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The University of San Francisco

A QUALITATIVE STUDY
OF HOW WRITING IS USED IN CATHOLIC SECONDARY SCHOOLS TO
FOSTER STUDENTS' METACOGNITIVE SKILL DEVELOPMENT

A Dissertation

Presented to

The Faculty of the School of Education

Department of Catholic Educational Leadership

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Bonnie J. Davis
San Francisco
May 2009

THE UNIVERSITY OF SAN FRANCISCO

Dissertation Abstract

A Qualitative Study of How Writing is Used in Catholic Secondary Schools
to Foster Students' Metacognitive Skill Development

This study addressed the problem of students' lack of writing instruction, which the National Commission on Writing in American's Schools and Colleges brought to the public's attention in 2003. Research in composition studies, in addition, have emphasized that writing is a cognitive tool. Vygotsky (1978, 1986), whose theories provided the conceptual framework for this study, viewed writing as an important tool in developing higher order thinking skills. As a result, this qualitative study sought to discover whether teachers in Catholic secondary schools in a Northern California diocese used writing to help students think and learn.

The researcher interviewed eight teachers in the subject areas of English, history, mathematics, religion, and science. The three research questions driving the study focused on teachers' understanding of the term metacognition, teachers' use of writing to foster metacognitive skills, and the obstacles teachers faced when using writing to help students learn. Data were collected from participants' responses to an interview protocol. Responses were recorded digitally, transcribed, and then interpreted through a thematic analysis approach. Although two of the eight participants were unfamiliar with the term metacognition, all of the participants indicated that they had developed strategies for teaching subject-specific writing skills. In addition, they were sensitive to learning styles and aspired to foster their students' critical thinking skills. In fact, several of the

participants taught their students metacognitive strategies. The types of writing the eight participants assigned were both expository and imaginative and ranged in frequency from once a week to once a year. Participants, though, faced four obstacles when using writing as a learning tool. These were teachers' clarity in articulating expectations and assessment criteria; the amount of time required to comment on and grade written assignments; students' lack of the critical thinking skills, and sometimes the basic skills, needed for academic writing; and students' resistance to challenging writing assignments and to those they considered irrelevant to the subject matter. In contrast to the Commission's 2003 report, this researcher found that her participants taught writing, valued it as a learning and thinking tool, and, to various degrees, used writing to foster students' metacognitive awareness.

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodology presented in this work represent the work of the candidate alone.

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CHAPTER ONE

THE RESEARCH PROBLEM

Statement of the Problem

In March of 2004, students taking the revised Stanford Achievement Test (SAT) were required to complete a timed essay to demonstrate their writing skills. The College Board (2003) added this essay requirement because studies had concluded that American schools were neglecting to teach writing (Lewin, 2003; National Commission on Writing in America's Schools and Colleges, 2003).

Writing specialists (Winerip, 2005), however, criticized the scoring of these writing samples. They found that students who wrote longer samples scored higher in spite of factual errors. They argued, furthermore, a single writing sample ignored that good writing is the result of rewriting. In addition, studies in cognitive psychology (Anderson et al., 2001; Costa & Kallick, 2000; Flavell 1979; Gardner, 2000; Perry, 2000; Pugalee, 2001; Zemelman, Daniels & Hyde, 1993, 2005) underscored the importance of teaching students to reflect upon the thought processes they use to perform specific learning tasks. Thus, the literature on cognition, particularly metacognition, added another dimension to the writing issue. This dimension was the need for students to develop an awareness of the thought processes they use when completing a particular assignment because understanding one's own thinking facilitates and enhances the completion of a specific task.

Hence, it was suggested that students' metacognitive and writing skills could be fostered concurrently because writing is a means to activate and clarify thinking. In addition, teachers in all subject areas could recognize that, because writing is thinking, it

is an interdisciplinary tool, which could be integrated and applied regularly across the curriculum (Britton, Burgess, McLeod, & Rosen, 1975; Costa & Liebmann, 1997; Freedman, Flower, Hull, and Hayes, 1995; Gooden, 1996; Holbrook, 1964; Hull, 1989; Lindemann, 1987; Moffett, 1992a; National Writing Project & Nagin, 2003; Tchudi & Huerta, 1983; Zinsser, 1988 & 2001).

Nevertheless, using writing as a tool to foster students' metacognitive skill development presents several challenges. First, many teachers lack training in writing pedagogy. Second, writing instruction has been and often continues to be formulaic. Third, writing requires various types of knowledge. Fourth, good writing instruction requires a variety of teaching strategies, and, fifth, good writing provides opportunities for students' self assessment (Elbow, 1996; Emig, 1971; Hawisher & Selfe, 2000; Hillocks, 1995; Lindemann, 1987; Perry, 2000; Sheils, 1975; National Commission on Writing in American Schools and Colleges, 2003; National Writing Project and Nagin, 2003; Winerip, 2005).

Consequently, these challenges posed the three-fold problem that this study addressed. First, the vast majority of teachers in the content areas are reluctant to integrate writing instruction throughout their curricula. They argue that time spent on writing takes away from the time needed to cover essential content (Jacobs, 2001). Second, teachers in all subject areas may not be familiar with writing pedagogy. Third, teachers may not understand the relationship between writing and the development of higher order thinking skills, specifically metacognition (Kozulin, Gindis, Ageyev, & Miller, 2003; Pugalee, 2001).

This three-fold problem influenced the researcher's decision to study teachers' perceptions of their writing instruction and its relationship to their students' metacognitive skill development. Based on the premise that this problem could be investigated best in a school community with explicit, cross-curricular goals and expectations, the researcher chose to use Catholic education as a model. The next section will discuss why Catholic education is an ideal model for integrated learning and instruction that incorporates writing and metacognitive skill development. (Bryk, Lee, & Holland, 1993; Congregation for Catholic Education, 1988; Convey, 1992; Groome, 1998; Lickona, 1991; National Conference of Catholic Bishops, November 1972; United States Catholic Conference, 1979 & 1981).

Background and Need

Catholic Education

The development of metacognition through writing requires educators to view instruction from an interdisciplinary approach. Such an approach necessitates common goals, to which all constituencies of a specific learning community conform. The ideal Catholic school is an example of such a learning community.

The explicit goals of Catholic education, which are to promote doctrine, to build community, and to serve others (National Conference of Catholic Bishops, 1972), provide a framework for cross-curricular learning and instruction. In Catholic schools, community building is founded upon the belief that interaction and involvement are crucial to the development of each individual; therefore, emphasis is placed on fostering positive interpersonal relationships. (Congress for Catholic Education, 1988; United States Catholic Conference, 1979 & 1981).

The Catholic School Teacher

Catholic education is committed to developing each student's full potential. To this end, teachers encourage students to think critically and to examine multiple perspectives in the search for truth (Congregation for Catholic Education, 1988). Thus, the development of critical thinking skills is a communal process, characterized by dialogue within an integrated curriculum, which, ideally, takes into account each student's developmental needs and encourages individual talents and skills (United States Catholic Conference, 1979).

Central to the Catholic school community is the classroom teacher who serves as model and guide in the fostering of each student's unique potential. The teacher's role is of utmost importance because it is the teacher who effects for each of his or her students the external and internal integration of cognitive and moral development. In addition, the Catholic school teacher is a community builder, who recognizes the dignity of each student, welcomes diversity, and encourages collaboration among students, colleagues, parents, and the community at large (National Conference of Catholic Bishops, 1972).

The pedagogy of Jesus Christ inspires the Catholic school teacher's praxis. With Jesus Christ's teaching as a model, this practice integrates two innate characteristics: First, the Catholic school teacher starts with the learner, drawing lessons from students' day-to-day experiences. Second, the Catholic school teacher and the Catholic school community promote integrated learning, driven by Gospel values. These values underscore the importance of prayer, responsibility, and freedom (Conference of Catholic Bishops, 1972). The next section will discuss how the Catholic teacher's praxis relates to the conclusions drawn from metacognitive research.

Catholic School Education and Metacognitive Theory

Metacognition is the awareness of one's own thought processes (Daniels, 2001). In the classroom, students' metacognitive awareness can be developed with a variety of pedagogical approaches. These approaches are rooted in educational theories: multiple intelligence (Gardner, 1985, 1991, 2000); cooperative learning (Lickona, 1991); the process method (Zemelman, Daniels & Hyde, 2005); and school culture (Bryk, Lee & Holland, 1993; United States Catholic Conference, 1981).

The philosophy of Catholic education subsumes all of these pedagogical practices, which are springboards to metacognitive development. First, it values the uniqueness of each student and promotes experiential learning. Hence, Catholic education encourages a multiple intelligence approach to understanding (Congregation for Catholic Education, 1988; Gardner, 2000; National Conference of Catholic Bishops, 1971; United States Catholic Conference, 1981).

Second, Catholic education stresses positive interpersonal relationships. It views the individual student in light of those with whom he or she actively interacts (Groome, 1998; Lickona, 1991; National Conference of Catholic Bishops, 1979).

Third, Catholic education emphasizes that learning is developmental. It underscores the fact that students acquire over time ever deeper layers of knowledge, predicated by previous understanding. Thus, learning must be considered in light of findings in developmental psychology (Cooney, Cross, & Trunk, 1993; Kuhmerker, 1991; Lavatelli, 1970; National Conference of Catholic Bishops, 1979).

Fourth, inherent to Catholic education, is the building of community through common goals and expectations. At the heart of this community are Gospel values.

Hence, the outcome of this values-centered education is each student's growth in his or her understanding of the human person. As a result, students in Catholic secondary schools are free to explore and assume critical perspectives. These perspectives are shared communally, in a process characterized by open dialogue (Congregation for Catholic Education, 1988).

The findings of studies of metacognition have substantiated the reflective learning approach of Catholic education (Anderson et al., 2001; Flavell, 1979; Gordon, 1996; Hung, 1993; Metcalfe & Shimamura, 1994; Pugalee, 2001; Tulving, 1994; Zemelman, Daniels, & Hyde, 2005). These studies, conducted in secular learning settings, confirmed the importance of teaching students to monitor, reflect upon, and evaluate their own thinking processes.

Furthermore, the researchers in metacognition, such as those cited above, discovered that teaching students to reflect upon their own thought processes was a valuable, interdisciplinary skill. In addition, they found that metacognitive awareness was a valuable skill for students to develop because it would help them in the future to negotiate the complexities of the world and the workplace. Thus, this investigation sought to correlate the findings of metacognitive research with Catholic education's stance on the teaching of higher order thinking skills.

Purpose of the Study

The purpose of this study was to investigate the extent to which teachers in Catholic secondary schools understood the concept of metacognition and the extent to which they used writing as a tool to foster the metacognitive skill development of students in Catholic secondary schools. In addition, the researcher sought to identify the

various teaching strategies that educators in the subject areas of English, history mathematics, religion, and science employed to this end, as well as the frequency of their usage.

Moreover, the study inquired about the types of written assignments that students produced that had been designated to promote their metacognitive skill development and the criteria that teachers used to assess these products. Finally, the researcher sought to determine the obstacles that teachers in Catholic secondary schools encountered that prevented them from fostering, through writing, the metacognitive skill development of their students.

Research Questions

This study examined how teachers used writing as a tool to foster the metacognitive skill development of students in Catholic secondary schools in five subject areas: English, history, mathematics, religion, and science. The researcher investigated the following questions:

1. To what extent do teachers in Catholic secondary schools understand the concept of metacognition?
2. To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students?
3. To what extent do teachers in Catholic secondary schools encounter obstacles that prevent them from fostering, through writing, the metacognitive skill development of their students?

The next section will discuss the theoretical rationale which served as a foundation for this study and its correlation to Catholic education.

Theoretical Rationale

Lev Vygotsky, a Russian educational psychologist, who lived from 1896-1934, has been credited with inspiring metacognitive studies (Braten, 1991a, 1991b, 1992). He believed that students achieved best in partnership with a teacher or more knowledgeable peer. He theorized that all students had the potential to learn scientific concepts beyond their ascribed developmental levels. Thus, unlike Piaget, Vygotsky argued that learning preceded development. Vygotsky asserted, moreover, that this learning had to take place within a social setting because interrelationships fostered the internalization of knowledge (Piaget, 1952; Van der Veer & Valsiner, 1994; Vygotsky, 1978, 1986; Wertsch, 1985).

Vygotsky (1986) criticized the emphasis on standardized testing because, he asserted, it evaluated a student's achievement only at a specific point in time. Rather, he insisted that student assessment needed to take into consideration each student's future potential and growth. To this end, he developed a pedagogical approach which required the assessment of what a student could learn with the assistance of the teacher. Vygotsky's theory, called the Zone of Proximal Development (ZPD), stressed not only the importance of determining what students could do on their own but also the importance of predicting what they could do with the guidance of effective teachers or more able peers. Through his investigations of his ZPD Theory, Vygotsky determined that the skills students developed with assistance reached maturity when students were able to perform them independently (Vygotsky, 1978).

Since Vygotsky's death in 1934, his ZPD theory has given rise to myriad interpretations, theories, and movements (Budoff, 1987; Campione & Brown, 1987;

Daniels, 2001; Davydov, 1995; Gindis, 1995; Hamers, Sijtsma & Ruijsenaars, 1993; Kozulin, 1986, 1995; Lidz, 1987, 1995; Moll, 1990; Wolff & Lee, 2007), which have the following characteristics in common: Subscribers of these interpretations, theories, and movements believe that (1) students learn best when they are actively involved with their peers and teachers in an interdisciplinary, learning environment; (2) students should be taught to reflect upon their own thinking and the cognitive processes they use; and (3) student assessment needs to include both the student's current level of achievement and his or her future learning potential. The next section will discuss how Vygotsky's Theory of the Zone of Proximal Development correlates with the philosophy of Catholic education.

Catholic Education and the Zone of Proximal Development Theory

Vygotsky (1978, 1986) emphasized the necessity of social interaction in the classroom. He believed that teachers mediated student learning and, as a result, were instrumental in the development of their students' higher order thinking skills. He encouraged classroom interaction because he had concluded that shared learning and instruction assisted in the construction of knowledge, both individually and collectively. Cognitive development, for Vygotsky, moreover, was interdisciplinary because once students mastered particular skills on their own they could apply them to other learning situations. For the classroom environment to be nurturing, therefore, teacher and students had to value one another's academic needs and skills as well as the importance of cooperation and collaboration.

Although Vygotsky (1978) applied his Zone of Proximal Development Theory to secular school settings, his belief that knowledge is constructed in an interactive

classroom mirrors Catholic education's belief that each student's development is a community responsibility. Vygotsky explained how interpersonal relationships facilitated the individual's acquisition of knowledge:

Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people . . . and then inside the child . . . All the higher functions originate as actual relations between human individuals. (p. 57)

Accordingly, Catholic education is founded upon the belief that each student's potential is developed through reflective, dialogic practices (Congregation for Catholic Education, 1988). Figure 1 illustrates the correlation between Vygotsky's ZPD Theory and Catholic educational philosophy.

As Vygotsky (1986) maintained, the internalization of knowledge required dialogue and reflection. In addition, he found that writing was fundamental in promoting reflection because of its abstractive nature. Vygotsky, consequently, considered writing a cognitive tool. Hence, within a social context, a teacher would utilize writing to assist students in developing their zones of proximal development. Vygotsky explained that writing reflected mental processes, which matured over time through planning, drafting, and revising one's written speech. Thus, by college age, students' metacognitive skills will have evolved to the point at which students are able to extrapolate, to a certain degree, their own thought processes while writing (Cole, 1993).

As Figure 1 illustrates, the tenets of Catholic education subsume the practices of constructivist classrooms as Vygotsky (1978, 1986) envisioned them. Because Catholic education is community-based, its constructivist view of learning and instruction permeates classroom practices. Thus, there appears to be a strong correlation between the constructivist classroom that Vygotsky envisioned and the Catholic school classroom

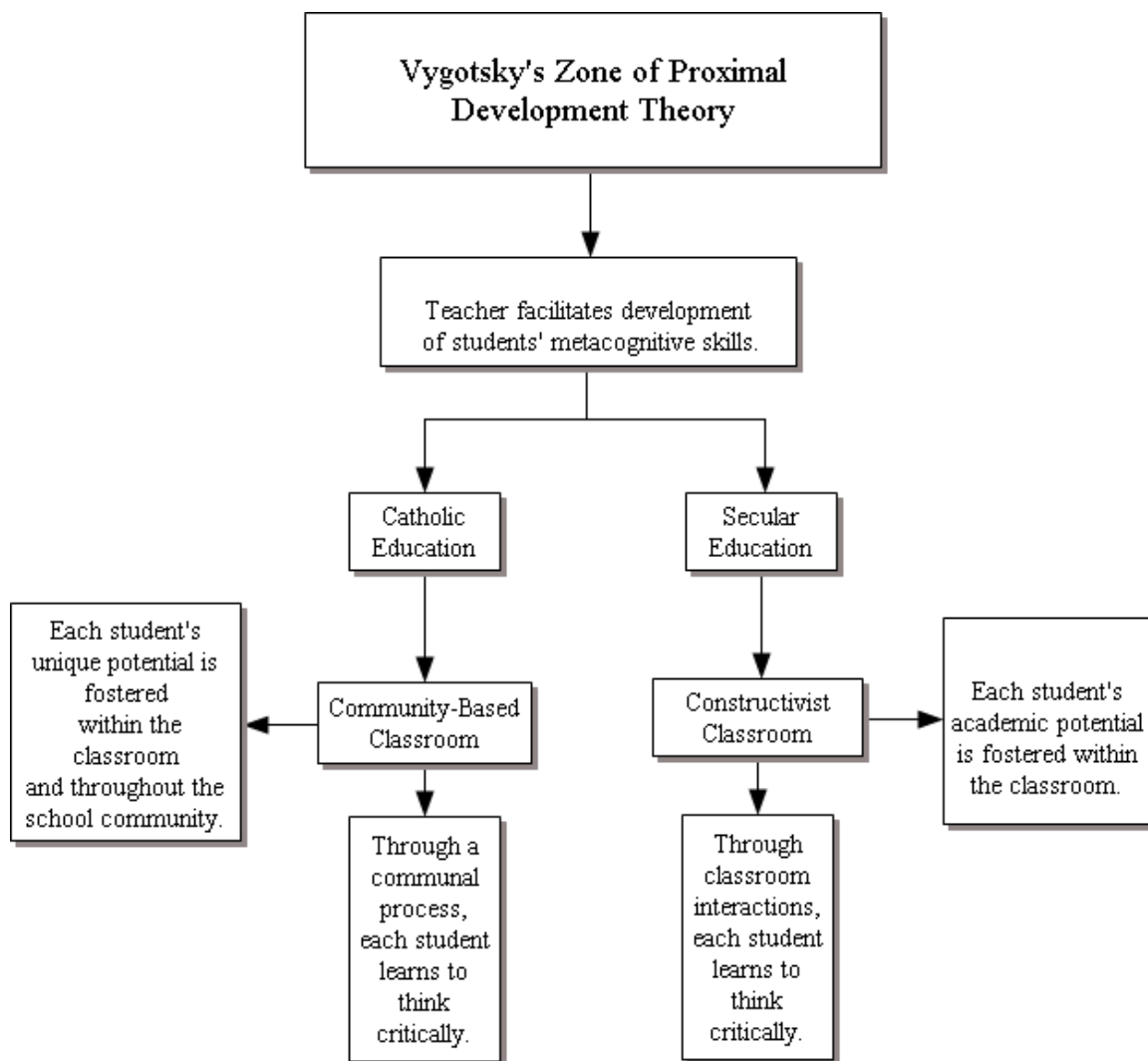


Figure 1. The correlation between metacognitive skill development in Catholic schools and metacognitive skill development in secular schools.

for several reasons: First, they both view the teacher as the mediator of an interactive environment. Second, they both emphasize the development of large concepts. Third, they both expect students to question, to assume points of view, and to examine critically the world around them. Fourth, they both interweave the assessment of pedagogical development of cognitive skills and the interdisciplinary nature of learning (Brooks & Brooks, 1993; Bryk, Lee & Holland, 1993; Congregation for Catholic Education, 1988; Convey, 1992; Moll, 1990; National Conference of Catholic Bishops; United States

Catholic Conference, 1979, 1981; Vygotsky, 1978, 1986).

