identified design principles and characteristics in this study for their students in similar writing courses. The use of such teaching materials may help support their writing instruction in the course and change their perspective about how to approach a writing assignment so that their students could succeed in a specific writing task and transfer their knowledge and skills into new writing tasks.

The inconclusive quantitative results of the language learning potential quality and some negative evidence of the learner fit and impact qualities of the teaching materials on source use indicate the role of instructors in the implementation of teaching materials in college-level writing courses. In other words, instructors affect the impacts of implementing the materials in their classrooms. As the finding of the study showed, the students in the class whose instructor was late and did not use the PowerPoint slide presentation to introduce the lesson were not as engaged into the materials as those in other classes. In addition, the students in the class whose instructor provided a clear rationale for the lesson and her insight into the content of the lesson were strongly positive about their learning gains and the impacts of the learning experience with the materials. These findings suggest the important role of instructors in promoting the effectiveness of teaching materials in similar writing courses.

7.2.3. Implications for CALL Evaluation

The study was conducted in an authentic instructional setting; therefore, its results about the effectiveness of the applications are not intended to be generalized across different instructional contexts. However, the evaluation framework and the methodology of the study might be a viable methodological model for future CALL research as they help formulate a relevant and context-specific argument on a CALL use.
First, following Norris’s (2016) suggestion on the development of a theory of action in CALL evaluation studies, the evaluation of the teaching materials was based on the theory of action framework which integrates the criteria in Chapelle’s (2001) CALL task appropriateness framework into Patton’s (2008) linear logic model. The theory of action framework for the teaching materials helps show the associations between the theoretical grounds in CALL materials design and development, the expected learning processes, and outcomes for evaluation. The framework thus assists in shaping the research questions or criteria of evaluation and identifying specific research methods to investigate each of the criteria. In this dissertation, the theory of action framework for the teaching materials consisted of four major components, which are theoretical grounds of the teaching materials, their associated design principles, hypothesized learning processes (e.g., focusing, noticing, and meaning focus), and expected outcomes or impacts. The framework also showed the roles of the four major criteria of evaluation and nine research questions in the study. Moreover, it helped direct which research methods to investigate each research question. For example, stimulated recalls were chosen to examine the students’ learning processes while working with the materials.

The mixed-methods research design in this study would be also appropriate for future CALL evaluation studies as it allows capturing the complexities of both the processes and the products resulting from CALL use, especially when the intervention is short. As language learning is a complicated process due to the influence of multiple factors including contextual factors and individual differences, the triangulation of both quantitative and qualitative results is crucial to capture both processes and products of learners when using CALL materials. As shown in this study, although the quantitative analyses of the students’ performances on the tests
and writing drafts did not yield statistically significant results, the additional quantitative survey results and qualitative analyses provided more positive results about the students’ perceptions of their learning gains and processes when working with the materials. Moreover, the qualitative analyses provided explanations about how and why a certain quality of the materials was perceived by the students. These explanations were crucial to demonstrate the effectiveness of the teaching materials as they helped illuminate the hypothesized learning processes and products of the characteristics of the materials in the theory of action framework. In addition, due to the shortness of the intervention and other instructional factors in naturalistic settings, it would not be realistic to expect a significant change in the students’ performance on source use. Therefore, the examination of only the products in this study would have missed a comprehensive understanding of the effectiveness of the materials on source use.

The last important implication is based on the qualitative findings of stimulated recalls and interviews. Particularly, the theoretically informed analysis approach using SFL theory should be adopted in future research investigating learners’ perceptions and learning processes because it allows an examination of subtle nuances in participants’ evaluations of their learning experiences as supported by other researchers (Howley, Mayfield, & Rosé, 2013; Huffman, 2015; Mohan, 1986, 2001, 2011; Mohan & Slater, 2005, 2006; Slater & Butler, 2015; Slater & Mohan, 2010; To, Le, & Le, 2015). The theory provides theoretical and analytical tools to investigate the users’ perceptions through their language use. For example, the ideational analyses of the students’ interviews and stimulated recalls in this study were shown to yield a wealth and richness of evidence of hypothesized learning processes and outcomes. At the same time, the appraisal analyses of the users’ interviews about the learner fit and impact qualities of
the materials captured not only the polarity, but also the strength and the commitment of the interviewees to their evaluations of the teaching materials.

7.3. Limitations

The findings of this study should be carefully considered because it was conducted in a naturalistic instructional context. While there are a number of practical applications of this dissertation research, several limitations should also be acknowledged. First, because the instructor and student participants in this study were recruited from real courses in a real instructional context, it was impossible to conduct a random sampling of both the instructors and the students for the study. Although the instructor and student participants represented the characteristics of the target population in a college-level writing course, the results could be more rigorous with a random sampling of the instructors and the students in the course. Moreover, the researcher did not have control over the recruitment of the instructor participants of the study. As explained in the sampling design of the study, the instructors were recruited using the snowballing technique as they were invited through my personal contacts and the participants of the study. In addition, there were also many variations in the instructional characteristics of the participating classes in this study. For example, the instructor participants had various backgrounds and used different teaching materials including scoring rubrics, assignment sheets, and textbooks to teach the students in their sections about the documented essay assignment and source use skills. These classes had several differences in terms of teaching schedules and data collection procedures. For instance, an instructor and several students were late for the classes, which might have influenced their experiences with the teaching materials. Furthermore, the students of these classes might have received instruction
and help with source use from other sources such as their peers, tutors, and the staff from the Writing and Media Center during their completion of the writing assignment. These contextual factors might have affected the learning gains in source use besides those obtained from the training.

The second limitation of the study concerns the two instruments that were intended to measure the learners’ knowledge and metalinguistic and pragmatic awareness about source use before and after the training. As reported earlier, these two instruments did not have good reliability indices, especially the pre- and post-tests on source use. The low reliability indices of these instruments could be due to several main reasons. The first reason was the limited number of items in both instruments which was fewer than 10 items. The inclusion of a small number of test items in these two instruments was because of the constraint of time. Both the instructors and the students did not want to spend much time on these activities. The second reason for the low reliability of these two instruments was that the students might not have felt much motivation and commitment to taking these instruments seriously. As described in the data collection procedure, two instructors assigned the instruments as optional activities at home while the other two instructors who used them during their class time did not count the scores on these instruments towards the students’ grades. These practical constraints of the naturalistic instructional setting were out of the researcher’s control, and might have limited the results of the study. Another reason for the low reliability of these two tests might come from the items in these tests themselves. These items might not be good enough to measure the construct of the learners. More rigorous item analyses of the two tests should be done to remove or revise unreliable items in these tests.
Next, the analyses of any changes in terms of source use quality in the students’ drafts would have produced more insightful results if data about the students’ writing processes across these drafts were recorded. Advanced composing tools which capture the students’ writing processes might provide new avenues to explore this area. Such computer-based logs of the students’ working processes on the drafts would have offered a more comprehensive understanding of the students’ changes in revision strategies and actions in terms of source use across their drafts. Similarly, further analyses of actual revisions on source use across the drafts would have complemented the results of the source use quality score analyses and the reported revision strategies in the student interviews.