Historically, community and individual development have been the heart of Catholic education. For this reason, the researcher chose to interview Catholic secondary teachers for her investigation of metacognition and writing, using Vygotsky's (1986) Zone of Proximal Development Theory for her conceptual framework.

Limitations of the Study

This study investigated how eight teachers from secondary schools in a Diocese of Northern California used writing to help their students develop their metacognitive skills. Five subject areas were represented: English, history, mathematics, religion, and science. Teachers in each of these subject areas were interviewed to determine their knowledge and application of metacognitive theory and to determine to what extent they required their students to write in their specific subject areas.

This investigation had several limitations. The first limitation was the size of the participant population. Only eight teachers were interviewed, five males and three females. The subject area distribution consisted of one participant for English, three participants for history, one participant for mathematics, one participant for religion, and two participants for science. Consequently, because of the investigation's limited population, its findings may not be applicable to a broader spectrum of educators.

The second limitation was that all of the prospective interviewees volunteered to participate in the study. They were randomly chosen from a larger pool of teachers who responded affirmatively to the initial questionnaire, formulated to determine whether the study was a viable one. Thus, they may have had a prior interest and/or knowledge of metacognition and writing in their subject areas.

The third limitation was that five of the interviewees were colleagues of the researcher. They were recruited by email or in person when several of the initial volunteers either decided not to participate, did not respond to follow-up communications by telephone or email, or were unable to schedule an interview. Thus, although the interviewer did not know these colleagues well, their participation may have lessened the study's objectivity.

The fourth limitation concerned the study's conceptual framework: Vygotsky's Zone of Proximal Development Theory. This theory is based on Vygotsky's (1978, 1986) constructivist philosophy of teaching and learning, which espouses that students learn best in settings in which teachers and students interact with one another. The study, though, did not address, for the most part, the challenges inherent in, as Lickona (1991) pointed out, teaching "the specific skills needed to cooperate" (p. 199).

The fifth limitation was the researcher's preference for using the process method to teach writing. As a result, she brought to this study a bias towards timed writing tests that are used to determine a student's level of writing proficiency.

Significance of the Study

The significance of this study, which involved the researcher in examining how teachers in Catholic secondary schools used writing to foster their students' metacognitive skills, has several components. These dimensions integrated the study of teaching writing, the study of metacognitive skill development, and the study of Catholic school education. Writing pedagogy has evolved prodigiously since Emig (1971) concluded that the teaching of writing, to be effective, had to be student-focused and process-oriented. Her findings gave impetus to the writing-process movement. This new

way of thinking about writing has spawned an abundant interest in how students internalize, process, and produce required written assignments that must meet a specific set of criteria in any given subject area.

Nevertheless, in spite of the attention given to the pedagogical practices of writing teachers over the past several decades, the National Commission on Writing in America's Schools and Colleges (2003) found American schools deficient in teaching writing. This researcher's investigation coincided with the Commission's five-year plan to improve student writing throughout the nation, a plan targeted for completion in 2008. The Commission's projected outcome was to make writing a fundamental component in all discipline areas. Thus, this study augmented the body of knowledge in the area of teaching writing that has accumulated before and during the Commission's five-year study.

Another significance of this study is that researchers have discovered that teaching students to use metacognitive practices in their learning helps them to internalize, assimilate, and articulate knowledge. As a result, Anderson and Krathwohl's (2001) revision of Bloom's (1956) Taxonomy, included another higher order thinking skill. This higher order skill is metacognition, which Marzano (2001) described as the ability to specify a goal and to monitor process, clarity, and accuracy.

Metacognitive skill development was the central focus of this study. The teacher-researcher interviewed eight secondary school teachers in five subject areas to determine to what extent they understood the term *metacognition* and to what extent they used writing to facilitate its growth in their students. As a result, this study contributes, to the literature on metacognition, the reflections of practicing teachers and the findings of a

teacher researcher, an expository writing teacher.

Using writing as a tool for metacognitive discovery is based on Vygotskian (1978) theory. He declared that “. . . writing has occupied too narrow a place in school practice as compared to the enormous role that it plays in children’s cultural development” (p. 105). In addition, Vygotsky (1986) emphasized that “intellectual development . . . is unitary, and the different school subjects interact in contribution to it (p. 186). Thus, this study’s concentration on teachers’ reflections of their classroom practices in the areas of writing and metacognition supplements the body of knowledge that has accumulated on the relationship between the teaching of writing and the higher order thinking skill, metacognition.

The final area of significance of this study involves the community of Catholic schools. Implicit to Vygotsky’s Zone of Proximal Development Theory (1978, 1986) is the notion that students learn best in a social setting, in which they can actively interact with a teacher and other learners. Roth and Lee (2007), in their explanation of Cultural-Historical Activity Theory (CHAT), which they affirmed Vygotsky and his collaborators had spawned, described how socially constructed learning is generated: “. . . students mediate between school and home as normally separate activity systems containing within- and between-system contradictions that experience resolution once both systems begin sharing ontogenetic histories” (p. 200).

Accordingly, Bryk, Lee, and Holland (1993) found that Catholic schools evinced this kind of activity system. They concluded that “Fundamental to Catholic schools are beliefs about the dignity of each person and a shared responsibility for advancing a just and caring society” (p. 312). Reflecting a Vygotskian perspective, they explained that the

development of each student's individual identity evolved within the collective character of the Catholic school. They added, furthermore, that "Personal growth and self-awareness emerge not from isolated independent behavior but rather from sustained participation in a social life marked by open communication, honesty, caring, and respect" (p. 315).

Because of this strong correlation between social constructivist theory and Catholic school philosophy, the researcher, a Catholic high school English teacher, chose to interview eight participants who served in Catholic secondary schools, whose culture is community-centered. Bryk, Lee, and Holland (1993) summed up the reason that Catholic schools provided substance for a study such as this, asserting that, regardless of students' socioeconomic backgrounds, they ". . . can learn in an educational environment that combines a strong emphasis on academic work with a caring ethos that demands personal responsibility and the good efforts of all participants" (p. 327).

Definition of Terms

Authentic Assessment:

projects, portfolios, and observations of performance rather than standardized testing (Moffett, 1992)

Catholic School Community:

"Community is central to educational ministry . . . as a necessary condition and an ardently desired goal. The educational efforts of the Church must . . . be directed to forming persons-in-community . . . the education of the individual Christian is important not only to his solitary destiny but also to the destinies of the many communities in which he lives" (National Conference of Catholic Bishops, 1972, p. 4).

Christensen Method:

a method used to teach “students to write by examining how real writers write, particularly noticing the frequent use of certain phrasal modifiers in the work of many modern writers” (Gray & Benson, 1982, p. 7)

Constructivist Learning Theory:

the view “that psychologically engaged learners construct knowledge themselves from comprehensible input . . .” (Weaver, 1996, p. 162)

Critical Pedagogy:

a teaching approach which encourages students to question and challenge oppression (Freire, 2003)

Dynamic Assessment:

“The examiner becomes an active part of the assessment and functions as an assessment tool, responding to observations and inferences about the learner and functioning in a way to reveal learning processes and to facilitate change” (Lidz, 1995, pp. 143 & 144).

Freewriting:

writing whatever comes to mind without stopping for 10 to 20 minutes several times a week (Elbow, 1998)

Intrapersonal Intelligence:

“access to one’s own feeling life” (Gardner, 1985, p. 239)

Invention:

techniques used to discover “relevant ideas and supporting evidence” in the process of composing (Lindemann, 1987, p. 38)

Metacognition:

awareness of one's own thought process while performing specific tasks
and using this awareness to control what one is doing (Marzano et al., 1988)

Multiple Intelligence Theory (MI):

Gardner's (1999) theory that humans have the capacity for eight different
intelligences: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical,
interpersonal, intrapersonal, and naturalist

New Rhetoric:

the view that people use language for "varied and changing purposes"
(Lindemann, 1987, p. 55)

Open Admissions Policy:

an open-door policy created by colleges and universities to give all who desire a
degree the opportunity to earn one (Shaughnessy, 1977)

Peer Response:

a teaching and learning strategy that involves students in the examination and
assessment of one another's written products

Personal Writing:

writing which evolves from introspection, reflection, and experience

Process Method:

writing pedagogy which views composing as a three-stage process: prewriting,
writing, and rewriting (Lindemann, 1987)

Reading-Writing Connection:

the symbiotic relationship between one's reading and one's writing (Moffett, 1994)

Reformist/Abolitionist Debate:

an argument initiated by Harvard's creation of the freshman composition course in 1855; abolitionist called for its elimination, believing that reform was hopeless while reformists sought to improve the freshman composition course (Connors, 1996)

Scaffolding:

“a form of adult assistance that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts” and that consists of five characteristics: “ownership . . . appropriateness . . . structure . . . collaboration . . . internalization” (Daniels, 2001, pp. 107 & 109)

Scientific Concepts:

concepts which emerge as a result of classroom instruction (Vygotsky, 1986)

Spontaneous Concepts:

concepts which emerge from a person's own reflections on everyday experiences (Vygotsky, 1986)

Writing across the Curriculum (WAC):

writing that is “an organic part of how every subject is taught” (Zinsser, 1988, p. vii)

Writing in the Content Areas (WIC):

specialized writing used in specific subject areas (Zinsser, 2001)

Writing Proficiency:

a person's ability to write precisely, completely, and grammatically for school and for work

Zeitgeist:

a time period or generation's collective thinking (Wheatley, 1999)

Zone of Proximal Development (ZPD):

“the discrepancy between a child's actual mental age and the level he reaches in solving problems with assistance” (Vygotsky, 1986, p. 187)

CHAPTER TWO

REVIEW OF THE LITERATURE

Restatement of the Problem

In April of 2003, the National Commission on Writing in America's Schools and Colleges reported that American schools were neglecting to teach their students how to write (Lewin, 2003). As a result, the March 2004 revised Stanford Achievement Test (SAT) included a 25-minute writing test. The National Council of Teachers of English (NCTE), however, remonstrated that such a test ignored that good writing evolved from rewriting (Winerip, 2005).

Yagelski (2006) was a member of the NCTE committee that studied the effect of the new SAT writing test. He expressed the committee's concern that the SAT writing component would send the message to students, their parents, and their schools that good writing follows a formula and shows evidence of the writer's organizational and grammatical skills.

Seemingly, the expectation that college-bound students would produce authentic samples of their best essay writing in less than one-half hour contradicted the plethora of research in composition studies (Emig, 1971; Holbrook, 1966; Lindemann, 1987; The National Writing Project (NWP) and Nagin 2003). Many of these studies explored writing as a cyclical process (Elbow, 1996; Moffett, 1992a; Murray, 2002), which incorporated multiple-intelligence and cognitive development teaching and learning theories and strategies. Thus, the research conclusions emphasized that writing is more than the end product; rather, it is a cognitive tool, which enables the writer to formulate, organize, and reflect upon emerging ideas. With the advent of the controversial SAT

writing component, nevertheless, educators will need to foster not only their students' writing skills but also their cognitive skills, specifically metacognition. The reason for this is that students who are able to monitor their own thought processes as they write are more confident and prepared when required to complete a timed task like the SAT writing prompt.

Hence, the SAT writing requirement posed a two-fold problem. First, students require writing instruction and practice. Second, they require the awareness necessary to reflect upon their thought processes in order to understand what they are doing and thinking while they write. In other words, they need to develop their metacognitive awareness in order to understand that good writing is a multidisciplinary tool, one that enables them to organize, reflect, and monitor their own writing, regardless of the required end product.

In this chapter, the Review of Literature, studies in cognitive development, particularly metacognition, and writing theory will be described. The chapter is divided into eight sections: (1) Metacognition, (2) Lev Vygotsky and the Zone of Proximal Development, (3) Lev Vygotsky and Writing as a Tool, (4) the Teaching of Writing Movement, (5) Research in the Teaching of Writing, (6) Gender Studies and Learning and Instruction, (7) Writing as a Cognitive Tool, and (8) Writing across the Curriculum.

Metacognition

The word *metacognition* is a fairly recent addition to the terminology of educational psychology. Tulving (1994) credited the beginning of research into the concept of metacognition to Hart, a Stanford University student, whose Ph.D. thesis in 1965 investigated feeling and knowing. Tulving added, moreover, that it was not until 10

years later that Flavell and Wellman (1977) established a separate category for metacognition, into which Hart's research fit. Flavell (1979) characterized metacognition as "a new area of cognitive-developmental inquiry" (p. 906) and conjectured that students seldom were engaged in the conscious monitoring of their own thinking. To this assertion, however, he affixed that researchers have found that metacognition is important in both oral and written communication. Flavell proceeded to delineate the number of concrete, positive effects, which resulted from the conscious regulation of one's own thought processes. Among these was the ability to evaluate and revise one's thinking in order to advance a specific task at hand, regardless of its nature.

Since Flavell's (1979) discussion of metacognition and learning was published, researchers have explored the various layers of metacognition. Tulving (1994) described the scope and complexity of these investigations into how people think and know, stating that "a particular kind of knowledge can be known in many ways, and a particular form of knowing may have as its object many different kinds of knowledge" (pp. vii-viii).

Metacognition and Learning and Instruction

Marzano et al. (1988) investigated the influence of metacognition on classroom practices and learning. They defined metacognition as "being aware of our thinking as we perform specific tasks and then using this awareness to control what we are doing" (p. 9). With this definition as a guide, they focused on two predominant aspects of metacognition: "knowledge and control of self and knowledge and control of process" (p.10). In their discussion of "knowledge and control of self," they outlined three factors that influenced the development of students' self-monitoring skills.

The first factor was commitment to the “academic task” at hand, regardless of how students felt about it. Marzano et al. (1988) explained that students have control over their commitment to their work. Feelings, therefore, should not determine commitment; rather, students need to consider whether they have chosen or not chosen to be committed to a specific task. One can infer from Marzano et al.’s statement that, if upper level high school students committed themselves to learning how to write effectively and how to monitor their own processes as they composed, they would approach requirements such as the SAT writing sample and the college application personal statement with self confidence and proficiency.

Marzano et al.’s (1988) second factor in students’ self-regulation was attitude. Monitoring of one’s own attitude in respect to a learning task or situation was a metacognitive skill that, they found, could be taught and learned. Thus, believing one could perform a difficult task beyond one’s skill level and then putting forth the effort to attempt and, possibly, accomplish it were within the student’s purview. Marzano et al. explained that “Before students can become aware of their attitudes and control them as a part of a general metacognitive strategy, teachers can guide them toward two understandings: that attitudes affect behavior and that people have some control over their attitudes” (pp. 11-12).

The third criterion in Marzano et al.’s (1988) description of metacognitive self-regulation was attention. They suggested that students needed opportunities to practice the various attention levels required in specific learning situations, some necessitating more focus on details and facts than others. This attention practice would require additional time for instruction and for appropriate classroom feedback. Marzano et al.,

however, pointed out that some researchers countered with the argument that the use of classroom time to assist students in metacognitive monitoring in the areas of commitment, attitudes, and attention took away from the necessary time required to teach content. They advised, instead, that teachers foster their students' metacognitive skills as needed on a daily basis. Using this pragmatic approach, the teacher would model successful metacognitive learning strategies to encourage students to reflect upon activities and consequences and challenges or problems as the need arose.

Marzano et al. (1988), in addition, discussed the second predominant aspect of metacognition: process control, which requires the integration of declarative, procedural, and conditional knowledge. In other words, students who think metacognitively, while engaged in various processes, have learned to collect the necessary facts (what), to strategize them (how), and to apply a specific problem-solving methodology (why and when). Marzano et al. asserted, moreover, that "Ideally, teachers should be able to identify these components for the tasks presented to students and to systematically teach and reinforce them" (p. 14).

The educational implications of investigations on metacognition, such as those discussed above, led Anderson et al. (2001) to include the concept of metacognition in their revision of Bloom's (1956) knowledge taxonomy. Table 1 summarizes Anderson et al.'s Four Dimensions of Knowledge. Thus, in the 21st Century, Anderson et al. have provided teachers and researchers with an expanded framework for pedagogical studies and practices which incorporate students' and teachers' awareness of their own thinking processes. Anderson et al., citing Brunford, Brown, and Cocking (1999), clarified that these research discoveries have provided the understanding to initiate the transformation

of classroom practices and learning. They explained that

One of the hallmarks of theory and research on learning since the publication of the original *Handbook* [Bloom, 1956] is the emphasis on making students more aware of and responsible for their own knowledge and thought researchers generally agree that with development students will become more aware of their own thinking . . . and as they act on this awareness they will tend to learn better. (p. 55)

The next section will examine the Vygotskian theoretical model, one which underscores the importance of metacognition on learning and development. This theoretical model was inspired by Vygotsky, whom Braten (1991a, 1991b, 1992), hailed as the “precursor to metacognitive theory.” In his review of the literature on the subject of metacognition, Braten (1992) concluded that “there are strong indications that dyadic interaction, structured by adults, provides the social guidance that awakens and arouses to life budding metacognitive processes” (p. 12).

Lev Vygotsky and Metacognition

Vygotsky, a Russian educational psychologist, lived from 1896 to 1934. He, along with a cadre of students and collaborators, established the foundation for studies which explored how social interaction affected the acquisition of knowledge and cognitive development. Indeed, Vygotsky’s theory planted seeds that have continued to be sown in the 21st Century. Gindis (1995) suggested that Vygotsky’s theoretical framework integrated all domains of present-day, educational psychology.