Finally, it would have been worthwhile to examine further if there was any change in the overall writing quality of the students’ drafts after the training, rather than only the source use quality in this study. These results could have helped us see if the training influences their overall academic writing development. The instructors’ overall grades on these drafts could have been collected for the analyses. Moreover, interviews with the instructors about their evaluation of the students’ drafts after they finished their grading would have provided another important piece of evidence of the language learning potential of the materials.

7.4. Directions for Future Research

Several directions for future research are suggested from the limitations of the study as presented above. In order to expand the generalizability of the research findings, more CALL evaluation studies should be conducted in other similar contexts to examine the four qualities of the materials. Several changes to the implementation of the materials and data collection should also be considered for a better understanding of the four qualities of the teaching materials. First,
the invention could be integrated in more than one class. Instructors could introduce the tool and integrate the content of the lesson into their instruction in more than one class period. Moreover, revision records of students’ drafts should be obtained to track any specific changes that they make across the drafts. Future replication studies should consider participant characteristics in examining each quality of the teaching materials due to the various factors in naturalistic instructional settings. The results of such studies will help strengthen the argument for the theoretically informed design characteristics of the materials in this study. In addition, the findings of the evaluation studies in different contexts allow us to see if there are any contextual factors on the four qualities of the teaching materials.

As the quantitative results of the students’ learning gains in this study were inconclusive, future research can extend the investigation of the language learning potential of the teaching materials as a stand-alone topic. As explained earlier, the reliability indices of the measurement instruments in this study were not sufficient enough due to the constraints of the naturalistic instructional setting and the lack of item analyses in developing those instruments. Future research conducted in a similar instructional context should consider the number of measurement instruments to make sure that student participants will have enough time and commitment to take them seriously. Moreover, researchers should take more rigorous steps to develop reliable measurement instruments before using them for data collection. Secondly, to make the connection between hypothesized processes and outcomes in the theory of action framework for the teaching materials more visible, future research should examine how the time spent on the materials correlates with performance on the tests and the drafts or not. Other learner and instructional characteristics such as learners’ experience with CALL materials and the
instructor’s types of instruction should be examined for any associations with the students’ learning gains.

Moreover, a longitudinal evaluation study on the impact quality of teaching materials would help complement the results of short-term evaluation studies. As the results of the language learning potential and impact qualities in this study showed, the teaching materials were beneficial to the students’ gains in knowledge and metalinguistic and pragmatic awareness about source use features in the type of essays that they were writing. The teaching experience with the materials changed the instructors’ perspective about writing instruction for college students. Therefore, it would be worthwhile to investigate how such changes in knowledge and metalinguistic and pragmatic awareness would transform over a period of time. A research question of a future longitudinal study might be how a student transfers the knowledge and skills from the teaching materials for documented essays into other writing assignments with different contexts such as writing a research paper in another course. Similarly, another question of interest will be how a teacher changes his or her teaching practice with their students in the same courses or other courses after that experience.

Finally, the results of this study also stimulate a wealth of questions for future research and application of CALL materials to improve writing pedagogy for college students in college-level writing courses. The positive perceptions of both the instructors and students in this study have suggested that future studies should continue to explore how theoretical grounds in SFL, SLA, and Corpus Linguistics can provide other design principles for teaching materials in college-level writing courses. As the target writing feature of this study is source use in documented essays, future work could look at other academic language features in other
common genres in college-level writing courses to promote language-level instruction for college students. Such work will make these features visible and bring a lot of benefits as suggested in this study.

7.5. Conclusion

To conclude, this dissertation makes a contribution to the writing pedagogy for college students. It represents the first of its kind in scholarship exploring the interdisciplinary integration of SFL, SLA, and Corpus Linguistics in the design and development of CALL teaching materials on source use for college student writers in college-level writing courses. Moreover, it provides and evaluates the theoretically informed design principles for the teaching materials on source use for college students. A critical and novel aspect of this study concerns its development and use of the theory of action framework for the teaching materials, which led to the conceptualization and development of research questions and methods to evaluate the effectiveness of the materials. The positive perceptions of the majority of the participants in this study have indicated the promising area of integrating Applied Linguistics and Rhetoric to improve the current pedagogy for college-level composition and communication courses. Despite a few methodological limitations, current results of this study have given important practical and theoretical implications for both practitioners and researchers in related fields.
REFERENCES


Kytö (Eds.), *Corpus linguistics: An international handbook* (pp. 1286, 1304). Berlin: Walter de Gruyter.


Equinox.


Thompson, P. (2005a). Aspects of identification and position in intertextual reference in PhD theses. In E. Tognini-Boneli & G. Del Lungo Camiciotti (Eds.), *Strategies in academic discourse* (pp. 31-50). Amsterdam, the Netherlands: John Benjamins.


APPENDIX A. ENGLISH 250 DOCUMENTED ESSAY ASSIGNMENT

SHEET TEMPLATE

English 250
Assignment 5: Documented Essay
(minimum of 1,250 words plus a Works Cited page)

Assignment

Now that we have read and discussed issues related to several specific topics, you are ready to write a paper in which your goal is to present multiple viewpoints on it and discuss the reasons some people think one way and others think other ways. Your goal is not to discover who is “right.” Your goal is to understand the issues that impact how people view this topic. As a class, we will brainstorm specific issues you might address in your paper.

Note: Even though this is the longest paper of the semester, you’ll need to narrow your focus. Even in a 5-page paper, you simply can’t address a large, complex topic like diversity, the environment, or education.

You must use at least four sources for your essay. If you use sources on the Internet or from texts we have not read, you must attach a photocopy of these materials to your essay. You may not use a paper or portion of a paper that you have written for another course.

Planning and Drafting

This assignment, more than any other this semester, requires careful planning. To a large extent, the success of your paper will depend on how thoroughly and diligently you carry out the writing process. It will be important to map out a schedule for yourself, using the calendar example on page 189 EW as a model. Below are some suggestions for getting started.

1. Restrict your topic to an area of the subject that you can handle in a short paper. State your topic in the form of a question and then decide whether or not you can answer it within the limited scope of your paper. If you tightly restrict your topic, you’ll find that you can construct a much more complete and satisfying paper.

2. Once you’ve focused your topic, collect your evidence from readings in our class and possible other sources, and formulate a preliminary thesis. As you write your draft or outline, test your thesis and, if necessary, modify it as you go. Your instructor will want to see your preliminary thesis statement at this point.
As you can see, you need to complete several preliminary steps before you begin writing in earnest. Between composing your rough draft and your final paper, you’ll need to keep several additional things in mind:

1. **Consider your readers.** How much do your readers know about your topic? Are they interested in it? Do they have strong opinions about it? Do not assume that your readers have read the sources you have read or that they automatically agree with you.

2. **Keep in mind your purpose:** to present a multifaceted view of positions on your topic and a discussion of what is salient to those who adopt one point of view over others.

3. **Interweave your sources into your paper to substantiate your thesis.** Be careful not to rely exclusively on one source. Verify the accuracy of your information and quotations.