Vygotsky (1986) formulated his groundbreaking theoretical framework after analyzing and critiquing, what he considered to be, the three foremost theories on the relationship between learning and development. The first theory, representative of Piaget (1952), stated that a child’s development and learning were processes independent of one another. The second theory, which James (1904) espoused, viewed learning and

Table 1

The Four Dimensions of Knowledge

Dimension of Knowledge	Description
Factual knowledge	This is knowledge of the basics needed to know about a discipline, such as terminology, details, and elements; or to solve problems in it.
Conceptual knowledge	This is knowledge of the interrelationships of elements within a larger framework, which help them operate together, such as classifications and categories; principles and generalizations; and theories, models, and structures.
Procedural knowledge	This is knowledge of the process, methods, and criteria used to complete various tasks, such as skills, algorithms, techniques, and methods.
Metacognitive knowledge	This is knowledge of general cognitive awareness and awareness of one's own thinking, such as awareness of general thinking, learning, and problem-solving strategies; awareness of tasks, contexts, and conditions; and self-awareness of one's own knowledge, capabilities, interests, goals, and attitudes and of the cognitive tools required for specific tasks.

Note. Adapted from Anderson et al., 2001.

development as synonymous, and the third theory, which Koffka (1934) advocated, sought to combine the first and second theories. Vygotsky's findings led him to reject all three theories and to develop his own. This theory focused on two factors: first, the general relationship between development and learning and, second, the relationship between development and learning at school age. In *Mind in Society*, Vygotsky (1978) described these operants:

Any learning a child encounters in school always has a previous history. . . . learning as it occurs in the preschool years differs markedly from school learning, which is concerned with the assimilation of the fundamentals of scientific knowledge. (p. 84)

Although French scholars, as Blunden (2005) discovered, communicated with Vygotsky during the 1930s, Piaget, his contemporary, was not one of them. In fact, Piaget did not discover Vygotsky's *Thought and Language* until 25 years after its publication. In 1962, Piaget previewed and commented upon two chapters in *Thought and Language*: Chapter 2, "Piaget's Theory of the Child's Speech and Thought" and Chapter 6, "The Development of Scientific Concepts in Childhood: The Design of a Working Hypothesis":

Although my friend A. Luria [Vygotsky's collaborator] kept me up to date concerning Vygotsky's sympathetic and yet critical position with respect to my work, I was never able to read his writings or to meet him in person, and in reading his book today, I regret this profoundly, for we could have come to an understanding on a number of points. (Piaget, 1962, p. 1)

Nevertheless, the fundamental points, which appeared to polarize Piaget's and Vygotsky's theories, were their views on learning and development. Simply stated, while Piaget asserted that learning followed development, Vygotsky (1986) insisted that development followed learning.

Piaget (1962), for example, elaborated upon two problems which Vygotsky's work posed. The first was the relationship between spontaneous and scientific concepts, which Piaget argued was more complex than Vygotsky presumed. He explained that, in his view, instruction could accelerate or impede a child's development, depending upon how well the child was able to assimilate scientific and spontaneous concepts. As a result, Piaget concluded that the development of new concepts at school was not necessarily the result of an adult's mediation.

The second problem, which Piaget (1962) found in reviewing *Thought and Language*, was Vygotsky's ambiguity in characterizing the relationship between scientific and spontaneous concepts. He explained that in Vygotsky's system the concepts started at different points and eventually met. Piaget agreed with this viewpoint, presupposing that Vygotsky meant that the "sociogenesis" of scientific ideas and the "psychogenesis" of spontaneous ideas merged at a specific point (pp. 8-9). It would appear, therefore, that Piaget and Vygotsky shared the belief that spontaneous and scientific concepts were interrelated. Vygotsky, furthermore, identified the experiences which stimulated the development of each group of concepts. Kozulin (1986) explained that Vygotsky defined scientific concepts as those imposed upon the student through focused instruction; he defined spontaneous concepts as those which resulted from a child's reflections on his or her own daily experiences.

Hence, instruction for Vygotsky was paramount in influencing the development of scientific concepts. Furthermore, the results of the research of Vygotsky (1986) and his collaborators led them to conclude that the cognitive requirements for the various school subjects were, for the most part, the same. They found, in addition, that the

psychological functions required in the study of each discipline were interdependent because all subject areas stressed the student's conscious mastery of specific content. Vygotsky explained ". . . all the basic school subjects act as formal discipline, each facilitating the learning of the others; the psychological functions stimulated by them develop in one complex process" (p. 186).

Vygotsky, moreover, argued that before instruction began it was necessary to determine each child's cognitive development level. This was accomplished by determining his or her zone of proximal development (ZPD) and then planning an interactive program of instruction. The next section will elaborate on Vygotsky's ZPD theory and its applications as they have evolved since the 1930s.

Lev Vygotsky and the Zone of Proximal Development

Vygotsky (1978) described his ZPD theory using a budding flower metaphor.

He explained that

The zone of proximal development defines those functions that will mature tomorrow but are currently in an embryonic state. These functions could be termed the "buds" or "flowers" of development rather than the "fruits" of development. The actual developmental level characterizes mental development retrospectively, while the zone of proximal development characterizes mental development prospectively. (pp. 86-87)

Wertsch (1985) explained that Vygotsky's reason for introducing the zone of proximal development was to confront two problems: how children's intelligence was assessed and how pedagogical practices were evaluated. Vygotsky, as Wertsch pointed out, was critical of the way standardized tests concentrated on assessing students' achievement while failing to predict their future growth. This potential for future growth, furthermore, needed to be analyzed independently because it and the existing level could vary.

Gindis (1995) stated Vygotsky's position in respect to the traditional, one-dimensional approach to testing:

In the early 1930s, Vygotsky was, perhaps, unique in opposing the concept of IQ/Mental Age and suggesting the alternative approach which is now called "dynamic" or "interactive" assessment. He continuously insisted that human cognition is embedded in culture and passionately argued that focusing of "pure informational processing" is a dead-end approach in the study of uniquely human cognition. (pp. 99-100)

Various models of dynamic assessment (Budoff, 1987; Campione and Brown, 1987; Feuerstein, 1979; Hamers, Sijtsma and Ruijssenaars, 1993; Lidz, 1987) have evolved from this Vygotskian stance on human cognitive development. These models share three major characteristics. First, the assessment is interactive, with the examiner functioning as a tool of assessment. Second, the assessment focuses on the processes of learning, which are often metacognitive processes. Lidz (1995) explained that "the interaction between examiner and learner reveals how the student engages in the problem-solving process, and promotes inferences about mental processing involved in task engagement" (p. 144). This interaction leads to the third major characteristic of dynamic assessment: the information which emerges is used to formulate teaching strategies. Based on the responses of the student, the examiner selects the appropriate instructional method or methods, which will best serve the individual needs of the learner.

In contrast to the one-sided, traditional instruction, which Freire (2003) called "banking education" (p. 83), the Vygotskian model focused on the needs and potential of the learner. This latter model came to be known as scaffolding, upon which Bruner (1997) elaborated, relating it directly to the ZPD. Davydov (1990), in addition, attributed the types of successful, instructional outcomes, which scaffolding promotes, to good teaching. Hedegaard and Chaiklin (1990) reported that

. . . following Vygotsky, Davydov argues that teaching plays an essential role in the mental development of the child. That is, not only should formal instruction contribute to the acquisition of special abilities and knowledge but it should also contribute to children's general mental development. Good teaching develops a capacity for relating to problems in a theoretical way, and to reflect on one's thinking. (p. 153)

As Kozulin (1995) noted, however, Davydov criticized Vygotsky for not making a clear enough distinction between scientific and spontaneous concepts. Davydov, to this end, argued that scientific and spontaneous concepts differed in content because scientific concepts were abstract, and spontaneous concepts were experiential.

Wertsch (1985), in accord, critiqued Vygotsky's work, finding three problems with the zone of proximal development. The first problem was the ambiguity in Vygotsky's perception of the relationship between development and instruction. Wertsch sought clarity in Vygotsky's assertion "that development cannot be reduced to learning in instruction" (Wertsch, p. 73) because Vygotsky argued that intrapsychological functioning emerged from interpsychological functioning.

The second problem that Wertsch (1985) found with the ZPD was that Vygotsky did not include the period of infancy in his study. Wertsch conceded, however, that knowledge of early ontogenesis was limited at the time Vygotsky was researching and writing.

Wertsch's third problem with the ZPD was Vygotsky's emphasis on interpsychological functions although Vygotsky stressed the importance of the link between interpsychological and intrapsychological experiences. Nevertheless, in spite of these problems which Vygotsky scholars, like Wertsch, have addressed, Bruner (1962) proclaimed that

the striking fact is that given a pluralistic world where each comes to terms with the environment in his own style, Vygotsky's developmental theory is also a description of the many roads to individuality and freedom. It is in this sense, I think, that he transcends, as a theorist of the nature of man, the ideological rifts that divide our world so deeply today. (p. x)

Lev Vygotsky and Writing as a Tool

Beliavsky (2006) echoed Bruner's call to forge diverse means to individual growth. Seeking to merge the theories of Vygotsky and Gardner, Beliavsky argued "that Vygotsky's ideas should be viewed through the prism of Gardner's (1991) Theory of Multiple Intelligences" (p.1). Vygotsky (1978) stressed that students needed to be equipped with numerous tools, among them writing, which he viewed as "a particular system of symbols and signs whose mastery heralds a critical turning-point in the entire cultural development of the child" (p. 106). Using writing as a tool, therefore, provides students in all subject areas with opportunities to advance their cognitive skills and to concretize their thoughts. For example, the numerous prewriting strategies, which the writing process method subsumes, give students opportunities to develop their thinking and writing skills via multiple-intelligence techniques. As Beliavsky emphasized,

. . . people do not learn in the same way. Studies of cognition suggest that there exist many different ways of acquiring and representing knowledge. These individual differences need to be taken into account in our pedagogy as well as in our assessment of learning. These notions led Gardner to his theory of Multiple Intelligences (MI), which is a critique of the notion that there exists one single human intelligence that can be assessed by standard psychometric instruments. (p. 6)

Nevertheless, students in the myriad academic environments of the 21st Century are and will be expected to write clearly and logically for a plethora of reasons.

When they have been taught to navigate the writing process metacognitively, their powers of abstraction will yield new and more sophisticated personal and interpersonal

insights. To this end, Vygotsky (1986) viewed writing as a mental process, pointing out that written communication is complicated, which is why first drafts are used. The evolution from the drafting stage to the final product is a cognitive progression. This includes thinking about and planning what is to be written, which is drafting in thought.

Vygotsky (1986), therefore, considered writing to be a cognitive tool, one which a good teacher would use, within a social context, to develop students' zones of proximal development to their fullest potential. Hull (1989) emphasized Vygotsky's notion that learning comes about through social interaction, through scaffolding, in other words. She explained that learning through social interaction requires students to talk to one another and to work in pairs or groups. In this decentralized setting, students facilitate one another's learning. The teacher's role is to walk around the classroom, pausing to sit with individuals, pairs, and groups in order to provide assistance when needed.

The teacher in a Vygotskian setting, such as Hull (1989) envisioned, is an important influence, albeit a subtle one. One might use terms such as model, mentor, facilitator, assessor, negotiator, nurturer, and motivator to characterize the responsibilities of the 21st Century teacher. Yet, Vygotsky, who died in 1934, has become the modern educator's prototype because of his progressive philosophy of learning and instruction. This was evidenced by his collaborative nature, by his insistence on always looking to the future, by his dedication to the cognitive development of all students, and by his open-mindedness. As his daughter, Gita Vygotskaya (1995) recalled,

He never forced his opinions on us, unless of course we were doing something really wrong. In most cases he preferred us to work things out on our own. Often when we asked a question, he did not give a complete answer but rather drew us into discussions that resulted in a commonly-agreed-on answer or decision.
(p. 114)

If one, then, is to envision the future of learning, as Vygotsky did, one would see that learning to think metacognitively, via writing, affects not only the individual but society at-large. Vygotsky's (1986) work reverberated with the message that, on an individual level, ". . . becoming conscious of our operations and viewing each as a process of a certain *kind*—such as remembering or imagining—leads to their mastery" (p. 171). On a societal level, he left his readers with this thought: "A word is a microcosm of human consciousness" (p. 256). Hence, the academic setting, which encourages scholarly interaction, gives rise to greater cognitive and social development, engendering, as Bruner (1962) visualized, a more cooperative and collaborative world.

Vygotsky (1986) emphasized the importance of teacher and student interaction, which he believed was paramount in developing each student's cognitive and social skills. In addition, he valued writing as a cognitive tool, one which enabled students to ponder, concretize, and organize their thoughts. On a broader level, Vygotsky's philosophy of education provided stimulus for the Teaching of Writing Movement, discussed in the next section.

The Teaching of Writing Movement

The National Writing Project

James Gray (2000) spearheaded the National Writing Project (NWP) in 1974 when he conducted the first Bay Area Writing Project (BAWP) Summer Institute for Teachers. His objective was to promulgate information that teachers and schools could use to improve writing instruction because schools and the nation were decrying the poor writing skills of both students and teachers.

Several reasons for the nation's concern about poor writing skills had emerged. The protests of the 1960s resulted in colleges and universities accepting students who did not meet traditional standards. These nontraditional students enrolled in Basic Writing (BW) courses developed throughout the country in response to this mass education venture. Shaughnessy (1977) described the City University of New York's 1970 admissions policy:

. . . the city University of New York adopted an admissions policy that guaranteed to every city resident with a high-school diploma a place in one of its eighteen tuition-free colleges . . . thereby opening its doors not only to a larger population of students than it had ever had before (enrollment was to jump from 174,000 in 1969 to 266,000 in 1975) but to a wider range of students than any college had probably admitted or thought of admitting to its campus . . . (pp. 1-2)

The Open Admissions Policy brought a new population of college students (Rose, 1989; Shaughnessy, 1977) who were considered unprepared. Unlike college students in earlier decades, these students had the opportunity to improve their writing skills from trained composition teachers. These composition specialists favored reform, arguing "that writing can be taught, and that experts are needed to teach it . . ." (Connors, 1996, p. 60). They started to focus on the student, who, they believed, would be better served by other kinds of writing rather than the freshman composition courses. This perspective echoed abolitionists in the past who called for all faculty to participate in literacy instruction.

This new wave of composition inquiry produced prolific research and commentary. *Newsweek* (1975), for example, devoted an issue, entitled "Why Johnny Can't Write," to the examination of the state of writing in American schools. Shields (1975), in an article for this edition, reported a number of reasons for American students' writing deficiencies: too much television instead of reading, the emphasis on creativity,

the structural linguists' view that the spoken word was more important than the written, the belief that students have a right to their own language, overcrowded classrooms, teachers' lack of training in teaching writing, and teachers' poor writing skills.

Gray's (2000) Bay Area Writing Project (BAWP), which sought to address challenges, such as those described above, by offering training to teacher volunteers, has evolved into the National Writing Project (NWP). Since the inception of the BAWP, the NWP has spread to approximately 200 sites in 50 states, the U.S. Virgin Islands, Puerto Rico, and the District of Columbia (National Writing Project, 2008). Teacher-centered, the NWP model espouses voluntary participation in its workshops. The model invites teachers to come together in a respectful manner to share their expertise and to learn from one another's different approaches to teaching writing. The NWP espouses neither a specific writing pedagogy nor one type of writing over another, be it expository, argumentative, or personal. Thus, teachers in NWP workshops have the freedom to share multiple teaching approaches and types of writing preferences.

Moreover, nine separate studies of NWP programs (NWP Research Brief, 2008), conducted across the United States in diverse settings, found that the students of teachers who participated in NWP professional development workshops demonstrated more improvement in every aspect of writing than the students of teachers who did not participate. In the seven areas of writing skills tested in all nine studies, students in NWP classes outperformed, to a significant degree, students in the non-NWP writing classes. This finding underscored that the effective teaching of writing requires teachers to possess knowledge of writing pedagogy, its implementation, and its projected outcomes.

The next section discusses other investigations in the teaching of writing and their implications for learning and instruction.

Research in the Teaching of Writing

Emig (1971) is credited with one of the first forays into writing research which used the case study method. Her unique investigation took into account students' personal involvement in and perceptions of the academic writing experience as it progressed. To discover what her participants were thinking as they composed aloud, Emig tape recorded their thoughts and feelings as they produced several themes. In addition, she interviewed students to discover what their former writing experiences had been and how they felt about them.

Emig (1971) discovered that the students in her study composed in two ways: reflexively and extensively. Reflexive writing, she found, was more time-consuming, with frequent stops and starts for contemplation and reflection. Poetry was often the product of such a writing process, and the audience was limited to the self or a peer. Extensive writing, on the other hand, was what the participants were required to complete in school. As a result of her findings, Emig concluded that school-initiated writing required not only detachment from oneself but also focus on a single adult audience who was the teacher responsible for assessment.

Emig (1971) discovered, moreover, that the criteria used to evaluate student writing focused on students' mistakes in punctuation and spelling, students' penmanship, and the length of students' papers. This emphasis on surface issues, Emig asserted, devalued the most important elements of writing such as clarity of purpose, development of theme, and growth in complex sentence structure.

Emig (1971) ascertained as a result of her case study of eight high school seniors that school writing limited her participants because it was “unimodal” and “other-centered . . . the other . . . a teacher, interested chiefly in a product he can criticize rather than in a process he can help initiate through imagination and sustain through empathy and support” (p. 97). In addition, she criticized schools in the United States that exalted the five-paragraph essay, thereby providing few opportunities for students to experiment with other types of writing.

Emig (1971), furthermore, addressed the issue of developmental writing instruction, asserting that American high schools were teaching writing that was, quite possibly, “too abstract for the average and below-average students” (p. 99). She pointed out that English teachers had been simplifying the composing process because they were overemphasizing formulaic outlines and the correction of surface-level errors. Referring to her case study, she found that American schools, for the most part, did not sponsor prewriting activities or a time and place “. . . where a student can ever be alone, although all accounts of writers tell us a condition of solitude is requisite for certain kinds of encounters with words and concepts” (pp. 98-99).

Emig’s (1971) findings led her to formulate several conclusions that are pertinent to this study: First, Emig concluded that teachers below the college level, for the most part, did not engage in the writing they required their students to do. She explained that the reason for this might be that few American colleges and universities provided explicit and frequent writing instruction for beginning and experienced English teachers.

Second, Emig (1971) recommended that all teachers of writing be provided with required experiences with reflexive writing in the form of diaries or journals, for

example. These experiences, she conjectured, might lead teachers to discard the one-method approach to teaching writing. Moreover, having their own writing experiences might prompt teachers to give their students opportunities for reflexive writing, using modalities of their own preference.

Third, as a result of case studies like her own, Emig (1971) projected that the responsibility for the evaluation of student writing might shift from being the sole purview of the dominant teacher to being a shared experience with students' peers, whose feedback, she believed, would be more meaningful to them than the all-knowing teacher's judgment of their products. In this researcher's experience as a senior expository writing teacher, however, she has found that her students prefer to have her assess their drafts. This leads the researcher to suggest that peer response activities need to be highly structured with students being given specific criteria to follow in their assessment of one another's writing; otherwise, they do not know what to look for or how to respond in a constructive manner.

Emig's (1971) assertion that perhaps high schools were teaching writing that was too abstract for the average or below average student reiterated the concern of Holbrook (1964), a British writer and poet, who stated, ". . . our society and its system of education at the moment imply inevitably and often mercilessly that children who do badly in intelligence tests are inferior creatures" (p. 7). Holbrook became, for a time, the teacher of 19 secondary students, whose intelligence quotients (IQ's) ranged from approximately 70 to 100. In his subsequent report of this work, entitled *English for the Rejected*, Holbrook asserted that children needed to experience imaginative writing to serve their inner needs. This he found could "be done in the context of a sympathetic relationship

with the teacher that can only be called a form of love, so deep do these children's emotional needs enter one's soul (pp. 8-9).

As a result of his experiences as a teacher of children labeled below average, Holbrook (1964) sought to make available a book, which would validate the work of these children's teachers. Holbrook's narrative included samples of each of his student's work, accompanied by discussion of the individual pieces of writing and of the children themselves in order to familiarize the reader with the students' difficulties and capabilities. Holbrook learned, as a result of his investigation, that the students he studied responded enthusiastically to writing assignments that required imagination, that they viewed all academic subjects as English, and that they learned best when they interacted closely with their teacher.

Holbrook's (1964) discoveries led him to conclude that students should be given opportunities to write a variety of compositions which require use of the imagination. In fact, he ascertained that his subjects could produce imaginative works, understand what they were doing, and see how it benefited them. Although Holbrook did not refer to the term *metacognition* in his report, one can infer that that his students had reached a level of metacognitive awareness because they grew knowledgeable about their processes and how they benefited them.

As both Holbrook (1964) and Emig (1971) discovered, the students in their case studies responded most authentically to writing assignments which engaged them personally and relationally. They emphasized, however, that reflexive writing was not the norm nor the expectation in the British and American secondary school settings with which they were familiar. Reflecting upon this paradox of extensive versus reflexive

writing, Lindemann (1987) surmised that teachers of writing needed to be able to balance effectively the integration of both modalities. Nevertheless, underscoring Holbrook's (1964) assertion that "teaching is an art" (p. 3), Lindemann argued for writing classrooms that embraced the attitudes of humanism. Such classrooms would encourage students to use writing to reflect and to create meaning and then to share these discoveries.

In her description above of the writing teachers' paradox, Lindemann (1987) elaborated upon, what she believed, were the three primary reasons for teaching writing: First, knowing how to write effectively in one's profession helped to ensure economic power. She explained, "Once students enter a profession, they will find important correlations between writing ability and promotions. Writing well may not guarantee advancement, but writing poorly jeopardizes success" (p. 5).

Second, Lindemann (1987) argued that writing was a prerequisite in social interaction because it is used everyday in a number of ways: jotting down reminders, taking and sending notes, and recording personal thoughts and experiences, to name a few. Third, Lindemann viewed writing as a means of self-discovery. Writing teachers, she emphasized, needed to be concerned with both the presentation of ideas and the process that generates students' written products.

The three-dimensional writing pedagogy, which Lindemann (1987) espoused, was practical. It fostered students' intrapersonal and interpersonal intelligences by encouraging self and communal expression through writing. It also assisted professional literacy because students learned that writing effectively in the jargon of their chosen professions was an important skill that helped them communicate and, possibly, advance in their careers.

The National Commission on Writing for America's Families, Schools, and Colleges (2004) corroborated Lindemann's (1987) stance on writing expectations in the workplace. In its survey of 120 American corporations, the Commission found that its respondents, who were human resource administrators, indicated that good writing skills were of the utmost importance in recruitment and promotion of professional employees. Respondents specified, moreover, that the requirements of written communication varied with purpose and audience. Bob Kerrey, the Commission's chairperson, condensed the results of the investigation, stating succinctly, ". . . the survey confirms our conviction that individual opportunity in the United States depends critically on the ability to present one's thoughts coherently, cogently, and persuasively on paper" (p. 5).

In addition, the National Commission on Writing for America's Families, Schools, and Colleges (2004) underscored the importance of professional development for all teachers in the area of writing. Writing, they emphasized, should be taught across the curriculum and at every grade level, including college. Thus, teachers who understand the complexities of writing and write well themselves would implement it as a tool to foster their students' learning and their discovery of new ideas. This interdisciplinary and developmental approach to writing, consequently, would provide myriad opportunities for students to prepare themselves for the specific types of writing they will be required to do in the workplace.

Writing and Cognitive Development

Lindemann (1987), furthermore, discussed the important relationship between writing and cognitive development. She explained that before ninth grade students should be given opportunities for self expression in their writing. After that, writing

instruction should focus on more complex categories to develop operational thinking. Nevertheless, she added, high school and college students might encounter difficulties when they have to evaluate, classify, persuade, write for a mixed audience, theorize, abstract, and predict.

Consequently, Lindemann (1987) argued that writing instruction had to focus on the processes students employed to understand and manipulate these more challenging assignments rather than merely on the facts they were expected to know. She explained that “cognitive processes brought to bear on any writing problem are far more complex than most of us consciously realize. . . . Becoming conscious of them through the act of writing itself, we learn about thinking, discovery, imagination, and creativity” (p. 73).

In addition, as a result of their research, Lerch, Bilics, and Colley (2006) discovered that the various types of writing assignments, which Lindemann (1987) found to vary in their complexity, gave students opportunities to reflect upon their own thinking as they worked towards a final product. Lerch et al. conducted a study with the intent of helping their undergraduate and graduate students become more reflective learners. Guided by Marzano’s (2001) knowledge processing model, they used writing prompts in subject areas such as algebra, education, and occupational therapy to assist their students in integrating and reflecting upon previously acquired knowledge and new subject matter. Lerch et al. concluded that, as students progressed in their courses, their writing reflected a succession of more advanced cognitive operants.

In another empirical investigation, Pugalee (2001) analyzed the written reflections of 24 students, enrolled in a high school Algebra 1 class. The purpose of his study was to determine whether students’ descriptions of their problem solving strategies indicated

metacognitive processing and, if this were the case, to describe those functions. As a result, Pugalee found that the written reflections of the study's participants provided evidence that they used metacognitive strategies to solve specific algebraic problems. Pugalee pointed out, however, that "The role of language in the development of mathematical understanding and in supporting problem solving in mathematics is uncharted territory" (p. 9).

Nevertheless, Pugalee (2001) asserted that the findings of his investigation supported the idea that using writing as a tool promoted metacognitive practices, which enabled students to problem solve with greater dexterity. He added, moreover, that students' written reflections on their problem-solving processes provided teachers with another means of assessing mathematical learning and thinking. Pugalee, in accord with Lerch et al. (2006) and Lindemann (1987), maintained that writing was an important tool that could be used in a variety of disciplines to promote students' cognitive development.

Lindemann (1987) stressed, in addition, that freewriting activated these cognitive processes because it gave writers time to delve within themselves for the knowledge they already had and also to discover additional ideas outside of themselves. As a result, she explained, prewriting fortified student writers with an organized and idea-filled roadmap to their final products. Freewriting, as well as the other components of the Writing Process Method, will be discussed in the next section on Teaching Writing as a Process.

Teaching Writing as a Process

Elbow (1996) explored the impact of traditional writing, particularly writing assessment which focused on the evaluation of one product which supposedly portrayed a student's writing ability and proficiency. He argued that one student sample, produced in

a test situation, was not a clear indicator of one's writing ability. Elbow was particularly concerned with, what he believed, were the limitations of holistic scoring, which is the method used to evaluate the revised SAT writing test of 2004. He maintained that holistic scores were problematic because they (1) were not trustworthy or fair; (2) provided no feedback for the student or the teacher; (3) assumed there was one "true score" for any piece of writing; (4) relied on judgment which reflected the evaluator's overall feelings rather than judgment which determined the writer's strengths and weaknesses; and (5) played upon the culture's desire for evaluation, based on a single number, to rank the student's work (pp. 84-85).

Elbow's (1996) critique of holistic assessment subsumed, furthermore, his belief that "We need the utopian or visionary to help us see that what is natural is constructed, not inevitable" (p. 83). He acknowledged, however, that his utopian view of writing assessment was not always pragmatic. He conceded that institutions sometimes needed holistic scores to determine which students to admit, which to pass, and which to award scholarships. Thus, admission factors appear to be a reason for the inclusion of the 25-minute writing sample requirement on the March 2004 revised Stanford Achievement Test.

Nevertheless, in March of 2005, the new SAT, which Yagelski (2006) referred to as "a dubious milestone in the annals of writing instruction in the United States" (p. 531), became one of the "institutional realities," which Elbow (1996) acknowledged. Yagelski explained that the new SAT required 1.4 million students to complete a writing skills test, divided into two sections: a 25-minute spontaneous essay and a 35-minute, multiple-choice grammar and usage section. Yagelski criticized this type of writing assessment,

stating that “After three decades of the process movement and . . . the related emergence of critical pedagogy within composition studies, writing, as defined in schools and sanctioned by tests like the SAT, is as narrow and circumscribed as ever” (p. 532).

Yagelski (2006) proceeded to analyze the impact of three works, which, he believed, propelled the process movement. They were Elbow’s *Writing Without Teachers* (1998), Freire’s (2003) *Pedagogy of the Oppressed*, and Murray’s (2004) *A Writer Teaches Writing*. He found that these works shared two fundamental characteristics: they were clear on the purpose for writing, and they stressed the need for change in writing instruction and in schooling, overall.

In *Write to Learn*, a textbook in its seventh edition, Murray (2002), a leader in the writing process movement, proclaimed, “Writing produces writing All writers are self-taught. Your instructor can help, your classmates can help, this book can help, but you still have to write to learn to write” (p. 1). Murray cited four practical reasons for using the process method. He explained that it alleviated fear, saved time, and helped one write and talk effectively.

Although he emphasized there was more than one writing process, Murray (2002) delineated a process sequence, based on his own daily writing experiences, as well as the processes which he observed published writers and his own students used. He recommended that the writing process follow this five-stage order: focusing, researching, drafting, revising, and editing; however, he cautioned that this process was often circular and that “. . . you may even start by researching, drafting, or revising something you have written before” (p. 28). He emphasized, furthermore, that the process “should not be a

series of rigid commands but a flexible strategy,” which “must change as it confronts reality” (p. 28).

The first stage in the writing process, as Murray (2002) suggested, was finding a focused subject. Murray referred to the thesis statement as “a fully developed focusing line” (p. 77). Thus, teachers whose students must complete predetermined products can still engage their students in process-method techniques, which aid in honing a thesis statement for a five-paragraph, analytical essay, the type of essay which Emig (1971) found to be too formulaic. Murray recommended a variety of techniques for this focusing stage, depending on the writer’s preference and purpose. He encouraged students to brainstorm, to look for surprises and connections, to map or make a tree, to interview oneself, or to freewrite to discover what it was they wanted to write about.

Like Murray (2002), Moffett (1992a), a renowned writing process advocate, contended that students learned to write well if their assignments were cyclical. He used the terms “pre-writing . . . mid-writing and post-writing” (p. 14) to describe classroom composing processes. Abstracting, he underscored, was fundamental to the writing process because composing words and “composing the mind” (p. 14) were synonymous. Moffett, therefore, agreed with Vygotsky (1986), who found that the composing process often started with thinking about an idea or topic, thinking which became more concrete and linear when transferred to the written word.

Furthermore, Moffett (1992a) emphasized that students had to experience various types of writing rather than just the expository essay, the five-paragraph essay which Emig (1971) found to be driving writing curricula in American high schools. To address this problem, Moffett outlined five kinds of writing necessary for students to

explore if they were to benefit from the wealth of opportunities available to the writer. His writing categories invited students to imagine (think up), to recollect (look back), to cogitate (think over and through), to investigate (look into), and to notate (note down). Moffett did not relegate one kind of writing to a higher position than any other. Rather, he stressed that all writing explored ideas; therefore, students, in addition to expository writing, should be provided opportunities to write fiction and to experiment with figurative language. This point of view correlates with the National Writing Project's premise (Gray, 2000) that there are many ways to teach writing and that one way is not necessarily more effective than another.

For example, in his celebrated *Writing Without Teachers*, Elbow (1998) extolled freewriting, which Murray (2002) recommended as a way to discover what one wanted to say. Elbow described freewriting this way: the student writes for 10 minutes without stopping, looking back, making corrections, or reflecting. In other words, the student writes whatever comes to mind, the only requirement being not to stop. Elbow, moreover, warned that freewriting must never be discussed or commented upon. In addition, the teacher must discourage students from pausing to reflect, a directive which might create confusion because students are expected to employ critical thinking, even metacognitive thinking skills, in other learning activities.

Elbow's (1998) advocacy of freewriting, though, did not brook a *laissez faire* attitude towards writing. Like Murray (2002), he divided the writing process into stages, which he envisioned as intertwining components of an organic process, a process analogous to growing and cooking. Thus, he aptly labeled his four stages as "start writing

and keep writing,” “disorientation and chaos,” “emerging center of gravity,” and “mopping up or editing” (p. 25).

Elbow (1998) sought to eliminate misconceptions about the process of writing by comparing his organic view to that of the traditionalists, who were prone to splitting a writing task into two steps. Traditionalists, he described, cautioned the writer with directions such as these: “. . . first try to figure out what you want to say; don’t start writing till you do; make a plan; use an outline; begin writing only afterward. . . . Don’t let things wander into a mess” (p. 14). Elbow, on the other hand, argued that this kind of writing was backwards because it thwarted the writer’s natural tendency to conjure meaning from ambiguity. Rather, he insisted that writing was developmental and started with words that changed, evolved, and ended up with meaning, words that “grew” and “cooked” a message. Thus, Elbow, advocated a warming-up period, via freewriting, to give students opportunities to discover ideas, which would then translate into more concrete topics for specific writing objectives and products.

Not all composition scholars, however, have found the prewriting techniques discussed above sufficient strategies within themselves to counter the growing need for effective and long-lasting writing instruction. Hillocks (1986), for example, investigated the variety of strategies used in the classroom to develop writing skills and concluded that traditional grammar and mechanics instruction did not improve writing quality. In fact, he ascertained that these traditional emphases could be harmful.

This researcher, an expository writing teacher, has observed the harm that teaching grammar and surface skills in isolation can cause. For example, when she assigned her students practice worksheets in grammar and punctuation, some of them

became preoccupied with correctness. As a result, they focused on technical minutiae, in the hopes of getting an answer correct or in earning an extra point or two.

Consequently, this teacher researcher has made it a priority to question students as to why they decided on a specific answer and how they reached that decision. This metacognitive approach will not only enable students to monitor their own writing but also to apply this skill when writing for subject areas other than English. Weaver (1996) has provided numerous examples of how grammar and writing instruction can be integrated. Using this integrated approach would help students understand how form and function work together to generate an exemplary written product.

Hillocks (1986) examined the various approaches to teaching writing and determined that freewriting (Elbow, 1998; Goldberg, 1986) was a more effective teaching technique than traditional grammar instruction but less effective than sentence combining in improving the quality of writing. Hillocks, furthermore, found students internalized applied criteria to new writing assignments even when the criteria were not before them. He cautioned, however, that the less effective methods of writing instruction, like freewriting, when integrated with inquiry, sentence combining, and the study of models, which Christensen (1978) and Gray and Benson (1982) extolled, did have a place in the curriculum because, as Murray (2002) and Elbow (1998) asserted, they helped students find ideas. The National Writing Project, as discussed previously, however, has not espoused one approach to writing instruction over another but, rather, has emphasized that effective writing is the result of diverse strategies employed by trained and knowledgeable teachers. The next section will describe several prominent viewpoints on the teaching of writing.

Voices in the Teaching of Writing Movement

Elbow's (1998) use of the growing-cooking metaphor to illustrate his writing process theory evoked images of student writers preparing, creating, and nurturing their subjects. Images, such as these, have been used repeatedly in composition studies, perhaps, because the Women's Movement and the field of composition studies emerged at about the same time (Sullivan, 1992). Many of the methods and issues that composition teachers and researchers studied, beginning at the time Emig (1971) published her groundbreaking case study, discussed earlier in this chapter, were similar to those gender issues scholars were investigating.

Belenky, Clinchy, Goldberger, and Tarule (1986), for example, elaborated upon the optimal classroom environment, in which, they argued, process learning, cooperation, collaboration, peer response, first-hand knowledge, and voice were commonplace. Belenky et al., notwithstanding, were writing from the feminists' point of view. Nevertheless, they presented a strong case against the traditional, authoritarian model of teaching and learning, in which the teacher was the expert and the student an empty vessel. Freire (2003) referred to this type of instruction as "the banking concept" (p. 80), which he asserted, was an insidious, systemic practice that kept students subservient.

Freire (2003), in contrast to the banking model, advocated for "problem-posing education" (p. 81), which he viewed as "the practice of freedom" (p. 80). This practice, he avowed, placed the student in the context of the world-at-large, of which the student was a tangible part. In Freire's world, people were a concrete reality; therefore, he argued, "Authentic reflection considers neither abstract man nor the world without people, but people in their relations with the world. In these relations, consciousness and

world are simultaneous: consciousness neither precedes the world nor follows it” (p. 81). Freire’s philosophy of education, though secular, reflects the philosophy of Catholic education (National Conference of Catholic Bishops, 1972), which emphasizes the development of each individual student within an interactive, globally conscious community.

Although Freire (2003) endeavored to educate poor, illiterate adults, Shaul (2003), in his “Forward” to Freire’s *Pedagogy of the Oppressed*, maintained that Freire’s pedagogy and philosophy remain relevant in the 21st Century. Shaul explained that the struggle for freedom Freire’s Latin American students experienced “is similar, in many ways to the struggle not only of blacks and Mexican-Americans but also of middle-class young people in” the United States (p. 29).

Thus, the stated educational philosophy of Catholic education (National Conference of Catholic Bishops, 1972), the educational philosophy of Freire (1998, 2000), and the educational philosophy of Vygotsky (1978, 1986) have emphasized the development of the individual within a societal context, a context which recognizes and encourages each student’s unique needs, skills, and talents. For students, the classroom is this context. It is the setting in which, ideally, they are encouraged to thrive academically, personally, and interpersonally. The literature, nevertheless, has suggested that the ways males and females learn and interact may influence their academic success. The next section will discuss gender issues as they pertain to learning and instruction and their implications for classroom practices.