4. **Make photocopies of your sources because you will be providing them to your instructor with the finished paper.**

**Documentation**

In documenting your sources, you may use the MLA, APA, or other style used in your discipline. MLA is used widely in the humanities and APA in the social sciences. For examples, see your handbook or articles written in your field.

Be careful not to plagiarize. There are chapters about this in both of your textbooks and you can also ask your instructor. By the time you are in ENGL 250, the ISUComm Foundation Courses program expects that you fully understand what plagiarism and academic dishonesty are, why they are wrong, and how to avoid them. Papers on which plagiarism or academic dishonesty are detected will be discussed with the Director of ISUComm Foundation Courses and will likely be referred to the Dean of Students Office for further action.

If you use exact words from a source, you must use quotation marks, in-text citations, and a Works Cited page. Also, check to see that you haven’t used too many quotations in the paper; paraphrase or summarize the information instead, and know that these two forms also require in-text citations coordinating with an entry on the Works Cited page. **Your instructor will check your use of sources against the sources themselves that you have provided. Failure to provide photocopies of the required sources (materials you have summarized, paraphrased, or quoted directly in your paper) will result in an automatic “Needs Work” on both the Substance and the Delivery portions of the rubric for this paper.**

**Evaluation Criteria**

Since this is your last out-of-class essay (except for the revision paper), you will want to demonstrate that you can successfully employ all the strategies and techniques we’ve talked about in the course. Some of them are listed below:
• a focused topic with a thesis that goes beyond the points made in the essays we read
• relevant, concrete details that support your thesis
• a logical pattern of organization; transitions form one idea to the next that guide your reader through your material; unified paragraphs
• language and tone adapted to your subject, purpose, and audience.
• a variety of sentence types (see Chapters 25-30 EW for guidance here)
• accurate, well-documented use of sources, including summaries, paraphrases, and direct quotations (see Chapter 17 and 18 EW and Part 4—Research and Arguments—in EA for guidance)
• few or no errors in correctness that distract the reader

At a minimum, your paper needs to satisfy these criteria. However, the grade is based not just on whether a feature is present or not, but on how well it has been integrated into your paper. Refer to the rubric for this assignment.
## APPENDIX B. AUTHOR INTEGRATION

Table B1. Types of Author Integration

<table>
<thead>
<tr>
<th>Type</th>
<th>Operationalization</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **Integral (IR):** the name of the cited author or the source occurs as part of the citing sentence. | A1. NP as subject + reporting verb (e.g. the researcher argues that)  
A2. author as agent (i.e. by NP, e.g. written by William Nguyen)  
A3. author as adjunct (According to/In contrast to + NP, e.g. according to William Nguyen)  
A4. source location: in/on/from + NP (e.g. an article on Forbes…) | E.g.1: An article on Forbes, written by a contributor<IR>, goes into great detail on why he believes net neutrality is a bad idea. (Text 16_F14_A)  
E.g.2: The National Institute on Alcohol Abuse and Alcoholism<IR> “estimates that 25-30% of violent crimes in the United States are linked to the use of alcohol. According to a report from the U.S. Dept. of Justice, that translates to about 5,000,000 alcohol-related violent crimes per year” (SAFER) (Text 6_F14_B)  
E.g.3: a study conducted by the Research Institute on Addictions<IR> found with chronic partner abusers that “the odds of sexual abuse were eight times higher on days when men were drinking; the odds of severe abuse were 11 times higher” (SAFER Organization) (Text 6_F14_B) |
| **Non-integral (NR):** the cited author/source is presented in parentheses, or via superscript number leading to a footnote, endnote or bibliography. | NR:  
A1. Author in parenthesis (NP) & no presence of reporting verbs  
A2. It-structure with a parenthesis and cited source  
It +be+ reporting verbs in past-participle + that/why/ing-clause/clause (e.g.: it is argued that learning second language should take time (Ken, 2010))  
A3. passive voice + reporting verbs & with a cited source in a parenthesis. | E.g.1: The United States is a culture with highly meat-based diet; worldwide 2 billion people live on that kind of animal-reliant nutrition <NR>(Pimentel)<NR>. (Text 9_S15_B)  
E.g.2: In the past thirty years U.S. foreign aid to Haiti has caused to their domestic rice consumption to drop to a third of its past amounts <NR> (Kenny, 2011)<NR>. (Text 19_S15_B) |
| **Other (OR):** the cited author is not presented in parentheses, or in a sentence. | OR:  
A1. NP as subject + reporting verb (e.g. supporters argue that)  
A2. Author/source as agent (i.e. by NP, e.g. argued by supporters)  
A3. Author/source as adjunct | E. g.1: Many people<OR> are now asking the tough questions, mainly to the effect of, why were we not made aware of this option by doctor’s themselves? (Text 6_F14_B)  
E.g.2: In numerous studies<OR>... |
Table B1 continued

<table>
<thead>
<tr>
<th>The source is vague and unidentifiable.</th>
<th>(According to/In contrast to + NP, e.g. according to opponents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4. Author/source in a source location (In +NP)</td>
<td>that have been conducted over the years on alcohol and marijuana, a few key pieces of information have been discovered. (Text 6_F14_B)</td>
</tr>
<tr>
<td>Vague subjects (e.g. many/some/several/few people, one, other+NP, opponents (to), supporters (of), an article, one study, multiple articles, one viewpoint, the other viewpoint, a statement, a speech, criticism, it)</td>
<td>E.g.3: &lt;OR&gt;The criticisms&lt;/OR&gt; that followed attacked the legislation, saying it was too vague and that because of opaque wording in the bills almost anyone could be granted access to the program and to a medical marijuana card. (Text 6_F14_B)</td>
</tr>
<tr>
<td>B1. It-structure without a cited source in a parenthesis; It +be+ reporting verbs in past-participle+ that/why/ing-clause/clause (e.g.: it is argued that learning second language will take time.</td>
<td>E.g.4: &lt;OR&gt;People in opposition of legalizing marijuana&lt;/OR&gt; typically state three main points as to why we should not legalize it. (Text 6_F14_B)</td>
</tr>
<tr>
<td>B2. passive voice + reporting verbs &amp; without a cited source in a parenthesis. NP+be+ reporting verbs in past-participle+ that/why/ing-clause/clause (e.g.: NP were/have been argued that...)</td>
<td>E.g.5: &lt;OR&gt;One&lt;/OR&gt; could argue that alcohol and tobacco are more of a gateway drug than marijuana is. (Text 6_F14_B)</td>
</tr>
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</table>
## APPENDIX C. TEXTUAL INTEGRATION