Gender Studies and Learning and Instruction

Gurian and Stevens (2004) reported that scientific technology, such as positron emission tomography (PET) and magnetic resonance imaging (MRI), have enabled researchers to determine that the male and female brains are different. They concluded, as a result, that males and females learn differently. Boys, for example, are more physical in the classroom than girls because their brains have less of the chemical oxytocin, which stimulates bonding. Boys' brains, moreover, tend to separate learning into compartments while girls' brains enable them to multitask and to transition more smoothly from lesson to lesson.

Gurian and Stevens (2004) explained that boys' brains, in addition, need renewal time, a rest state, which is why they may fall asleep or fidget during a lesson. This is particularly true when teachers employ a verbal method of instruction without taking into account males' predisposition for visual-spatial stimuli. Female brains, on the other hand, do not rest, which enables girls to listen and to remember sensory details better than boys. This ability to stay focused, without a brain rest period, and to store details enables girls to provide more details in their writing assignments than boys, for the most part, tend to do.

Gurian and Stevens (2004) argued that schools have failed to consider the innate gender needs of males and females. They proposed the "nature-based" (p. 24) approach to learning and instruction. An example of this approach was a pilot program at the University of Missouri-Kansas which provided gender training, with emphasis on the male and female brains, for teachers from six school districts. Students, whose teachers participated in this pilot program, showed significant improvement in achievement.

Accordingly, in Alabama, where gender training was statewide, boys demonstrated academic and behavioral improvement. Moreover, at Beaumont Middle School in Lexington, Kentucky, classrooms were structured with male-female brain research in mind. There, middle school students learned reading, writing, mathematics, and science in same-sex classrooms.

The work of Gurian and Stevens (2004), authenticated by scientific studies of the male and female brains, has provided insight into the way males and females learn and interact in the classroom. Their “nature-based approach” (p. 24) challenges teachers in all subject areas to provide instruction and to facilitate learning environments that accommodate the unique cognitive, social, and academic needs of each student, which is a daunting task indeed, especially for writing teachers in crowded classrooms.

Empirical Studies of Adolescent Males in the English Class

Carter (2005), a high school English teacher in Los Angeles at a predominantly African-American school, engaged in a two-year study of the African-American males in her advanced-placement (AP) English class. She was concerned that the public school system was not addressing the learning needs and styles of male students, particularly those in her AP English classes.

In the first year of her study, Carter (2005) surveyed the 10 males in her AP class to determine the reasons for their low achievement. They indicated that they wanted more opportunities for active learning. As a result, she changed her teaching strategies to include more group activities and projects. What she discovered, however, was that the young men who chose to work only with other boys had difficulty meeting deadlines, which affected the quality of their writing, while those who worked in male-female

groups submitted better written products. Carter surmised that more active learning opportunities did not necessarily eliminate her male students' lack of motivation.

In the second year of her study, on the other hand, Carter (2005) observed that her male students were motivated and successful. She shifted her research focus from why her male students were underachieving to why they were excelling in her AP English class. Four factors emerged from her enquiry. The first factor was that three of the four boys she interviewed belonged to a faith community, which modeled literacy and encouraged education. Second, the boys made a point of choosing positive friends. Third, they had support from their families, and fourth, they had prior preparation: Carter was their English teacher during their junior year and encouraged them to take advantage of the academic resources at their own high school and enrichment opportunities provided at neighboring universities. Carter sought to improve her male students' achievement by including in her methodology more active learning opportunities, which the boys indicated they desired.

Carter's (2005) findings in the second year of her study have implications for this investigation. Although her study took place in a secular setting, the factors she found that enabled her AP male students' academic and personal success reflect tenets of the philosophy of the ideal Catholic education: community is taught and lived (National Conference of Catholic Bishops, 1972); interaction and personal involvement are encouraged (United States Catholic Conference, 1979); and each student's developmental needs are considered.

In addition, Bruemmer (2006) wrote of her experiences as an English teacher at an all-boys Catholic high school, which has endeavored to accommodate the inherent

learning styles of adolescent males. Bruemmer changed her English curriculum as a result of her knowledge of and interest in male-female brain research. She was aware of Gurian and Stevens' (2004) nature-based method, particularly their description of the state of rest, which the male brain needs when it experiences verbal overload. Thus, to minimize this overload in her classroom, Bruemmer structured her 85-minute English class in such a way that her male students could move around, physically transitioning from one task to another. In addition, she engaged her students in a variety of kinesthetic and verbal tasks, which enabled them to create models, perform, research, write, and present, using a variety of media. The discussion that follows examines literature that focuses specifically on males and females in the writing class.

Gender and the Writing Class

Flynn (1988) delved into whether males and females exhibited differences in their writing. She analyzed the personal writing of four, first-year college composition students, two males and two females. She found that the female students used their intuition and knowledge to write and manifested a strong need to connect with others. The male students' narratives, on the other hand, recounted individual achievement or failure and implied a predisposition to remain separate and distinguished from others. Flynn's (1998) analysis of her students' narratives led her to suggest that males and females might not use language in "identical ways or represent the world in similar fashion" (p. 431). Spender (1993), Lakoff (1993), and Coates (1993) purported that women used language differently than men; however, they disagreed on whether women's language was problematic. Lakoff assumed, on the one hand, that female language was deficient while Coates argued that female language was unique and strong,

most valuable feature being its “co-operativity” (p. 406), which critics had assailed.

Tobin (1996), a college English teacher, observed his male students from a male perspective. He analyzed the types of written assignments his male students produced. He found that their writing shared three characteristics: First, the author was on a quest, an epic experience from which he usually emerged victorious. Second, male stories emphasized separation from the community. Third, their narratives, which often contained strong male figures almost never contained strong, female figures.

Accordingly, the investigations on the influence of gender in academic settings implied that teachers’ knowledge of the differences between how young men and women think and interact in the classroom had the potential to facilitate more meaningful and productive learning and instruction. To this end, Sommers and Lawrence (1992) investigated how college composition students interacted in group response situations. They concluded from their study that students who were required to work collaboratively needed instruction in how to interact with one another. In student-directed groups, the females, whom they observed, made fewer comments and took fewer turns than the males. As a result, Sommers and Lawrence recommended that the males required instruction in making suggestions, asking questions, and observing. The females, on the other hand, needed instruction in articulating and expressing their opinions matter-of-factly.

Although Sommers and Lawrence (1992) investigated how males and females interacted in collaborative learning situations, their conclusions can be applied to the writing class in general. Students in the writing class, for example, need to be given explicit instruction in what to look for in one another’s writing in order to alleviate

superficial criticism and, sometimes, incorrect editing, and to help one another understand what they are doing when they write. In other words, they can assist one another in developing metacognitive skills, which they will be able to apply in future writing assignments; however, as Lickona (1991) asserted, interactive, group activities must be conducted within the perimeters of structured and well-organized lessons. This is true in all subject areas but especially important in the writing class. Scaffolding of lessons in the writing class helps to ensure that students' writing skills and the cognitive awareness required for each writing task continue to evolve. The next section documents the viewpoints of writing scholars who have emphasized the use of writing as a tool to foster students' cognitive development.

Writing as a Cognitive Tool

Moffett (1994) argued that a variety of writing experiences encouraged the development of cognition. Providing students with a variety of writing experiences, he asserted, encouraged the discovery of personal voice and the development of cognition, which Moffett viewed as conduits to past, present, and future knowledge and, subsequently, as prerequisites for human development. He explained that consecutively “. . . more comprehensive contexts for the learner . . . range from the system of an individual mind to that of . . . society and on through that of all of nature . . . from consciousness through culture to cosmos” (pp. xiii-xiv).

Although writing from a secular point of view, Moffett, as well as Freire (2003) and Vygotsky (1978, 1986), proclaimed the need for a constructivist approach to student development. This approach is intrinsic to the philosophy of Catholic education, which

seeks to promote students' spiritual, individual, collective, and global awareness (Bryk, Lee, & Holland, 1993; Convey, 1992; Groome, 1998).

Berthoff (1984) reiterated the importance of educating for awareness. She declared that "Our job [teachers of writing] is to devise sequences of assignments which encourage conscientization, the discovery of the mind in action" (p. 755). These sequenced assignments, Berthoff maintained, fostered students' abstract thinking skills, leading them to understand that meaning made meaning and that form begot other form.

To this end, one method used to heighten students' awareness is encouraging them to write about themselves. For example, Goldberg (1986) held personal writing in high esteem. She advocated freewriting in order to draw out the thoughts and feelings of her students. Writers, she explained, must be free of worries about what to write, how to write, and where to edit and proofread because these worries impeded the creation process. This method, she believed, freed writers in the early stages of composing, allowing them to let their inner voices take over.

Some of this freewriting, Goldberg (1986) admitted, turned out to be useless; other times it contained deep, rich thoughts. Writers then extracted these rich finds from the useless ones and developed them in order to move on to, or were required to move on to, higher levels of reflection, analysis, and abstraction. The teacher's responsibility, Goldberg emphasized, was to provide challenging and meaningful writing assignments, connecting the treasures dug up in the free-writes to objects or concepts beyond the students' personal experiences. Thus, the learning outcome for Goldberg's students would appear to be the development of scientific concepts, which Vygotsky (1986) theorized, matured within the social setting of the classroom.

In addition, O'Reilly (1993) advocated personal writing. She believed that personal writing engaged her college English students in "soulmaking" (p. 72), a process which culminated in students discovering their own voices. She elaborated that understanding oneself gave one the ability to convey this understanding to others. Thus, she elaborated, "Learning to write so that you will be read . . . vitalizes both the self and the community" (p. 58).

The classroom, which O'Reilly (1993) envisioned, was a place in which the community practiced connecting with self and others. In her writing workshops, teacher and students learned to confront, oppose, assert, and critique without impairing the individual voice and communal spirit, skills Belenky et al. (1986) found to be essential for objective analysis. This was a difficult undertaking, O'Reilly opined, because Americans had been reared to respect dominance and aggression and to honor achievement at all costs. She emphasized, nevertheless, that conflict was natural and good although difficult to manage and resolve. To address the issues of classroom conflict and management, Lickona (1991) and Sommers and Lawrence (1992) underscored the importance of explicit instruction in how to interact effectively with one another in classroom and in group activities.

Through the practice of critical pedagogy, as Freire (1996, 1998, 2000) illustrated, students, like those of O'Reilly (1993), could discover their voices, and, ultimately, the authority to think and write reflectively about their inner as well as their outer worlds. O'Reilly's teaching nurtured such discovery. Her classroom climate spawned the connected teaching and learning, which Belenky et al. (1986), Freire (1998, 2000), Moffett (1994), and Palmer (1998) asserted were crucial in developing higher order

thinking skills. Personal writing had a prominent place in O'Reilly's classroom because it not only enlightened the spirit, affirming each student's voice, but because it also built community, outcomes which are primary goals of Catholic education (National Conference of Catholic Bishops, 1972).

Calkins (1994), furthermore, illustrated how personal and expository writing could be intertwined, using the memoir genre as a model. First, students read and listened to models from literature, and then they recalled emblematic moments, themes, and strands, which had woven themselves throughout their own lives. Calkins stressed how important details were in these potential memoirs and how fiction-like a memoir might seem because imagination and memory worked together. Memoir writing, she asserted, gave students the opportunity to connect the little pieces of their daily lives. In addition, it gave them the authority to validate and then to analyze these experiences from objective stances, much like the separate knowers, whom Belenky et al. (1986) identified. Separate knowers, as Belenky et al. deduced, learned to relinquish their personal feelings and points of view in order to scrutinize subject matter astutely. Hence, they were able to analyze objectively, even their own experiences, without emotional encumbrances.

Calkins's (1994) pedagogical strategy, in which students' wrote about themselves and then examined objectively what they had written, corresponded with Marzano's (2001) and Anderson, et al's (2001) conclusions on the importance of fostering students' metacognitive skill development in all subject areas. The next section will discuss the Writing across the Curriculum Movement and its effect on writing instruction and cognitive development.

Writing across the Curriculum

The research of Britton, Burgess, Martin, McLeod, and Rosen (1975) at the University of London's Schools Council Project spearheaded the Writing across the Curriculum Movement in the United States. While writing across the curriculum became, subsequently, an established practice in many American elementary schools, it found less favor at the secondary level, where content was often the primary focus. As a result, to promote writing across the curriculum in secondary schools, the National Writing Project (NWP) and Nagin (2003) suggested that high school administrators provide in-service training and opportunities for teachers and staff to observe programs in which writing played an integral part in all subject areas. They argued, furthermore, that this writing challenge required a paradigm change. Such a change would require all core disciplines to use writing as a tool to advance knowledge acquisition, inquiry, and self expression. They anticipated that this multi-disciplinary perspective would benefit students in three ways. It would improve reading, generate thinking, and foster critical reflection.

As early as 1971, Emig foresaw that writing across the curriculum in secondary schools had to become a priority. She advised, however, that its implementation required a systemic approach, driven by informed pedagogical practice and theory. With a similar vision, Gray (2000) began the Bay Area Writing Project in 1972 at the University of California, Berkeley, which evolved into the National Writing Project in 1978. Teachers, who are selected for the NWP Summer Institute, range across the curriculum. They are kindergarten through university teachers in public and private schools in rural, urban, and suburban areas.

The Writing across the Curriculum Movement motivated Zinsser (1988) to set about dispelling students' and, for that matter, teachers' fear of writing in the content areas. Because he believed that writing was an organic part of every subject, he described how students could write comfortably and effectively when required to do so in all of their classes. He explained that

Writing is a tool that enables people in every discipline to wrestle with facts and ideas. It's a physical activity, unlike reading. Writing requires us to operate some kind of mechanism – pencil, pen, typewriter, word processor – for getting our thoughts on paper. It compels us by the repeated effort of language to go after those thoughts and to organize them and present them clearly. (p. 49)

Nonetheless, the onslaught of computer technology in schools, homes, and businesses, added another, more complex layer to Zinsser's description of writing as a physical activity, requiring the operation of a mechanism. The next section discusses the implementation of technology in writing across the curriculum programs.

Writing across the Curriculum with Technology

In the 25th anniversary edition of his *On Writing Well*, Zinsser (2001) addressed another challenge to writing effectively and correctly across the curriculum and across the world of work. That challenge was technology. In the 1980s, the word processor, with its electronic editing and revising capabilities, enhanced the speed at which a written document could be produced. Then, in the 1990s, electronic mail and the Internet afforded instantaneous communication. Zinsser, while lauding the fact that these communications were writing-based, cautioned that the new technology also encouraged the loss of the formalities of good writing.

Zinsser (2001) explained that e-mail has created a profusion of written communication, an indication that the fear of writing has been eliminated. Nevertheless, because e-mail has no protocol, these communications have given rise to a rash of poor writing. Zinsser attributed this phenomenon to e-mailers' failure to revise their writing. Revision, he asserted, was the essence of good writing. To avoid problems, he suggested that the tools, which are the words used in all types of writing, had to be crafted and used correctly.

Zinsser's (2001) observations on the positive and negative effects of electronic communication on writing aptitude were reiterated by Carpenter (2006), an investigative reporter, who explored the state of business writing. He explained that business schools, like those at Notre Dame, Southern Methodist, and Xavier Universities, were concerned that students' writing skills had deteriorated. Moreover, he discovered, that in the world of work, companies were becoming uneasy about their employees' writing deficiencies and about the fallout from some electronic messages. Carpenter clarified that "it's no longer just the inability to string clear, coherent thoughts together that poses the biggest risk. Rather, it may be clicking the 'Send' button too hastily" (p. 13).

Carpenter (2006) cited two examples of hastily sent e-mails, which caused considerable damage. Radio Shack used e-mail to lay off 400 employees without prior notice. The CEO of Cerner, a medical software designer company, used e-mail to berate employees for laziness, which resulted in the company's stock dropping to 22% in three days when the message was posted on the Internet.

Carpenter (2006) reported that to prevent such mishaps, Notre Dame University offers business writing courses that emphasize clarity, organization, and audience. He

quoted O'Rourke, a professor in the program who stated that writers must ““focus on the needs of the reader Otherwise, she won't pay attention, she won't do what you want, she won't retain what you said”” (p. J3).

Teaching students to write clear, precise, and accurate communications was the goal of several business schools cited in Carpenter's (2006) report. Professors in these schools suggested that electronic communication was one of the reasons for the decline in writing skills. For example, Clark, a business professor at Xavier University, stated that ““Young people are wrapped up in the speed with which they communicate rather than seeing writing as a reflection of their best selves”” (p. J3). Hill-Strasser, a business professor at Southern Methodist University, was concerned that even her brightest students appeared to be struggling more with writing. She surmised that ““lapses – such as writing paragraphs that run three-quarters of a page – are linked to young people's increased multitasking and electronic distractions”” (p. J3).

These distractions, nevertheless, are integral to modern culture. Over four hundred years ago, when Shakespeare's plays were performed, audiences had to listen to the playwright's words, which were intricate weavings of the literal and symbolic. They viewed actors on the stage and heard their voices, but they had no visuals to distract them from the words. There were few costumes and props, and, of course, no artificial lighting to appeal to one's visual sense.

In the 21st Century, audios and visuals are everywhere and can be delivered instantaneously. Thus, instead of honing two predominant senses, as viewers and listeners did in Shakespeare's time, people in the 21st Century must accommodate and extract meaning from multiple sensory stimuli, often converging at the same time. When

a population becomes accustomed to receiving, internalizing, and expediting knowledge in a multi-sensory mode, it only stands to reason that traditional skills, as they once were defined, will need refining within the broader spectrum of contemporary needs and expectations.

Zinsser (2001) found electronic communication to be both a blessing and a curse because students and those in the work force now wanted to write, or were required to write, and were writing prodigiously, but often badly. Suffice it to say, though, that inventions over the centuries have required the global community to write and respond and read and interpret at an increasingly frenetic pace.

Murray (2002), in addition, addressed the use of up-to-date writing tools, which from his point of view, facilitated thinking. He underscored the importance of writing well in all subject areas because, as he maintained, those who communicated effectively in writing wielded power in the world of work. The conclusions of the National Commission on Writing's survey of business leaders (2004, September) have substantiated Murray's assertion that good writing is a powerful tool in the professional workplace.

Nevertheless, Hawisher and Selfe (2000), who investigated the use of computer technology to teach writing, concluded that the indiscriminate use of technology could prove detrimental to the development of writing skills. They stressed that the use of technology to teach writing must undergo careful and critical examination if it is to be a successful learning tool, one which would improve, rather than hinder, students' writing proficiency.

Notwithstanding the possible negative effects of technology use in some schools and in the business world, Kohl (1996) envisioned technology's profound potential for improving instruction and learning across the curriculum. He explained that

What a computer can do – what no hand tool can do – is shape the material it is provided with independently of the user, make suggestions, and in many ways approximate the functioning of a mind itself. This makes the computer a quasi-intelligent tool All of this has exciting educational potential. We can . . . think across subject areas and develop programs to connect learners in complex combinations at all levels of expertise. With the computer, for example, people can spend more time together in the arts or discussion while simultaneously having quick, efficient access to content material. It provides complex cultural representation in multiple media, and it has the potential for shaping curriculum to the needs of each student, class, or community. In other words, the computer is a potent vehicle not only for remote communication . . . but also for enhancement of face-to-face learning. (pp. xvi-xvii)

Gooden (1996), reporting on the positive effects of multi-media enhanced instruction, described how six schools used technology to revitalize learning across the curriculum. Two of these schools were St. Benedict's Preparatory School in Newark, New Jersey, and Pine Ridge High School, Pine Ridge, South Dakota. St. Benedict's created a successful journalism course called *Newark InDepth*, a writing project, which adapted technology to fit the school's curriculum.

The project was successful because students were directly involved; it was about their lives and their neighborhood. They shared responsibility for the development of writing assignments for their *Newark InDepth* magazine. This motivated them to work rigorously to produce a stellar product, using a variety of media. Their journalism project also encouraged them to interact with members of their own community in order to obtain information for special features on topics like toxic contamination and school reform.

Furthermore, the success of St. Benedict's journalism course was predicated by the fact that there were three writing teachers for 50 students. A manageable ratio of students to teacher allowed for daily personal and academic interaction, which kept students progressing and teachers frequently assessing progress. Adequate staffing of the Newark Studies Program, the teachers' passion, and the students' motivation enabled the St. Benedict's technology-driven writing program to thrive.

Another high school with an exemplary, multi-media enhanced writing program was Pine Ridge High School in Pine Ridge, South Dakota. Its Myths and Legends curriculum, with the aid of computer technology, bridged the gap between the Native American reservation and the outside world. For example, one young woman conducted internet research in order to compare the weaving motifs in the *Odyssey* and a Sioux tale set in the Badlands.

When Apple awarded Pine Ridge a grant for computers, students used them to illustrate and animate the legends and tales which tribal elders had told to them in interviews. Their drawings came alive before their eyes, and this evidence of their own superlative work gave rise to an abundance of HyperCard creations, staged performances, and a literary anthology. They composed music and filmed videos electronically and used special applications to study other subjects like trigonometry.

At Pine Ridge High School, the integrated use of technology and the faculty's pedagogical practices, incorporating multiple intelligence theory (Gardner, 1985, 1991, 1999, 2000), fostered higher levels of critical thinking. One young woman, for example, concluded that the Myths and Legends Program taught her much to be proud of about herself as an Oglala Sioux. Another student, who synthesized his skills as a storyteller, a

saxophone player, an illustrator, and an animator, used HyperCard to portray a street scene.

Pine Ridge students, moreover, honed their interpersonal skills by telecommunicating with English students in Orlando, Florida, who were seeking authentic information on Native Americans. This interchange extended the Pine Ridge students' world, giving them the opportunity to share their culture with other teenagers, thereby increasing their own understanding and, ultimately, their own self-confidence. Their electronic journey within and beyond the Pine Ridge Indian Reservation was a testament to their teachers' vision and the computer's power and versatility. It was, moreover, an example of constructivist teaching and learning, which Catholic education (Bryk, Lee, & Holland, 1993; Convey, 1992; Groome, 1998), secular writing experts (Moffett, 1994), educational psychologists (Vygotsky, 1978, 1986), and instructional practitioners (Weaver, 1996) have promulgated.

In spite of success stories such as Gooden's (1996), however, Hawisher and Selfe (2000) in their investigation of electronic classrooms cautioned that technology did not always foster learning or change instructional practices. They concluded from their class observations that

We can no longer afford simply, and only, to dwell on the best parts, to tell stories about the best classroom moments, and to feature the positive findings about computers. Rather, we must begin to identify the ways in which technology can fail us We need to be aware of the fact that electronic classrooms can actually be used to dampen creativity, writing, intellectual exchanges, rather than to encourage them. We need to talk about the dangers of instructors who use computers to deliver drill-and-practice exercises to students or of instructors who promote the use of style analyzers to underscore student errors more effectively than they did five years ago with red pens. (p. 135)

Freedman, Dyson, Flower, and Chafe (1987), moreover, articulated the need for more research into the computer's effect upon the development of writing skills. They asserted that computer technology has changed writing procedures, some of which might quite possibly become obsolete. Thus, Freedman et al. advised researchers to foresee pending changes and their effects upon writing instruction.

In addition, Yancy (2004) pointed out that "Helping writers develop fluency and competence in a variety of technologies is a key part of teaching writing in this century" (p. 38). Teachers across the curriculum, then, must not only learn and apply the basics of effective writing instruction in their subject areas, but they must also take into account the technological savvy, which many of their students and the culture-at-large already possess.

Nevertheless, Tchudi and Huerta (1983) stressed that content had to be at the heart of the writing process in the subject areas. They explained that "Much of teaching writing in the content areas consists not in telling students *how* to write, but in creating situations where they want to write and want to write well, using their subject-matter knowledge in the process" (p. 8).

Tchudi and Huerta (1983) designated several actions that subject matter teachers, in cooperation with English teachers, could implement to provide more writing experiences for their students: (1) Assign at least one rigorous writing project per semester. (2) Engage students in informal writing on a daily basis. (3) Inform students of the writing conventions of their specific disciplines. (4) Evaluate writing not only for content but also for quality. (5) Teach correctness only when errors interfere with communication. (6) Provide the English faculty with a sample of each student's best

writing for a particular course. Tchudi and Huerta's explicit recommendations for writing in the content areas implied that schools needed to approach the teaching of writing from an interdisciplinary point of view. This point of view will be discussed in the section which follows.

The Interdisciplinary Nature of Writing across the Curriculum

Moffett (1994), who developed K-12 language arts curricula for North American public schools, underscored the importance of a holistic view of education. He emphasized that speaking, listening, reading, and writing were integrated processes. He explained, furthermore, that all subjects, other media, and the arts influenced the development of students' language arts skills.

Similarly, in the conclusion to their report, *Ten Years of Research: Achievements of the National Center for the Study of Writing and Literacy*, Freedman, Flower, Hull, and Hayes (1995) emphasized the importance of writing for individual as well as societal development. They proclaimed that writing-based literacy programs developed social and intellectual skills, leading to heightened performance levels and greater success in school and at work. Thus, writing had to be integral to the development of literacy because it increased individual success, which, subsequently, assisted in the larger community's effectiveness.

In addition, Costa and Liebmann (1997) stressed the need for the elimination of the boundaries which have separated the disciplines. They explained that, in order to enhance learning, curriculum developers should take advantage of the fact that the disciplines are naturally interdependent and interrelated. Citing Senge (1994), they added "that we are all natural systems thinkers and . . . the findings in cognitive research are

compatible and supportive of the need to move from individual to collective intelligence, from disciplines to themes, from independence to relationships” (p. 31). Hillocks (2005), to this end, asserted that composing is the core of education because, when students develop their writing skills, they are able to make better progress in other educational enterprises.

Hull (1989), resonating Tchudi and Huerta’s (1983) view that writing was a means to understanding specific subjects in context, reflected that writing is a process which evolves through multiple, integrated contexts that play upon one another. Wheatley (1999) described, on a global level, the complexity and interrelatedness of contexts:

Our zeitgeist is a new (and ancient) awareness that we participate in a world of exquisite interconnectedness. We are learning to see systems rather than isolated parts and players We can now see the webs of interconnections that weave the world together; we are more aware that we live in relationship, connected to everything else; we are learning that profoundly different processes explain how living systems emerge and change. Many disciplines, in different voices, now speak about the behavior of networks, the primacy of relationships, the importance of context, and new ways to honor and work with the wholeness of life. (pp. 157-158)

Wheatley’s (1999) theory, applied to instruction and learning, provides a blueprint for 21st Century schools. As Costa and Liebmann (1997) averred, 21st Century schools need to deliver instruction with the tacit understanding that the disciplines are related and interdependent parts of the whole, which Wheatley viewed as a seamless tapestry of world systems. Enlightened schools of the 21st Century, then, would view each individual as an active participant in an evolving learning community. As a result, 21st Century schools will need to foster individual and collaborative thinking through informed, articulated, and collegial writing across the curriculum programs. Because

Catholic schools promote values, service, and community-based learning and instruction, they provide an ideal setting for the advancement of students' cognitive skills, particularly metacognition.

Moffett (1992a) emphasized the recursive, cyclical nature of the writing-thinking process, accentuating the fact that each stage of writing is valuable. For this reason, he asserted, students must be given a variety of writing opportunities in all of the disciplines.

Applying this theory to pedagogical practices, Lindemann (1987) wrote that

An effective writing teacher needs to know much more than can be found in most composition texts and grammar handbooks. The "discipline" to which we belong is housed not only in English departments but also in linguistics, psychology, sociology, foreign languages, and other fields that contribute to our understanding of how human beings communicate. We are members of an interdisciplinary profession, rooted in the humanities, certainly, but borrowing important insights from the sciences and social sciences too. (p. 8)

Thus, intrinsic to modern pedagogical theory is the understanding that to write is to think; therefore, writing is a necessary tool in all subject areas because it develops students' cognitive skills. Furthermore, students who learn to reflect upon their own thinking and the processes they use to complete specific writing tasks, to metacogitate, in other words, have a greater probability of personal, academic, and professional success.

Summary

This Review of the Literature was divided into eight sections: (1) Metacognition, (2) Lev Vygotsky and the Zone of Proximal Development, (3) Lev Vygotsky and Writing as a Tool, (4) The Teaching of Writing Movement, (5) Research in the Teaching of Writing, (6) Gender Studies and Learning and Instruction, (7) Writing as a Cognitive Tool, and (8) Writing across the Curriculum.

The National Commission on Writing in America's Schools and Colleges reported in April of 2003 that American schools needed to improve the teaching of writing. To address this need, the revised Stanford Achievement Test (2004) incorporated a timed, writing sample section to ascertain students' writing proficiency. Critics of this writing test, however, took issue with its purpose. They argued that the research in composition studies had proven that producing good written work takes time, much more than the 25 minutes students were allotted on the 2004 SAT.

Although the National Writing Project (NWP) does not advocate one writing pedagogy over another, composition researchers have discovered that using a writing process is one of the most effective ways to help students improve their writing skills. This process includes using various focusing techniques, drafting the required written assignment and then getting feedback from peers and teachers, revising and editing after peer and teacher response, and, finally, publishing the polished product. This process method can be used in any discipline, not only to help students complete required written assignments, but also, to help them think about and master specific subject matter.

A review of the literature also revealed that researchers generally agree that schools need to develop curricula based on the understanding that instruction and learning must be interdisciplinary. Writing, for example, should not be relegated to the English Department because honing one's thoughts, via the word processor or pen and paper, fosters thinking. Moreover, cognitive skills developed in one subject area transfer to other disciplines. This is particularly true when students develop metacognitive skills because they become accustomed to thinking about how and why they are performing and completing specific learning tasks.

Lev Vygotsky, the Russian educational psychologist, has been credited with inspiring metacognitive studies. He believed that students achieved best when partnered with a teacher or more knowledgeable peer. He theorized that all students had the potential to learn scientific concepts beyond their ascribed developmental level. Thus, Vygotsky argued that learning preceded development. This learning, moreover, had to take place within a social setting because interrelationships allowed for the internalization of knowledge.

Vygotsky balked at standardized testing which evaluated a student's achievement at a specific point in time. Rather, he insisted that students should be evaluated to determine their future potential. To this end, he developed an assessment theory that took into account what a child could learn with the assistance of the teacher. He called his theory the *Zone of Proximal Development (ZPD)*. The evaluation of students using this theory calls for determining what they can do on their own and what they could do with the guidance of a good teacher or more able peers. Since Vygotsky's death in 1934, his ZPD theory has given rise to myriad interpretations, theories, and movements.

These offshoots of Vygotsky's influence appear to have several characteristics in common. They stress that students learn best when they are actively involved with their peers and teachers in an interdisciplinary learning environment. They espouse, in addition, that students should be taught to reflect upon their own thinking and the cognitive processes they use, and they insist that assessment needs to include both the student's current level of achievement and his or her future learning potential. Given the opportunity to learn in accord with the findings of Vygotsky and his followers, students in the 21st Century will be better prepared, as adults, to participate in the global world,

which promotes interrelationships and thrives and depends upon instantaneous written communication.

The philosophy of Catholic education correlates with Vygotsky's constructivist theory of learning and instruction because Catholic schools champion community interaction and the development of the whole person. Inherent to Catholic school philosophy is the belief that students must be prepared to become global citizens who value individual growth and who strive to develop positive interpersonal relationships.

Catholic schools, ideally, endeavor to foster reflective practices in order to engender students' personal and interpersonal growth. As a result, Catholic schools need to encourage writing in all subject areas because it affords opportunities for students to concretize and expand upon their thoughts. Moreover, when students are able to recognize and monitor their own cognitive skills, they are better able to navigate the myriad challenges, such as the 2004 SAT writing requirement, which they encounter as they transition from one academic level to another. Catholic schools, because of their focus on reflective practices, have the potential to help students become aware of their own cognitive processes. The most effective way to do this is through writing, a tool which serves to unearth prior knowledge, to focus thoughts, to explore new ideas, and to analyze one's own thinking in terms of a specific assignment, regardless of the subject area.

CHAPTER THREE

METHODOLOGY

Restatement of the Problem

In 2003, The National Commission on Writing in America's Schools and Colleges reported that writing had been neglected "in most American schools" (Lewin, 2003, p. 1). The Commission's report, *The Neglected "R": The Need for a Writing Revolution*, outlined a five-year plan to increase students' writing proficiency and to train teachers to incorporate writing in their subject areas. Members of The National Writing Project (NWP) and Carl Nagin (2003) underscored the need for writing instruction that emphasized process as well as product. The process method, they argued, encouraged metacognitive thinking, the ability to assess one's own strengths and weaknesses, which promoted better writing. Moreover, the inclusion of metacognitive skill development in writing instruction empowered students to take charge of their own learning.

Nevertheless, using writing to foster students' metacognitive skill development presents two challenges for the teacher: The first is knowing how to integrate metacognitive skill development into writing in ways that are meaningful and long-lasting. The second is understanding how to develop students' metacognitive skills to the point at which learning becomes self-directed. As a result, the researcher's purpose was to investigate this two-layered problem to determine how teachers use writing as a tool to foster students' metacognitive skill development.

Research Design

This research was qualitative. The researcher interviewed eight teachers in the

subject areas of English, history, mathematics, religion, and science, who were employed in high schools of a Northern California diocese. The qualitative data collected in these interviews were transcribed and then interpreted through a thematic analysis approach.

Population

The teachers interviewed were employees of Catholic secondary schools in a Northern California diocese. This diocese oversees nine secondary schools. Six are coeducational high schools; two are all-girls high schools, and one is an all-boys high school. The approximately 380 teachers in these nine Catholic high schools serve an estimated 6,282 students (Private School Review, 2006). The eight teachers who volunteered to participate in this study taught at three of these high schools. One of these schools is an all-girls school, and the other two are coeducational.

These eight participants emerged from a questionnaire the researcher used in order to determine whether the methodology under consideration was a viable one with a significant population from which to draw participants. In the Spring of 2006, the researcher contacted by telephone or email the principal of each of the nine high schools, requesting permission to distribute a questionnaire about metacognition and writing, which required three yes/no responses (Appendix A). The initial contact with eight of the nine principals resulted in one not responding, another denying access, and six agreeing to distribute questionnaires. The ninth principal, in subsequent conversation with the researcher, granted her complete access. Volunteers from this school were recruited via email. The remaining pool of six high schools that were sent the questionnaires for distribution to teachers resulted in five principals returning completed questionnaires and a sixth school not responding, which was confirmed with a follow-up telephone inquiry.

As a result of the response to the initial questionnaire to determine whether the researcher would have participants for the study, 28 volunteers emerged. They indicated on the questionnaires that their subject areas were the following: art (1), English (9), history (2), mathematics (4), physical education and health (2), religion (4), science (3), science and social studies (1), social studies and drama (1), and technology (1).

For the purposes of this research, the subject areas of English, history, mathematics, religion, and science were studied; therefore, the subject areas of art, drama, physical education, and health were not included. This decreased the number of volunteer participants to 24 from the five high schools which granted access to the researcher. The remaining 24 teachers who indicated that they would be willing to be interviewed for this study consisted of nine English teachers, three history teachers, four mathematics teachers, four religion teachers, and five science teachers.

In September of 2006, 10 participants, two from each school, were chosen at random, depending on whether they indicated on the questionnaire that they taught a single subject or more than one subject. For purposes of simplification, those teaching more than one subject were eliminated from the pool of volunteer participants. The participants remaining and the schools at which they taught were assigned to the five subject areas to be studied. The preliminary subject area distribution is illustrated in Figure 2.

In July of 2007, the Institutional Review Board for the Protection of Human Subjects (IRBPHS) at the University of San Francisco granted approval for this study (Appendix B). Prior to that, in April of 2007, the Superintendent of Schools for the Northern California diocese, targeted for the study, granted the researcher's request to

interview diocesan secondary teachers (Appendix C). In December of 2007, the prospective interviewees, described above in the section on population, were invited by email or telephone to participate in the study.

School A		History			Science
School B	English			Religion	
School C	English		Mathematics		
School D			Mathematics	Religion	
School E		History			Science

Figure 2. Preliminary subject area distribution by high schools.

Although the preliminary research design anticipated 10 participants from five schools, the researcher encountered challenges when she sought to schedule interviews. First, several of the original volunteers were no longer at the high schools from which they were recruited. Another volunteer withdrew from the study. In addition, two others, though willing to participate, encountered scheduling difficulties, rendering them unable to be interviewed in the final days of the Spring 2008 semester.

Because the pool of participants had decreased significantly, the researcher resolved to conduct her investigation with eight volunteers from only three schools in the participant pool because they were available for interviews. Five of these participants were teachers at the school where the researcher is employed; the remaining three were teachers at two other Catholic high schools. Figure 3 presents an overview of the final participants, their schools, subject areas, gender, and interview dates.

Each of these participants was provided with an informed consent form (Appendix D) and the Bill of Rights for experimental subjects (Appendix E). In addition,

each interviewee, except Participant 8, completed a confidential questionnaire about his

Participants	Schools	Subject Areas	Gender	Date of Interview
Participant 1	School A	History	male	January 18, 2008
Participant 2	School A	Religion	male	February 8, 2008
Participant 3	School A	English	female	February 12, 2008
Participant 4	School C	History	male	February 13, 2008
Participant 5	School B	History	male	May 19, 2008
Participant 6	School A	Science	male	May 27, 2008
Participant 7	School A	Mathematics	female	June 1, 2008
Participant 8	School B	Science	female	June 5, 2008

Figure 3. Final participants, their schools, subject areas, gender, and interview dates.

or her educational background and teaching experience (Appendix F). Participant eight did not include the questionnaire in the packet of documents returned to the researcher.

Figure 4 specifies the educational background, credentials, and teaching experience of Participants 1-7.