Table C1. *Types of Textual Integration*

<table>
<thead>
<tr>
<th>Type</th>
<th>Operationalization</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insertion</strong></td>
<td>The writer borrows original words or quotes a cited proposition directly from its cited source. &lt;br&gt; - presence of quotation marks &lt;br&gt; - quoted proposition is at least a clause or a whole sentence</td>
<td>E.g.1: One could argue that alcohol and tobacco are more of a gateway drug than marijuana is, because <em>“in the sense that marijuana use typically precedes rather than follows initiation of other illicit drug use, it is indeed a ‘gateway’ drug. But because underage smoking and alcohol use typically precede marijuana use, marijuana is not the most common, and is rarely the first, ‘gateway’ to illicit drug use. There is no conclusive evidence that the drug effects of marijuana are causally linked to the subsequent abuse of other illicit drugs”</em> (Szalavitz). &lt;br&gt; (Text 6_F14_B)  &lt;br&gt; E.g.1: According to 8 U.S. Code § 1251, <em>“any alien who entered the United States without inspection … is deportable.”</em> (Text 43_F14_A)</td>
</tr>
<tr>
<td><strong>Assimilation</strong></td>
<td>The writer uses his/her own words to integrate a cited proposition: &lt;br&gt; - Have no presence of quotation marks.</td>
<td>E.g.1: The earliest evidence of cannabis in the world dates back to about 12,000 B.C. and according to Ernest Abel, author of <em>“Marihuana: The First Twelve Thousand Years”</em>, it most likely originated and evolved in the Central Asian Steppes region, or more specifically, Mongolia and Southern Siberia. (Text 6_F14_B)</td>
</tr>
<tr>
<td><strong>Insertion &amp; Assimilation</strong></td>
<td>The writer both uses his own words and borrow original words from a cited source &lt;br&gt; - presence of quotation marks &lt;br&gt; - quoted words run in with the text &lt;br&gt; - quoted proposition is a phrase</td>
<td>E.g.1: According to Duhita Mahatmya and Lisa Gring-Pemble, the Development, Relief, and Education for Alien Minors (DREAM) Act has two goals: to clearly define a state’s right to provide illegal immigrants in-state tuition and to grant undocumented individuals ages 12 to 35, when enacted, <em>“a path toward conditional permanent residency”</em> (80). (Text 43_F14_A)</td>
</tr>
</tbody>
</table>
### APPENDIX D. ADAPTED TAXONOMY OF CITATION FUNCTIONS

Table D1. Adapted Taxonomy of Citation Functions

<table>
<thead>
<tr>
<th>Type</th>
<th>Descriptions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Identification</td>
<td>This citation is used to present specific viewpoints represented in the sources or school s of thought on the topic under examination (Harwood, 2009, 2010)</td>
<td>(1) Supporters of tuition equity argue that illegal immigrants are motivated to achieve in the classroom when the opportunity to attend college is affordable. (Text 43_F_A)</td>
</tr>
<tr>
<td>(Harwood, 2009, 2010)</td>
<td>This citation is used to identify exemplars of a position or a viewpoint by providing “representatives and vivid examples of a particular line of argument.” (Lunsford et al., 2014)</td>
<td>(2) Tuition equity supporters conclude that undocumented individuals with a realistic path for obtaining higher education are more likely to remain in school. (Text 43_F_A)</td>
</tr>
<tr>
<td></td>
<td>This citation can also explicate researchers’ standpoints in detail, or trace the development of a researcher’s or field’s thinking over time through the sources. (Lunsford et al., 2014; Harwood, 2009, 2010)</td>
<td>(3) Supporters of tuition equity also point out that these laws do not inhibit United States citizen’s ability to go to college. (Text 43_F_A)</td>
</tr>
<tr>
<td></td>
<td>This function echoes Petric’s (2007) partial function of “establishment of links between sources” with a similar claim, similar view, or argument. For example, this type of citation “also includes cases where a common statement is attributed to a group of studies or authors, followed by a list of citations (Hyland, 2000). This type of citation attests to the writer’s ability to detect what is considered common knowledge in the field.”</td>
<td>(4) Bostock cites one advantage of peer review as “giving a sense of ownership of the assessment process” (1). Topping expands this view, stating that “peer assessment also involves increased time on task: thinking, comparing, contrasting, and communicating” (254).</td>
</tr>
<tr>
<td>Position Support</td>
<td>(Mansourizadeh and Ahmad, 2011) This citation is used to strengthen a position, a claim or an argument, and a proposed solution of either the writer or the author by: - justifying the procedures and materials. - justifying the findings/results of the study</td>
<td>(2) This conclusion is supported by the research of Stella M. Flores, who found that foreign-born noncitizen Latinos were 1.54 times more likely to attend college if they resided in states with tuition equity policies (260). (Text 43_F_A)</td>
</tr>
<tr>
<td>(Petric, 2007)</td>
<td>Coffin, 2009) A citation could achieve this function by: - Strengthening position by referencing evidence. - Using authorities to reinforce own position. - Using one authority to reinforce another. (Lunsford et al., 2014, p. 430) This rhetorical function of citation is called “developing and supporting a claim”. “Even academic audience expect to be convinced and one of the most important strategies for a writer is to use sources to amplify or support a claim.”</td>
<td>(3) According to the National Immigration Law Center, illegal aliens compose less than two percent of the class of 2014, of which only a small number will enroll in college, meaning most states would only see tuition equity applied to a few hundred students. (Text 43_F_A)</td>
</tr>
<tr>
<td></td>
<td>This function is called as “topical” in Harwood’s (2009, 2010) framework, “establish the context” in the textbook (Everything is an Argument, 2014), and the function of “providing a rationale for niche for thesis” identified by Coffin (2009). It is also listed as one rhetorical purpose under the category of “support” (Petric, 2007) and “supporting” in Harwood’s (2009, 2010) framework.</td>
<td>(4) The statistics that follow chart the performance of ‘A’ and ‘B’ Westerns in the Depression era – they are based on the tables constructed by Ed Buscombe in the BFI Campanion to the Western. (Coffin, 2009, p. 191)</td>
</tr>
<tr>
<td>Context Establishment</td>
<td>This type of citation is used to justify the topic under examination by providing evidence for the significance of the topic (Mansourizadeh and Ahmad, 2011), or “to show authors are concerned</td>
<td>(1) However, these laws are controversial and two states have banned such legislation (Karr). A debatable question has emerged; should illegal immigrants receive in-state tuition at public universities? (Text 43_F_A)</td>
</tr>
<tr>
<td>(Lunsford et al., 2014)</td>
<td>(1) However, these laws are controversial and two states have banned such legislation (Karr). A debatable question has emerged; should illegal immigrants receive in-state tuition at public universities? (Text 43_F_A)</td>
<td>(2) In an attempt to adapt traditional conferencing strategies to the ESL writer, writing center faculty have found that the non-directive approach – which has been hailed as a writing center “bible” (Shamoon and Burns 135), writing center “dogma” (Clark 34), and a writing center “mantra” (Blau 3) – does not effectively assist ESL writers.</td>
</tr>
</tbody>
</table>
### Table D1 continued