Interviews

Because the interviewer participated, albeit with detachment, in her own study, she and the three-question protocol delineated below were the research's instruments. She prepared herself for the interviews by reflecting upon Kvale's (1996) discussion of

the 10 qualities necessary for the equipped interviewer. These criteria were that the researcher conducting the interview be knowledgeable, structuring, clear, gentle,

Participant	Education	Credential	Experience
Participant 1	B.A. Political Science	CA Teaching Credential	36 years
Participant 2	B.A. Religious Studies, M.A. Pastoral Theology		25 years
Participant 3	B.A. English, M.A. Theology	CA Single Subject Credential: CLAD Emphasis	15 years
Participant 4	not indicated	not indicated	10
Participant 5	B. A., J. D.	CA Credential Social Studies & English	16 years
Participant 6	M.S. Integrative Biology, M.A. Education Leadership	CA Credential in Biological Science	7 years
Participant 7	B.S. Economics & International Business	Initial stages of a CA Credential Program	3 years

Figure 4. Participants' educational backgrounds, credentials, and teaching experience.

sensitive, open, steering, critical, remembering, and interpreting. Kvale (1996) pointed out, furthermore, that “current research interviews are often too long and filled with idle chatter. If one knows what to ask for, why one is asking, and how to ask, one can conduct short interviews rich in meaning” (p. 131).

The three research questions driving this study were designed to investigate how teachers of English, history, mathematics, religion, and science in Catholic secondary schools in a diocese in Northern California used writing as a tool to foster their

students' metacognitive skill development. These questions were the following:

1. To what extent do teachers in Catholic secondary schools understand the concept of metacognition?
2. To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students?
3. To what extent do teachers in Catholic secondary schools encounter obstacles that prevent them from fostering, through writing, the metacognitive skill development of their students?

Initially, seven interview questions were formulated to elicit data in respect to the three essential questions listed above. After the first interview, however, the researcher added two more questions: "Elaborate on the thinking skills you emphasize in your teaching," and "Elaborate on your understanding of metacognition and whether you address the development of this awareness in your students." These questions were added because the researcher found that she needed more explicit prompts to draw out participant commentary on critical thinking, particularly metacognition.

In addition, after the third interview, the researcher added a tenth question: "Explain your understanding of Catholic education." This question was added because the researcher, once again, found that she needed a concrete prompt to protract participants' views on Catholic schooling, which was a paramount component of her study. These three questions were incorporated into the initial series of seven questions to garner explicit answers in respect to the term *metacognition* and in respect to participants' views of Catholic education. They became interview questions two, three, and ten, respectively.

Table 2

The Correlation between Interview Questions and Research Questions

Interview Question	Research Question (RQ)
1. Explain how you teach.	RQ 2: To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students?
2. Elaborate on the thinking skills you emphasize in your teaching.	RQ 3: To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students?
3. Elaborate on your understanding of metacognition and whether you address the development of this awareness in your students.	RQ 1: To what extent do teachers in Catholic secondary schools understand the concept of metacognition?
4. Describe the types of writing you have your students do and how often you require them to write.	RQ 2: To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students?
5. Explain what you have your students do to complete a written assignment.	RQ 2: To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students?

Table 2 (*continued*).

Interview Question	Research Question (RQ)
6. Explain what you look for in your students' writing and how you assess it.	RQ 2: To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students?
7. Explain the obstacles you encounter when you require your students to write.	RQ 3: To what extent do teachers in Catholic secondary schools encounter obstacles that prevent them from fostering, through writing, the metacognitive skill development of their students?
8. Describe your department's writing expectations.	RQ 2: To what extent do teachers in Catholic secondary schools use writing a tool to foster the metacognitive skill development of their students?
9. Elaborate on your high school community's view of writing.	RQ 2: To what extent do teachers in Catholic secondary schools use writing a tool to foster the metacognitive skill development of their students?
10. Explain your understanding of Catholic education.	RQ 1: To what extent do teachers in Catholic secondary schools understand the concept of metacognition?

The interview protocol for the remaining five participants consisted of 10 questions. The additional questions inserted were #2 “Elaborate on the thinking skills you emphasize in your teaching”; #3 “Elaborate on your understanding of metacognition and whether you address the development of this awareness in your students”; and #10 “Explain your understanding of Catholic education.” Table 2, formulated above, lists the ten interview questions and the research questions to which they correlate.

Validity and Reliability

For purposes of validity, the researcher adhered strictly to the interview protocol. She asked each question as it was structured in the sequence and interjected comments only when a participant asked for clarification. In addition, to determine the study’s reliability, the researcher sent copies of their transcripts to the eight participants, and, in an accompanying letter, requested them to revise as they felt necessary (Appendix G). The researcher found that participants’ revisions did not alter the fundamental nature of their answers. In point of fact, participants one, four, six, and seven, made no changes while participants two, three, five, and eight made minimal changes to their transcripts’ wording or explained subject-matter terminology for the researcher’s clarification. The fact that the interviewees did not alter their answers to a significant degree has strengthened the reliability of the study.

Data Collection

The data was collected in two ways: First, the interviewees were asked to complete a confidential, demographics questionnaire, on which they delineated their educational background and teaching experience (Appendix F). The interviewees’ confidential, completed questionnaires have been stored in a locked filing cabinet

throughout the study and will remain there for five years after the completion of the dissertation, at which time they will be destroyed. Second, the interviews, each lasting approximately 30 minutes, were recorded digitally.

The researcher planned originally to use the voice recognition software program *Dragon NaturallySpeaking 9* to transcribe the interviews. This, however, proved problematic for her because of the time she was spending trying to learn how to use the software and then attempting to train it to recognize the different voices of the interviewees. As a result, she made the decision to transcribe manually the eight interviews. This proved to be a valuable decision because the researcher found that transcribing enabled her to better interact with the content of the interviewees' answers. She was able to listen to the questions and answers as she transcribed the text and saw it evolve, thereby using three integrated modalities: auditory, visual, and tactile. These transcripts yielded 68 pages of data, which have been assembled in a binder entitled *Interviews*.

Data Analysis

The purpose of collecting data for this investigation was to assess to what extent teachers in Catholic secondary schools understood the concept of metacognition and to what degree they provided opportunities for their students to develop, through writing, their own metacognitive thinking skills. The researcher utilized a three-step process for this assessment. Initially, each of the eight participants in this study was asked from seven to ten, open-ended questions in an approximate 30-minute interview. Their answers were recorded digitally and transcribed manually. Then, to solicit further clarification, each participant was forwarded the transcription of his or her interview for

review and revision. When these were returned to the interviewer, she found that the interviewees had not revised or corrected their transcripts to a significant extent. The researcher then analyzed the data in the transcripts to elicit patterns and to establish categories.

The interview heuristic yielded a minimum of eight categories from the data: (1) metacognitive awareness, (2) extent of use of writing, (3) teaching strategies, (4) frequency of writing, (5) written products, (6) writing assessment, (7) obstacles to writing, and (8) the philosophy of Catholic school education.

Qualifications of the Researcher

The researcher, a product of Catholic education, graduated from a Catholic grammar school, high school, college, and university. Over the course of 32 years, she has served in seven Catholic schools in dioceses in Northern California. Prior to her experience in Catholic schools, she was employed for seven years in two public school systems. For five years, she taught high school English and Spanish, grades 9-12, in a public school in rural Wisconsin. For two years she was employed by the West Australia Department of Education as an English teacher, assigned first to an urban senior high school in Perth and then to Tom Price District High School in the remote Pilbara region.

Her service in Catholic schools began in the late 1970s in San Francisco's Mission District, where for five years she taught seventh and eighth grade language arts at an intermediate school and then seven years at an all-girls high school, which was subsequently closed. While a student in the Catholic Educational Leadership Program at the University of San Francisco, the researcher has been either a full-time, Catholic school teacher or administrator. Thus, she has been and continues to be an engaged and

passionate participant in her own study because she has had the opportunity to apply current pedagogical theory to her daily instructional and administrative practices. As a result, she has joined the ranks of those who teach and research simultaneously.

Ray (1992) explained that the term teacher research was coined in the 1960s by Lawrence Stenhouse. A British teacher, Stenhouse originated the term “to describe classroom-based inquiry involving both schoolteachers and university researchers. The American version sometimes involves collaboration between teachers and researchers, but more often it entails work initiated and conducted by teachers alone” (p. 173). Berlin (1990) projected that the teacher researcher idea would be a new model for the teaching profession.

The teacher researcher of this investigation believes that the construction of knowledge is a fluid, evolutionary process that thrives best in an environment of collegiality. Because of this philosophical stance and because she is a full-time English teacher, she decided to do a qualitative study to investigate how her colleagues in Catholic high schools used writing to foster their students’ metacognitive thinking skills.

This investigator’s experience as a writing teacher began in 1970 in a rural high school in the Midwestern United States. Her ninth grade English students used a textbook entitled *The Lively Art of Writing* (Payne, 1969), which thoroughly delineated the steps in the development of the five-paragraph essay. Needless to say, this researcher floundered in her use of this writing textbook because, as a college student who earned a Bachelor of Arts and a teaching credential in English and Spanish, she had not been taught to teach writing. Writing instruction, in the 1970s, was intuitive and linear with students being given a composition of some sort to write and the date it was due.

Thirty-nine years later, still an English teacher, this investigator, albeit with more experience and training, is accountable for ensuring that her high school English students become proficient in writing the five-paragraph, academic essay. This requirement leaves little, if any time, for reflexive writing. Moreover, the new SAT writing component has increased the need to spend class time preparing students to write timed essays in response to prompts and to reviewing or teaching writing mechanics. Although she believes that students need experience in all forms of writing, this teacher researcher understands the value of high school students knowing how to write a five-paragraph essay. The five-paragraph essay formula (introduction, body, and conclusion) provides a template for students when they are called upon to compose in timed situations and in various subject areas that require expository writing products.

Throughout the last 19 years (1990-2009), however, this teacher researcher has utilized the writing process method, which requires extensive class time for prewriting, drafting, and peer and teacher feedback. The process method, moreover, necessitates the need for the writing teacher to possess knowledge of the rudiments of composition pedagogy and theory. For this reason, the researcher returned to school to study writing pedagogy. In 1996, she earned a Master of Arts in English in Teaching Composition from San Francisco State University.

This investigator's growth from a beginning teacher of writing to an experienced one involved her for over a decade in the formal study of composition literature, research, and pedagogy. These studies emphasized the importance of curricular and instructional design that took into account students' cognitive development. Consequently, she developed her own pedagogical creed, based, in part, on the social constructivist theory

of Lev Vygotsky, whose Theory of the Zone of Proximal Development has provided the conceptual framework for this study.

CHAPTER FOUR

FINDINGS

Introduction

The major purpose of this study was to discover how teachers used writing as a tool to instill in their students a degree of metacognitive awareness. Marzano et al. (1988) defined metacognition as being aware of one's own thought process while performing a specific task and then using this awareness to control what one is doing.

This two-tiered instructional model led the researcher to develop a study to investigate to what extent secondary teachers had interconnected writing and metacognitive instruction and learning. Three research questions guided the study: (1) To what extent do teachers in Catholic secondary schools understand the concept of metacognition? (2) To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students? (3) To what extent do teachers in Catholic secondary schools encounter obstacles that prevent them from fostering, through writing, the metacognitive skill development of their students? In the next section, the findings related to each of these questions will be delineated.

Research Question One

Three of the interview questions related to Research Question One: To what extent do teachers in Catholic secondary schools understand the concept of metacognition? These interview questions are listed in Table 3 in the order in which they were asked.

Interview Question Two

Analysis of the data extrapolated through interview question two, which asked

participants to elaborate on the thinking skills they emphasized in their teaching,

Table 3

Interview Questions Relating to Research Question One

Question Number	Question
Interview Question Two	Elaborate on the thinking skills you emphasize in your teaching.
Interview Question Three	Elaborate on your understanding of metacognition and whether you address the development of this awareness in your students.
Interview Question Ten	Explain your understanding of Catholic education.

revealed two themes significant to this study. These were the use of guided-learning strategies and the emphasis on facilitating students' growth in recognizing and analyzing diverse points of view. The first theme brought to light a guided-learning strategy.

Participants four and six explained that they guided their students through a process of learning which ultimately led them to make connections on their own. Participant four stated, “. . . if you train them, if you help them make those connections [application of knowledge to their own experiences], then they will start to build those connections themselves. That's when you can do something with it [factual knowledge], when they start bringing up the things [applications] themselves” (*Interviews*, 2008, p. 33).

Participant six elaborated upon this same strategy: “In the beginning of the semester, I try to give them examples of information we might need and put it together for the big picture. Then I try to wean myself out of that picture of being the provider of how to put it together” (p. 53).

The second theme which emerged from responses to interview question two revealed that participants three and five challenged their students to analyze diverse points of view. Participant three asserted that presenting a situation or a quotation and then encouraging students to provide dissimilar responses to the idea develops their ability to recognize points of view other than their own. As participant three pointed out,

. . . very frequently with literature kids want to say there's more than one way to interpret something, and so many of their interpretations lack any evidence. You need to rein them in and force them to focus on the text. . . . You have to know what to rein in and at what point, to control them but also let them explore a vast array of possibilities. (*Interviews*, 2008, pp. 13-14)

Accordingly, participant five expected students to explore and support varied points of view. He explained,

We learn how to debate . . . to summarize an opponent's position, attack it, and then support their position with historical evidence. . . . We learn how to evaluate thinking, so they can tell the good from the bad with others and with themselves, hopefully. (p. 45)

Thus, the idea of challenging students to think beyond their current levels of understanding was a common theme in the interview responses. Participant two, for example, utilized a questioning technique, which encouraged freshman students to think more deeply than they were accustomed to doing. Participant two explained,

. . . what I am usually after is the synthesis, evaluation . . . higher order thinking skills. . . . you do that [foster your students' critical thinking skills] through your classroom activities, and you do it also through your testing style and the kinds of questions you ask. (p. 9)

Participant four challenged students in a similar manner, stating, "With the thinking skills we try to get, especially early on . . . beyond the facts. We interpret people's actions and question why they acted a certain way" (*Interviews*, 2008, p. 32).

To this end, participant seven used the investigation method, explaining that

With the investigation. . . there's definitely a lot of problem-solving. They need to make conclusions, based on what they're doing, and that's definitely a tough skill for kids. . . Drawing their own conclusions, extrapolating; it's struggling. I'm kind of encouraging of the struggle . . . I think that gets it through to them more than just me handing them a formula. (p. 61)

Participant eight reflected participant seven's point of view on advancing students' critical thinking skills, explaining, "We want them to be able to hypothesize . . . to be able to analyze, to draw conclusions" (p. 68).

The responses to interview question two, cited above, yielded two themes: (1) the use of guided-learning strategies, which sought to enable students to function independently and analytically; and (2) the emphasis on facilitating students' growth in recognizing and analyzing diverse points of view. All participants sought to challenge their students to step out of their own comfort levels. They endeavored to guide their students beyond their basic skill development and their knowledge of factual subject matter to higher levels of thinking about content, context, and their applications.

Interview Question Three

Interview question three, which asked participants to elaborate on their understanding of metacognition and whether they addressed the development of this awareness in their students, generated two strands: Either the participants were not familiar with the term metacognition and asked the researcher to define the word, or they were familiar with the term and incorporated the development of this skill in their classroom practices.

Participants six and seven were unfamiliar with the term metacognition and asked the interviewer for clarification. Participant six responded, "Tough question, metacognition; I am not real clear on the concept of metacognition. I don't know; I can't

think of anything off the top of my head here” (*Interviews*, 2008, p. 54). At this point, the interviewer defined the term metacognition as “thinking about thinking, thinking about your actual process” (p. 54). The respondent then replied, “I do teach it in respect to the question ‘What’s the process here?’” (p. 54).

Accordingly, participant seven voiced unfamiliarity with the term, asking, “. . . could you define metacognition for me?” (*Interviews*, 2008, p. 62). The interviewer responded, “It’s knowing how we know, knowing what the process is that we used to get to a certain point It’s thinking about thinking, your own thinking” (p. 62).

Subsequently, participant seven, made reference to classroom practices which fell under the heading of metacognition:

I guess they do some of that with the conclusions of the investigations. At the end of the conclusion, I generally have them write what they did, and I think that would fall into it: how I got here, what mistakes I made, why I got to this conclusion. (p. 62)

Although participants six and seven did not recognize the term metacognition, they did indicate that they engaged their students in reflective activities which replicated metacognitive engagement.

On the other hand, participants four, five, and eight were familiar with the term metacognition. In fact, participants five and eight taught their students metacognitive strategies. Participant four’s approach to teaching metacognition resulted from understanding that each teacher and student has a particular learning style or styles.

Participant four offered this explanation:

Metacognition is knowing how I learn, knowing how I know. . . . for me early on I learned. . . . I am very visual; I have to write things down. . . . as a teacher, because I have to write things down in order to remember them board work is a big deal in my class. . . . I introduced this [metacognition] in the beginning of the first semester. . . . I said to the kids “. . . at the end of this class, I am going to

ask you what you learned”. . . . In trying to help kids know what works for them, I think that is the beginning stages of . . . metacognition, knowing how I know what I know and for them to be advocates for themselves. . . . I have taught kids “if you figure out what works for you, do it.” . . . That’s how I see on their level what metacognition is. (*Interviews*, 2008, pp. 34-35)

Participants five and eight indicated that they utilized strategic methods for developing their students’ metacognitive awareness. One strategy which they had in common required students to examine their test errors to discover patterns. The purpose of this exercise was to prevent students from making similar mistakes on future tests.

Participant five explained a procedure used to assist students in error analysis:

I have them go back through their test, after we have analyzed it and talked about all the questions, and they have to say why their answer was wrong, why the right answer was the right answer, and, at the end in a narrative, they have to summarize the trends they saw in their wrong answers. . . . They can note that trend when we go through the metacognition, so they have to write up their results, their summaries of their own thinking, picking out the trends so that they hopefully don’t make those mistakes again, and then they have to put into a paragraph what they commit to do for the next test. . . . whatever they figure out is their weakness they have to commit to doing something differently for the next test to get better at it. (*Interviews*, 2008, pp. 45-46)

Participant eight followed a similar procedure to promote students’ metacognitive skills:

What we do is we have them take their test when they get it back and metacognate it. We have them answer two questions about each of their wrong answers: “Why did you choose the one you chose? Why is the right answer the best answer?” They then write two paragraphs: the first paragraph “What trend did you see in your mistakes?” and then the second paragraph “What can you do to prevent making the same mistakes again?”

Then I have them write . . . what they were going to address with this test and then make sure they do it. If one of their problems was . . . they don’t read the question correctly. . . . I suggest they get a highlighter out and highlight the important parts of the question, rewrite the question, come up and ask me if they have rewritten it correctly So, I give them a lot of prompting. (pp. 68-69)

The responses of participants four, five, and eight provided evidence that teachers in Catholic secondary schools in Northern California afforded opportunities to

engage their students in metacognitive practices. They indicated, furthermore, that metacognitive skill development was an essential component of their curricula and of their students' learning experiences. To this end, they had their students revisit material they had studied for the purposes of recall, analysis, and application.