<table>
<thead>
<tr>
<th>Citation Function</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Credit (Harwood, 2009, 2010) | As explained by Harwood (2009, 2010), this function of citation is “to acknowledge writer’s debt to others for ideas”. The following cases are identified for this function: | 1) According to the Electronic Frontier Foundation, net neutrality is the idea that Internet service providers (ISPs) should treat all data that travels their networks equally (EFF). *(Text 16_F_A)*  
2) To understand the controversy surrounding rubrics, it is best to know what a rubric is. According to Heidi Andrade, a professor at SUNY-Albany, a rubric can be defined as “a document that lists criteria and describes varying levels of quality, from excellent to poor, for a specific assignment” (“Self-Assessment” 61). Traditionally, rubrics have been used primarily as grading and evaluation tools (Kohn 12), meaning that a rubric was not used until after students handed their papers in to their teacher. The teacher would then use a rubric to evaluate the students’ papers according to the criteria listed on the rubric. *(Lunsford et al., 2014, p. 429)* |
| Knowledge building (Harwood, 2009, 2010) | This citation type is “to help authors develop methods or ideas” (Harwood, 2009, 2010). The following techniques are identified for this function: | 1) Having been in contact with high school life and students gave me a tacit or inarticulate knowledge that helps formulate interview questions in the language of the interviewee now that I became a “retrospective researcher” (Reinhartz, 1992, p. 27). *(Oana, A)* *(Petríc, 2007, p. 244)*  
2) Though Clover applies this observation mainly to the horror film, it is also equally relevant to the Western. *(Coffin, 2009, p. 189)*  
3) Cawelti’s definition of literary formulas here consolidates an understanding of the mythmaking functions Slotkin attributes to genre. *(Coffin, 2009, p. 189)* |
| Comparing and Contrasting (Coffin, 2009) | This function also matches up with the “tying” function in Harwood’s framework which also has the purpose of “align[ing] authors with others’ methods or with other schools of thought or debates.” (Harwood, 2009, 2010) | 1) By not requiring residence with the state, supporters argue the legislation does not violate federal law. However, opponents and some lower courts have ruled that “high school attendance…is a surrogate residence requirement” (qtd. in Colvin 397). *(Text 43_F_A)*  
2) Having been in contact with high school life and students gave me a tacit or inarticulate knowledge that helps formulate interview questions in the language of the interviewee now that I became a “retrospective researcher” (Reinhartz, 1992, p. 27). *(Oana, A)* *(Petríc, 2007, p. 244)*  
3) Cawelti’s definition of literary formulas here consolidates an understanding of the mythmaking functions Slotkin attributes to genre. *(Coffin, 2009, p. 189)* |
| Evaluation (Petríc, 2007) | This citation function is to evaluate a source (Petríc, 2007). According to her, this function is used when “the work of another author is evaluated by the use of evaluative language ranging from individual words (e.g. evaluative adverbs) to clauses expressing evaluation. It includes both positive and negative language.” (Petríc, 2007) | 1) By not requiring residence with the state, supporters argue the legislation does not violate federal law. However, opponents and some lower courts have ruled that “high school attendance…is a surrogate residence requirement” (qtd. in Colvin 397). *(Text 43_F_A)*  
2) However, the reasons supporting each argument mostly ignore what the opposing side arguing. *(Text 43_F_A)*  
3) Elizabeth Grosz’s concept of “the body as inscriptive surface” is an ingenious way out of the...
Table D1 continued

| **Attribution** (Petric, 2007) | This type of citation is to attribute information or activity to an author or the source of information only and does not have a secondary rhetorical function. The attributed information may be a proposition, a term, or a stretch of text, while the activity may be a research, discourse or cognitive act. This type of citation can be realized as a summary, paraphrase, or quotation. Any type of surface form of citation, i.e. integral or non-integral, reporting or non-reporting, can be used to express attribution. | nature/culture impasse. (Oana, A) (Petric, 2007, p. 245) | (1) According to feminist film critic Laura Mulvey’s (1975) analysis of the gaze, in binary looking relations men tend to assume the active role of a looking subject while women tend to be passive objects to be looked at, which in turn supports and symbolizes the patriarchal power relations between the sexes. (Eva, A) (Petric, 2007, p. 243) |

| **Further reference** (Petric, 2007) | (Harwood, 2009, 2010) This type of citation known as “Signposting” is to introduce a source for further information in the following cases:  - to direct less knowledgeable readers to introductory reading  - to direct readers to sources that discuss details that are not relevant here,  - to direct readers to full explanations elsewhere to save space | (1) See Trafficking in Women and Prostitution in the Baltic States: Social and Legal Aspects (IOM, Finland, 2001). (Egle, B) (Petric, 2007, p. 244) | (2) The details of this procedure can be found in other literatures [40-41] (Mansourizadeh and Ahmad, 2011, p. 155) |

| **Exemplification** (Petric, 2007) | “This citation, usually preceded by “for example” or “e.g” provides information on the source(s) illustrating the writer’s statement. Both integral and non-integral citations can have this rhetorical function. This type of citation can be effectively used to fulfill the first requirement of a good thesis, i.e. showing the knowledge of the literature in the field since it can be used to create a link between general trends and the work of individual authors. At the same time, the citation here functions as specific evidence supporting a more general claim and thus contributes to the writer’s argumentation.” (Petric, 2007) | (1) Many feminist scholars debate the concept of ‘woman’ and gender categories as such. Monique Wittig, for example, argues that woman is defined only in relation to man, and since a lesbian does not depend on men either “economically, politically or ideologically…[she] is not a woman” and stands beyond the category of sex (Wittig 20). (Olga, B+) . (Petric, 2007, p. 243) |

| **Technical Material Presentation** (Lunsford et al., 2014) | “Sources can be especially helpful, too, when material becomes technical or difficult to understand. Writing on your own, you might lack the confidence to handle the complexities of some subjects. While you should challenge yourself to learn a subject well enough to explain it in your own words, there will be times when a quotation from an expert serves both you and your readers.” (Lunsford et al., 2014, p. 430) | (1) As with all dialects, though, there are certain characteristics of the language that most Black English scholars agree upon. According to Samy Alim, author of *Roc the Mic Right*, these characteristics are the “[h]abitual be [which] indicates actions that are continuing or ongoing….Copula absence….Stressed been….Gon [indicating] the future tense….They for possessive….Postvocalic –r….[and] And and ang for ‘ink’ and ‘ing’” (115). Other scholars have identified “[a]bsence of third-person singular present-tense s….Absence of possessive ‘s,” repetition of pronouns, and double negatives (Rickford, 111-24). (Lunsford et al., 2014, p. 430) |
APPENDIX E. PRE-TEST ON SOURCE USE

Task 1: Please provide three different ways of integrating the original text below into the given incomplete paragraph:

“Central to my plan is giving every American the option of throwing out the three million words of the current tax code, and the costs of complying with that code, in order to pay a 20 percent flat tax on their income.” (Rick Perry, Governor of Texas, 2011)


Option #1:

Option #2:

Option #3:

Task 2: Rhetorical Function of Citation: Identify the rhetorical function of each citing sentence in the following paragraph:

<PS> In reality, greater taxes simply motivate the wealthy to find loopholes in the tax forms, shelter their incomes, and even encourage them to move out of the country. Countries with high taxation often experience a “brain drain” caused by the nation’s brightest and most talented people moving away (“History and Debate”). If these intelligent individuals leave, the nation becomes deprived of its most talented producers. In the event that wealthy people try to find loopholes, their lawyers and accountants receive useless tax-avoidance work. This is a waste of time and money. (Text 68_F14_A)

<CRE> A genetically modified organism, GMO, is defined as, “An organism whose genome has been altered in order to favor the expression of desired physiological traits or the output of desired biological products,” by Webster’s dictionary. GMO’s are a now considered a hot button issue. The debate is becoming more and more heated as people take sides. What really is the

Option list
- To give examples <EX>
- To support a position, a claim, or an argument <PS>
- To present viewpoints <PI>
- To justify the topic under examination <CE>
- To compare and contrast between sources <CC>
- To set up the common background knowledge on the topic <CRE>
- No rhetorical purpose besides attributing the cited idea to its source.
issue at stake? (Introduction Paragraph, Text 72_F14_A)

<CE> Throughout the course of history, hunting has been a highly controversial topic among cultures across the globe. A specific production of hunting that has been circulating for centuries is the whale-hunting epidemic in Japan. Since the beginning of Japan’s cultural and economical impact on the world, they have participated in the search and capture of a variety of whale breeds in the oceans off the coast of their country, for both selling and scientific purposes. Though the International Whaling Commission (IWC) has since outlawed commercial whaling worldwide, Japan continues to hunt the marine mammal on the terms of scientific research and cultural significance (Gales). (Introduction Paragraph, Text 3_F14_A)

<PI> Supporters of tuition equity argue that illegal immigrants are motivated to achieve in the classroom when the opportunity to attend college is affordable. According to Stephanie Potochnick, states that have passed tuition equity have seen an eight-percentage point reduction in the number of undocumented Mexican students who drop out of high school (29). (Text 43_F14_A)

<CC> If parents are able to single out specific genetic characteristics that they want for their child, and this trend continues for many generations, then this selection process will eventually lead to the split between the new and original, unenhanced, humans. This argument, of the separation of humans into a new species as expressed above, by the opponents of genetic engineering is contested by those who desire this new technological practice to be used. (Text 23_F14_A)

(EVA) In the final article, “Violence risk assessment in persons with mental illness,” by Charles L. Scott and Phillip J. Resnick, it talks about what mental disorders and what characteristics are mostly seen in producing violent criminals among the population. Surprisingly there was a higher rate of violence among those diagnosed with depression and bipolar disorders, which are types of anti-social disorders, than those diagnosed with schizophrenia (Scott, 601). (Text 11_S15_A)
APPENDIX F. POST-TEST ON SOURCE USE

Task 1: Please provide three different ways of integrating the original text below into the given incomplete paragraph:

“Economic arguments emphasize the potential to generate millions of dollars of tax revenue for both federal and state coffers and the new jobs that would be created by turning the sale of marijuana into regulated business” (Fritz, 2014, para. 5).

Option #1:

Option #2:

Option #3:

Task 2: Rhetorical Function of Citation: Identify the rhetorical function of each citing sentence in the following paragraph:

<PS> Not only does Japan partake in a hunt that kills whales for the uselessness of its scientific studies, it also does so in a harmful and cruel manner towards the mammal intended for such use. According to the article, "The Cruelty of Whale Hunting," the International Fund for Animal Welfare states that Japanese whale hunters have used harpoons, rifles and spears to tackle the great task of killing such large mammals. Those weapons are still used in today's hunts. (Text 3_F14_A)

<CE> Nitrogen is one of the most important elements incorporated within the soil although, without proper application it can become a hazard. In Iowa the most common fertilizer additives are nitrogen, phosphorous, and potassium. Nitrogen is most commonly applied in the largest amount, and it is laid down in the form of anhydrous ammonia (Manu). It is knifed into the soil in a liquid form. It is knifed into the soil in a liquid form….This has been a large problem in Iowa and the entire Midwest for about the last decade (Nitrogen).

Option list
- To give examples
- To support a position, a claim, or an argument
- To present viewpoints
- To justify the topic under examination
- To compare and contrast between sources
Some claim that progressive taxation shifts the tax burden to those with greater influence in society who can afford to pay more. This statement may be true but inflation can push a taxpayer into a greater tax bracket forcing him to pay more money when no real increase in income occurs. (Text 68_F14_A)

As a scholar in the criminology field I would like to explore the question of, is there an association between having a mental disorder and committing a crime or violent act? And if there is an association, what personality traits or characteristics are most prevalent with crime and violence? According to authors Charles L. Scott and Phillip J. Resnick, they imply that mental illness/disorder or psychiatric disorder is defined as a behavioral pattern that can lead to suffering or impaired ability to function in everyday life (Scott, 601). The disorders that are focused on in this paper are psychotic breaks, schizophrenia, and anti-social disorder. (Text 11_S15_A)

The skeptic believes Apple Pay will fail because it is not for everyone, because it is not safe, and because Apple should not have a monopoly. However, the educated consumer realizes that Apple Pay is only for a targeted group of people and that this group will make the product successful. (Text 12_F14_A)

An article on Forbes, written by a contributor, goes into great detail on why he believes net neutrality is a bad idea. Interestingly enough, he states that he is not opposed to the notion behind net neutrality but rather the idea of turning it into legislation, which would ultimately be corrupt. (Text 16_F14_A)
APPENDIX G. PRE-TRAINING QUESTIONNAIRE FOR TEACHERS

I. Demographic Background
   1. What is your educational level? What is your current position?
   2. What is your age?
   3. What is your gender?
   4. What is your first language?
   5. How many years of English 250 teaching experience have you had so far?

II. Language Instructions for College Student Writers
   1. a. How often do you give language instructions for English 250 student writers?
      Always       Often       Sometimes       Rarely       Never
      b. Why so?
   2. a. How necessary do you think it is to give language instructions for English 250?
      Very necessary   Necessary   Unnecessary   Very unnecessary
      b. Why so?
   3. a. How necessary do you think English 250 student writers should be provided with
      more language instruction on how to write a documented essay?
      Very necessary   Necessary   Unnecessary   Very unnecessary
      b. Why so?

III. Source Use Teaching Practice
   1. a. On a scale from 1-6. How effectively do English 250 students use sources in their
      documented essays?
      Very poorly       Poorly       Partly poorly       Slightly effectively       Effectively       Very effectively
      b. What made you think so?
   2. On a scale from 1-6. How necessary do you think it is to teach English 250 students
      to use sources in the documented essay?
      Very unnecessary   Unnecessary   Partly unnecessary   Slightly necessary   Necessary   Very necessary
      b. What made you think so?
   3. How do you teach English 250 students to integrate sources in their writing for the
      documented essay assignment?
   4. Please indicate your level of agreement on the statements about how to teach English
      250 use sources effectively in academic writing.
      Strongly Disagree     Partly disagree     Slightly disagree     Agree     Strongly Agree
<table>
<thead>
<tr>
<th>Statements</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td>a. Students should be taught to know how to observe language use in a specific genre.</td>
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<tr>
<td>b. Students should be given a number of examples from the target genre in order to write effectively.</td>
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<tr>
<td>c. Students should be guided to notice and focus on important things of a language feature or a writing skill in order to master it.</td>
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<tr>
<td>d. Writing instructions should encourage students to be able to induce the rules about how to use language effectively based on their observation of language use.</td>
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</tbody>
</table>

5. What should be included in language instructions to teach English 250 to use sources effectively in academic writing?

6. I’ve just developed the learning tasks to help English 250 students how to integrate sources in their documented essay paper, and am now planning to carry out an evaluation research on the tasks. If you are interested in using them in your class or learning about them, please kindly email me at huongle@iastate.edu. I’m looking forward to your email.
APPENDIX H. PRE-TRAINING QUESTIONNAIRE FOR STUDENTS

I. Demographic Background
   1. What is your major?
   2. What is your first language?
   3. What is your gender?
   4. How old are you?
   5. How many semesters have you been at ISU or other U.S university?

II. Need for language instruction
   1. On a scale from 1-6, how would you evaluate your academic writing skills in general?
      
      | Very poorly | Poorly | Partly poorly | Slightly effectively | Effectively | Very effectively |
      |-----------|--------|--------------|----------------------|------------|-----------------|
      | 1         | 2      | 3            | 4                    | 5          | 6               |
   2. Have you been taught how to use sources in academic writing before?
   3. On a scale from 1-6, how would you evaluate your source use skills in academic writing?
      
      | Very poorly | Poorly | Partly poorly | Slightly effectively | Effectively | Very effectively |
      |-----------|--------|--------------|----------------------|------------|-----------------|
      | 1         | 2      | 3            | 4                    | 5          | 6               |
   4. On a scale from 1-6, how necessary do you think English 250 students like you should be taught how to use sources in academic writing?
      
      | Very unnecessary | Unnecessary | Partly unnecessary | Slightly necessary | Necessary | Very necessary |
      |-----------------|------------|--------------------|-------------------|----------|---------------|
      | 1               | 2          | 3                   | 4                  | 5        | 6              |
   5. What would you suggest to be included in language instruction on how to integrate sources in academic writing?

III. Metalinguistic and Pragmatic Awareness about Source Use

These statements below describe some strategies when integrating sources in academic writing. On the scale from 1-6, please circle the number that best shows your level of agreement with the following statements.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Partly disagree</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Strongly agree</th>
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**Question 6**

1. I know various ways to integrate external sources into my writing.
2. I know how to use external sources in my writing for different rhetorical functions or purposes.
3. I don’t spend time thinking about how to incorporate external sources into my writing when I write.
4. I think about the rhetorical function of each citing sentence when I incorporate an external source in my paper.
5. I don’t know many reporting verbs to integrate external sources in my writing effectively.
6. I carefully select which verb to use to incorporate an external source in my writing accurately.
7. I do not consider contextual situations of my writings when integrating external sources into my writings.
8. I am unsure about how to integrate sources to serve the purpose of the documented essay assignment effectively.
APPENDIX I. POST-TRAINING QUESTIONNAIRE FOR STUDENTS

I. Demographic Background
   1. What is your major?
   2. What is your first language?
   3. What is your gender?
   4. How old are you?
   5. How many semesters have you been at ISU or other U.S university?

II. Evaluation of Learning Tasks
    These statements below describe evaluations of students on the learning tasks about source use after completing them. On the scale from 1-6, please circle the number that best shows your level of agreement with the following statements.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
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Question 6: Please indicate your level of agreement with each statement below.

1. I learned different features of citations that I did not know before.
2. I learned additional language resources to incorporate external sources into my writing.
3. I knew different ways to incorporate an external source into my writing.
4. I learned how to use reporting verbs to improve my source use in my writing.
5. I focused on understanding the meaning of the patterns of using citation features in documented essays.
6. I learned different functions of citations in the documented essay.
7. After the lesson, I became more aware of the choice of forming a citing sentence and its rhetorical effect in writing.
8. I learned how to form citing sentences with different purposes in the documented essay.
9. Overall, the materials helped me learn how to integrate sources in the documented essay effectively.
10. After taking the lesson, I still did not know what I could do to improve source use in my documented essay first draft.
11. I became aware of how the use of external sources is connected
to the purpose of the writing assignment.

**Question 7: Please indicate your level of agreement with each statement below.**

1. I focused on understanding the meaning of citation features in documented essays while taking the lesson. (Question 8)
2. I did not focus on understanding the meaning of citation features in my writing when working with the materials. (Question 8)
3. I was able to notice some language forms for each citation feature.
4. Working with the corpus tool helped me understand each feature of citations in the documented essays.
5. Working with the tool allowed me to focus on understanding the citation features.
6. The tool did not help me focus on understanding the rhetorical functions of citations in documented essays.
7. Working with the tool did not help me notice any language cues for each citation function.
8. The instructions and explanations in the lesson helped me focus on understanding citation features in documented essays.
9. The instruction in the lesson allowed me to notice the patterns of using citation features.
10. The instructions and explanations in the lesson helped me understand the patterns of using citation features in documented essays.
11. The instruction in the lesson made me focus on the use of citation features in the documented essay.
12. The instruction in the lesson helped me notice some gaps in my source use practice for the assignment.
13. The noticing of and focusing on differences between the source use practice in my documented essay draft and that of the A-graded papers was essential to my revision of the paper.
14. The focusing on the meaning of citation features was important to my learning of how to incorporate external sources for the assignment.
15. The noticing of and focusing on different forms of citation features and their patterns of use was not necessary for my learning of how to incorporate external sources for the assignment.
16. My focusing on the meaning of citation features enabled me to induce (or come up with) the strategies for using citation features in
my documented essay.

17. Focusing on the meaning of citation features in my writing was very beneficial to my learning.

18. I focused on understanding citation features by observing them before explaining their use in the target assignment.

**Question 8: Please indicate your level of agreement with each statement below.**

1. The lesson worked well for me.
2. I had no problem working with the corpus tool.
3. I was able to complete the lesson without any problem.
4. I found the tasks in the lesson challenging enough.
5. The type of instruction in this lesson did not work well for English 250 students like me.
6. I was not engaged in the materials throughout the lesson.
7. I was very interested in working with the corpus tool.
8. Working with the materials was very useful for students like me.
9. I did not find the corpus tool useful.
10. Working with the designed materials also helped me to develop other strategies to learn about other language features in academic writing.
11. I was satisfied with the learning experience.
12. I would love to work with similar corpus tools to learn about other language features in academic writing.

**Question 9: Please indicate your level of agreement with how helpful each of the characteristics of the materials below was to your focusing and noticing of source use features in documented essays.**

1. Multiple examples in the same kind of writings in the tool.
2. Charts displaying the distributions of citations across sub-types of each citation feature in the tool
3. Examples with color-coded citation features
4. A menu with search tabs
5. User-friendly interface design of the tool
6. The guided instruction (or steps) in the lesson
7. The questions or tasks in the lesson
III. Metalinguistic and Pragmatic Awareness about Source Use

These statements below describe some strategies when integrating sources in academic writing. On the scale from 1-6, please circle the number that best shows your level of agreement with the following statements.

<table>
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<th>Strongly Disagree</th>
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**Question 10**

1. I know various ways to integrate external sources into my writing.
2. I know how to use external sources in my writing for different rhetorical functions or purposes.
3. I don’t spend time thinking about how to incorporate external sources into my writing when I write.
4. I think about the rhetorical function of each citing sentence when I incorporate an external source in my paper.
5. I don’t know many reporting verbs to integrate external sources in my writing effectively.
6. I carefully select which verb to use to incorporate an external source in my writing accurately.
7. I do not consider contextual situations of my writings when integrating external sources into my writings.
8. I am unsure about how to integrate sources to serve the purpose of the documented essay assignment effectively.
APPENDIX J. STRUCTURED INTERVIEW PROTOCOL FOR INSTRUCTORS

A. Demographic Information and ENGL250 Teaching Practice
   1. What is your name? What is your major? What is your position?
   2. Could you please share your teaching experience with ENGL250? (How long have you been teaching ENGL250? Your duties? Your observations of the learners in the course? Some common issues with students taking the course? course objectives?)
   3. How necessary do you think ENGL250 students should be given academic writing instructions? If yes, why and how? If no, why?
   4. How important do you think ENGL250 students should be given instructions on how to integrate sources in academic writing and in the documented essay that they are writing? What are some common problems when students incorporate sources in their papers that you’ve noticed so far? Please explain why you think so as well.
   5. How should ENGL250 students be taught to write and to integrate sources in their writings? What are necessary skills and knowledge? Please explain why you think so as well.

B. Learning Task and Corpus Tool Evaluation
   Learner Fit
   6. How appropriate are the learning tasks for the ENGL250 students? What made you think so?
   7. How effective are the learning tasks in helping learners improve their source use skills in their academic writings? What made you think so?
   8. How effective are the learning tasks in helping learners focus on understanding the meanings of citations in concordance lines? What made you think so?
   9. How effective are the learning tasks in helping learners focus on understanding the rhetorical functions of citations?
   10. How effective are the learning tasks in helping learners focus on understanding the function of the targeted feature in citations and the interpretation of the patterns of citation features in use?
   Impact
   11. What do you think about the integration of the tasks in your writing instructions in your class? What made you think so?
   12. What do you think about the use of the tasks to support your source use teaching for the students? What made you think so?
   13. Would you have any suggestions for the task design and development in the future for ENGL250 students and other language learners?
APPENDIX K. STRUCTURED INTERVIEW PROTOCOL FOR STUDENTS

A. Demographic Information and ENGL250
1. What is your name? What is your major? How many semesters have you been at ISU or other US college?
2. How do you like the ENGL250 course so far?
3. How necessary do you think it is to integrate academic writing instructions in ENGL250 courses for college student writers like you? Why?
4. How important do you think it is to teach college student writers like you to know how to integrate sources in an academic essay? Why?
5. What is the best way to teach college students like you to learn how to write academically and how to integrate external sources in academic writing?

B. Learning Task and Corpus Tool Evaluation

Learning Potential
6. Learning gains
   6a. What have you learned about how to integrate external sources in the documented essay after working with the learning tasks?
   6b. How about forms, different features, rhetorical functions, and use patterns of citation?
   6c. What would you do with the first draft of the assignment after completing this lesson?

7. Noticing and focus
   How effective are the learning tasks in helping you improve their source use skills in their academic writings? What made you think so?

Meaning Focus
8. Did you focus on understanding the given citations through concordance lines? What made you focus on it? How did it help you learn how to incorporate external sources in your writing?
9. Did you focus on understanding the function of the targeted feature in citing sentences? What made you focus on it? How did it help you learn how to incorporate external sources in your writing?
10. Did you focus on understanding the rhetorical functions of citations? What made you focus on it? How helpful was it to you to learn how to incorporate external sources in your writing?
11. Did you focus on understanding or interpreting the meaning of the observed patterns of citation features? What made you focus on it? How helpful was it to you to learn how to incorporate external sources in your writing?

Learner Fit
12. Did you have any difficulties completing the learning tasks? What were they?
13. Were you interested in completing the learning tasks? What made you interested or not interested in it?
14. Are these tasks appropriate for you and other students like you to learn how to integrate external sources in the documented essay? What made you think so?

Impact
15. How important do you think are the learning tasks to your learning in the course? What made you think so?
16. How would the learning experience with the tasks influence your writing learning and strategies?
17. Would you have any suggestions for the task design and development in the future for ENGL250 students and other language learners?
APPENDIX L. THE APPROVED IRB FOR THE PILOT STUDY

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Date: 10/27/2014
To: Huong Le
1220 Walton Dr Apt 103
Ames, IA 50014

From: Office for Responsible Research

Title: Corpus-based investigation into language features in students' source-based writings and tool development
IRB ID: 14-518

Approval Date: 10/24/2014
Date for Continuing Review: 10/23/2016

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- Use only the approved study materials in your research, including the recruitment materials and informed consent documents that have the IRB approval stamp.
- Retain signed informed consent documents for 3 years after the close of the study, when documented consent is required.
- Obtain IRB approval prior to implementing any changes to the study by submitting a Modification Form for Non-Exempt Research or Amendment for Personnel Changes form, as necessary.
- Immediately inform the IRB of (1) all serious and/or unexpected adverse experiences involving risks to subjects or others; and (2) any other unanticipated problems involving risks to subjects or others.
- Stop all research activity if IRB approval lapses, unless continuation is necessary to prevent harm to research participants. Research activity can resume once IRB approval is reestablished.
- Complete a new continuing review form at least three to four weeks prior to the date for continuing review as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please be aware that IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. Approval from other entities may also be needed. For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. IRB approval in no way implies or guarantees that permission from these other entities will be granted.

Upon completion of the project, please submit a Project Closure Form to the Office for Responsible Research, 1138 Pearson Hall, to officially close the project.

Please don't hesitate to contact us if you have questions or concerns at 515-294-5956 or IRB@iastate.edu.
APPENDIX M. THE APPROVED IRB FOR THE DISSERTATION

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

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- Obtain IRB approval prior to implementing any changes to the study by submitting a Modification Form for Non-Exempt Research or Amendment for Personnel Changes form, as necessary.
- Immediately inform the IRB of (1) all serious and/or unexpected adverse experiences involving risks to subjects or others; and (2) any other unanticipated problems involving risks to subjects or others.
- Stop all research activity if IRB approval lapses, unless continuation is necessary to prevent harm to research participants. Research activity can resume once IRB approval is reestablished.
- Complete a new continuing review form at least three to four weeks prior to the date for continuing review as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please be aware that IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. Approval from other entities may also be needed. For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. IRB approval in no way implies or guarantees that permission from these other entities will be granted.

Upon completion of the project, please submit a Project Closure Form to the Office for Responsible Research, 202 Kingland, to officially close the project.

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.