Participant four encouraged students to summarize what they had learned in a particular lesson and endeavored to help them discover and utilize their unique learning styles. Participants five and eight indicated that they required students to analyze their corrected tests in order to discover trends in their wrong answers. After identifying trends, they wrote a paragraph or paragraphs explaining how they planned to avoid these specific types of error in the next test. Moreover, participants five and eight presented anecdotal evidence that writing was, indeed, being used as a tool to develop high school students' metacognitive skills. In addition, while participants six and seven were unfamiliar with the term metacognition, they demonstrated an intuitive understanding of the importance of incorporating opportunities for their students to review the cognitive processes that they employed to complete a learning task.

Interview Question Ten

The final interview question, question ten, which related to the first research question on metacognition, asked respondents to explain their understanding of Catholic education. Interview question ten was included in reference to metacognition because Catholic education advocates and promotes reflective practices. Seven participants, two through eight, were asked this question. After her interview with the first participant, the researcher realized a need for an explicit interview question about Catholic schooling. All of the seven participants, two through eight, who answered this question, responded

unequivocally that Catholic education places paramount importance on educating the whole person. Thus, respondents indicated that each student was a valuable asset within the Catholic school community. Participant six summarized this belief: “There is an emphasis on the whole student, educating the whole student, spiritually, academically, morally, and socially. Academics is important, but just as important is their [students’] moral and ethic education and spiritual education” (*Interviews*, 2008, pp. 59-60).

Other respondents provided similar insights. Participant two cited, as a model, the document *To Teach as Jesus Did*, stating that “. . . the hallmark of a good Catholic school should be the three pillars: community (koinonia), service, (diakonia), and religious instruction (didache)” (*Interviews*, 2008, p. 12). In addition, participant three addressed the historical role of Catholic education in the United States, asserting that its traditional role was to make citizens literate “for their participation in the church, for their roles of citizens of the country” (p. 21). Participant three added that “. . . the ability to read, the ability to write were part of that idea of Catholic education as well as the moral development and spiritual development of the child” (p. 21).

The responses of the seven participants who were asked question ten about their understanding of Catholic schooling revealed that all understand and have observed that Catholic schools seek to develop the whole child. Catholic education, as the interviewees articulated, stressed values. Interestingly, none of the respondents accentuated academic success as a Catholic school priority. Rather, they viewed academic growth as one aspect of educating the whole child. Other aspects were the development of community, commitment to service, and religious education and observance.

Participants two, three, and eight alluded, nevertheless, to the fact that the system of Catholic education has its imperfections although they did not elaborate on what these were, nor did they appear to find them insurmountable. The participants' sensitivity to their roles as Catholic school educators was summed up by participant eight who explained that

For the most part, I think they have it right [Catholic schools]. . . . They do value each person, and they understand the importance of community service and developing a well-rounded individual when they leave here The kids are made to feel it's safe here, and it's a privilege to be here. Most of them appreciate how lucky they are because they are valued. (*Interviews*, 2008, pp. 76-77)

The next section describes and analyzes participants' responses to the second research question, which focused on how teachers used writing to develop their students' metacognitive skills.

Research Question Two

Research Question Two asked the following question: To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students? The interview questions are listed in Table 4 in the order in which they were asked.

Interview Question One

Interview question one which asked participants to explain how they teach elicited three pedagogical stances: These were (1) teachers' connections to students, (2) student and teacher learning styles, and (3) the development of students' critical thinking skills. Participants one and two stressed the importance of developing a positive relationship with their students. Participant one stated, "The most important thing for me about teaching is my connection to my students" (*Interviews*, 2008, p. 1). Participant two

reiterated this idea, commenting, “I teach from the heart. Krzysewski’s book, *Leading with the Heart*, has been helpful in my coaching. What he means by that, at least in part, is to show your players or your students that you love and care for them” (p. 8).

Participants, two, three, four, five, six, and eight indicated that they used various instructional approaches to accommodate students’ diverse learning styles. Participants two and four, moreover, revealed that they used the methods of their former teachers as Table 4

Interview Questions Relating to Research Question Two

Question Number	Question
Interview question one	Explain how you teach.
Interview question four	Describe the types of writing you have your students do and how often you require them to write.
Interview question five	Explain what you have your students do to complete a written assignment.
Interview question six	Explain what you look for in your students’ writing and how you assess it.
Interview question eight	Describe your department’s writing expectations.
Interview question nine	Elaborate on your high school community’s view of writing.

models. Participant two stated, “In some ways I teach the way I was taught. I take ideas from the best high school, college, and graduate teachers that I had and try to incorporate

their passion, their insights into my own style” (*Interviews*, 2008, p. 8). Participant four indicated a similar approach:

I try to model myself after one of my professors who created outlines on the board. He wrote on the board as he spoke, which helps to ingrain information in students’ minds. . . . Basically, I teach how I learned best as a student and pace learning, adjust learning to the kinds of learners I have. (p. 31)

Participants three, four, five, six, and eight stated that they planned lessons with students’ learning styles in mind. Participant three explained,

I use a wide variety of instructional approaches in my classroom, a lot of writing, quizzes, tests, and group work. I’m kinesthetic, so typically I try to find ways of having students doing things in class. I don’t frequently lecture. Lectures are probably a minimum of 15 to 20 minutes in class. (*Interviews*, 2008, p. 13)

Participant four stated, “I try to throw in different modalities of learning. I try to have much discussion and have them think-pair-share with those next to them” (p. 32). To this end, participant five added,

I use Howard Gardner’s learning styles, so I vary my curriculum so that the verbal linguistic learners get some lecture and some reading, and the kinesthetic learners get some simulations, mathematical analytical learners get some of the thinking stuff that we do, essay writing, debates. . . . (p. 44)

Accordingly, participant six reiterated, “I try to teach my subject in as many modalities as possible: verbal lectures, visual power points, tactile with laboratory materials . . .” (p. 53). Participant eight stated, in addition, that

I use a little bit of everything. I tend to have 15-20 minutes of instruction, lecture-discussion format, and then we do some kind of activity or a lab or a movie. I try to bring in all different modes of presentation because I know they get bored easily, so I try to make it as wide a variety as I possibly can. (p. 68)

The last theme to emerge for interview question one, which asked participants to explain their instructional strategies, revealed an emphasis on developing students’ critical thinking skills. Participants two, four, five, six, and seven articulated that they

used questioning, investigating, and reasoning techniques to help their students learn at various levels. For example, participants two and four indicated that they posed questions for their students to analyze. Participant two explained, “What I think is really important in teaching is to ask good questions, to pique the interests of the students, whatever the topic is and to keep them on point in terms of the subject’s objectives” (*Interviews*, 2008, p. 8). Participant four, who employed a similar methodology, stated, “I engage my students in dialogue. I draw answers out of the class. . . . it’s asking questions about what happened, what do they think about what happened. I draw answers from them . . .” (p. 32).

Participant five, moreover, described the use of a variety of critical thinking instructional techniques:

I try to teach at several levels. On one level I teach content, but I also try to teach thinking skills, which involves things like the standards of reasoning, the elements of thought, things that you do when you do think [metacognition], logical fallacies, different types of reasoning like comparison reasoning, reasoning by generalization, cause and effect reasoning . . . (*Interviews*, 2008, p. 44)

Participant seven, on the other hand, used primarily one instructional technique, the investigation approach, to engage students in their own discovery of a particular concept:

Our curriculum is based on an investigation approach. For example, they do a project where they would be seeing things going at a different angle. When dropping a penny off of a ruler, they would see that it would go faster at different slopes, and that’s how they would discover slope. (p. 61)

In summation, the response of participant seven cited above and other responses to interview question one which asked participants to explain their teaching methodologies yielded three themes: theme one, participants desired to connect positively with their students; theme two, participants used a multiple-intelligence approach to learning and

instruction; and theme three, participants sought to develop their students' critical thinking skills.

Interview Question Four

Interview question four asked participants to elaborate on the types of writing they assigned and the frequency of these writing assignments. Participants' responses to this question generated two distinct categories: expository writing and imaginative writing. The frequency of these assignments varied, depending on their purpose and depth. Thus, the occurrence of assigned writing ranged from once a week to once a year.

The expository writing which participants assigned consisted of formal paragraphs, summaries, laboratory reports, essays, research reports, abstracts, and reflections. Participant one stated, "I used to do formal essays with the freshmen, but I found that was not necessarily helpful. I do formal paragraphs, which is a lot less complicated. . . . With my juniors, I do one important essay per semester. . ." (*Interviews*, 2008, p. 2). Participants three, four, and five, moreover, indicated that they required their students to write within time constraints. Participant three stated,

I had my juniors . . . do some timed writings to an SAT prompt. I just want to get a baseline on what their writing is and give them credit, for what I would call, the effort they put forth into writing that first sample. (pp. 14-15)

Accordingly, participants four and five assigned timed essays. Participant four explained,

I give essay tests. . . . For instance, for tomorrow's test, there are three big essay questions. . . . Since it is only a 45-minute period, they will only write on two, chosen randomly. . . . They need to be able to formulate a good essay in the 45-minute period, so they have to write quickly. . . . These tests work out to one every couple of weeks. (pp. 35-36)

Participant five elaborated, "Once I teach the model we want them to use, we write about every three weeks under time pressure, with topics they have never seen before, so they

get used to it in class” (p. 46). Participant seven, in addition, included an essay question on quizzes and tests but with a different objective: “I just like them to explain what they’re doing. They’re going to get it so much more if they have to explain it [mathematical problem]” (p. 62).

Other types of expository writing assignments, which participants required their students to complete, included reports, research papers, and abstracts. Participant six required five lab reports per semester, elaborating,

We do a lot of technical writing in terms of laboratory work. They have to do laboratory write-ups, to write conclusions to a lab. They’re writing basically their methodologies, their materials, and they’re kind of synthesizing that information into the conclusion that they found in their labs. Some of it’s done in bullet points, but most of it’s done in paragraph form. (*Interviews*, 2008, p. 54-55)

Participant eight required comparable laboratory reports, in conjunction with a scientific abstract:

About mid semester, they write a scientific abstract, which is really difficult for them. . . . I give them very clear instructions how to do it with an example on their hand-out. Then we take the lab that we’ve done, like the enzyme lab with a lot of data. We go through the abstract sentence by sentence. After that I have them do the whole lab report, and they can cut and paste their abstract in it. That’s a lot easier; it’s the abstract that’s hard. They had to rewrite it three times. (p. 71)

The research paper was another expository writing assignment in which participants engaged their students. Participant four described the teaching strategies used to facilitate students’ completion of this project.

For the major research paper, I take them step-by-step. Everyone writes their topic ideas on the board. Then we start paring down their thesis ideas. I teach them about note cards and take them through the whole process. I ask them about their note card experience, about what it took to get them to that point. This is metacognition because they have to ask themselves how they got to that point. They recognize that they have used a formula. (*Interviews*, 2008, pp. 36-38)

Participant six's students wrote a research paper in a similar vein: "We do research writing once per semester, which is researching and writing an informative essay on a topic chosen for them. The topic has to be covered thoroughly in about two pages" (*Interviews*, 2008, pp. 54-55). Participant five, in addition, reported on a project students were required to complete once a year, explaining, "They do read the book *John Adams* by David McCullough over the summer, and they have to write a bigger essay once a year on that" (p. 46). Participant two, on the other hand, gave evidence of an integrated approach to writing, which invited students to reflect, analyze, and interpret in response to specific prompts:

My students write a least once a week. It could be reflective writings, which is journaling or responding to either a reading or a video, which is kind of a gut-level response. Another would be analysis writing. They have to incorporate concepts from the text or concepts that we've been talking about in class, usually in reference to a reading or a video. Another is interpretation. I ask them to put the key points from a reading into their own words, what the author is saying in their own words. (p. 9)

Imaginative writing was the second category to emerge from participants' responses to interview question four about the types and frequency of writing they assigned. Participants three, five, seven, and eight indicated that they required their students to interweave creative writing with factual knowledge. Participant three, for example, explained,

I have them do some creative writing in different ways. The creative writing is an emotional, empathic, imaginative approach to a context. For instance, my freshmen read *Great Expectations*. I asked them to read an account from the *Industrial Revolution Sourcebook*, an account of what life was like in a woolen mill. Then I have them write an imaginative account that takes their knowledge of woolen mills into consideration so that somehow before they begin to read a work of literature, they put themselves in a situation where they are sympathetic to the characters in the novel. (*Interviews*, 2008, p. 15)

Participant five related, “Once a semester we write what I call historical fiction. We learn about the Battle of Antitam, for example, and then they have to put themselves at Antitam and bring it alive” (*Interviews*, 2008, p. 47). Participant seven described graph stories students wrote: “They drew a graph with anything on the axis. For example, when you walk home, you go up hill, then down hill. They graph it, and then I have them write a little story to go along with it” (p. 63). Participant eight, moreover, elaborated upon two imaginative writing assignments students are required to complete, letter from an atom and postcards from the cell:

I have them write a letter from an atom to . . . anyone they want. . . . This lets the kids who are creative go; now they can shine. They have to pick an element and research it. I tell them the categories to look for, and then they have to write a letter about it, and they have to include both fact and fiction.

They have to include all the facts they find about the element, and then they can add things like what it feels like, what it smells like. . . . They can . . . embellish it. I have them highlight the factual part before they hand it in. I want them to be able to see that they have equal amounts and that they don’t plunk all the factual stuff in the first paragraph and all the rest is creative writing.

For the cell unit. . . . I have them do postcards from the cell. They take six organelles, parts of the cell like the nucleus and cytoplasm. On one side of a 4 x 6 card I have them draw the nucleus and label the parts, which we have gone over in class. Again I want them to mix up fact and fiction. They have to highlight the factual part. . . . They do six of these. (pp. 70-71)

In conclusion, the interviewees’ responses to interview question four elicited evidence that illustrated that all of the eight participants assigned their students various forms of expository writing, one of the two categories extrapolated from the data. These tasks varied in frequency: for example, once a week, every three weeks, every semester, or even once a year. In addition, participants three, five, seven, and nine provided evidence that the imaginative writing they assigned was intended to reinforce factual knowledge as well as to personalize and apply it, using students’ voices and unique

points of view. As a result, although appearing to be less formulaic than the expository writing assignments, the imaginative writing demanded significant rigor and subject-matter accuracy.

Interview Question Five

Interview question five asked participants to elaborate upon what they required their students to do to complete a written assignment. Analysis of the interview data revealed three strands: formula, guided learning, and process. Participants one, three, four, five, six, and eight guided their students through a process, which culminated in a written product. Participant one articulated,

I do it incrementally. The whole process of the essay really starts with a thesis and then goes to a final draft. It takes about three weeks. By the time they are writing the rough draft it is kind of written already. (*Interviews*, 2008, p. 2-3)

Participant three emphasized the importance of prewriting and collaboration strategies to help students refine their skill in formatting a literary analysis essay:

I make sure my freshmen have some kind of prewriting activity: a brainstorm or a group brainstorm. They put posters on the wall with some ideas. . . . I have them write a group . . . paragraph essay in the literary analysis style. With me using the LCD projector, we wrote this little literary analysis paragraph. Then they got a copy, and they had to color code everything that was in that paragraph. . . . After we did a couple of these in class . . . I had them write a group essay for the first time, a multi-paragraph essay because there are some kids who get it right off, and I grouped them with those who weren't getting the formula. Everybody had to write out the entire essay so that those kids who weren't quite getting the formula had to mirror the process that the other kids go through so that they were carried along and had actually written a full literary analysis. (p. 15-16)

Participant four utilized a guided writing process method in which questions and discussion played important roles in stimulating recall and prompting essay development:

I have them start by reading their text and writing, and then we discuss it in class. From there we build onto the essay I have them come up with an outline, or I might ask them to show me . . . their notes. (p. 38)

Participant five employed a writing process method to teach students how to develop substantive debate arguments:

For the debates, done once a semester, they research a big topic and put their research into a binder. They have to develop at least 10 arguments supported by historical evidence. They include all their arguments and their evidence and use the binders during the debates. I structure the debates because, if you don't structure them, students are just yelling at each other. They think it's fun, but they are not learning anything. For the debates, I teach them the different steps in the process. (*Interviews*, 2008, p. 48)

Participant six, with assistance from the school librarian, guided students through a research process:

. . . we went to the library to do a research project with the librarian. She went over how to access the database and what was available to them. I did use the laptop carts a couple times this year, so they could do research in class, which was really helpful. They did their research, and I went around helping them. We looked at sources to see what were good and what were bad. It is nice to be able to do it [the research] in class. (*Interviews*, 2008, p. 56)

Participant eight guided students through a research process, which involved the use of classroom computers:

I have them design a human for a specific condition, like global warming or a specific job like a fireman or secret agent. They do a lot of research, and I give them worksheets for the research. I take them to the computer lab twice to do research to kind of get them in the right direction. Then they have to come up with fixes, and they have to get down to the cellular, enzyme, hormonal level. This is real critical thinking. Then they have to build it. They can make it on a piece of paper. They write, in detail, on a 3 x 5 card what their fix is and put it next to what they have built. (*Interviews*, 2008, pp. 72-73)

In summary, interview question five asked interviewees to elaborate on what they required their students to do to complete a written product. The data extrapolated from these responses revealed three themes: First, they guided their students through a specific learning task. Second, the task they assigned followed a formula. Third, the formulaic

design of the task involved students in an incremental process, culminating in a written product.

Interview Question Six

The next interview question was number six, which asked participants to explain what they looked for in their students' writing and how they assessed it. Two strands appeared from the explication of their responses: clarity of thesis or reasoning and quality of argument or understanding in producing either an analytical essay or an investigation summary. All of the interview responses elicited these strands, albeit, the terminology used depended on the subject matter. For this reason, participants' responses are recorded below in numerical order:

Participant one stated, "I look for precision in the use of language Things like appropriate transition expressions indicate to me how well you understand historical concepts" (*Interviews*, 2008, pp. 3-4). Participant two delineated three categories of student writing, which required different evaluative measures:

Reflection is the simplest You just want them to respond with something. In the interpretation, you're looking for comprehension and understanding. . . . In analysis, you're looking for the evaluation, synthesis sort of skills – application, compare and contrast. (p. 10)

Participant three emphasized assessment based on students' adherence to a strict formula:

The thesis statement has to contain both the topic and the argument. . . . the body paragraphs: topic sentences . . . lead-ins, context lead-ins, concrete details, commentary, and transitions and concluding sentences and then all the way through to the concluding paragraph, which just summarizes their argument. (*Interviews*, 2008, p. 17)

Participant four assessed student writing in a similar fashion, explaining, "Make sure that you have your intro. . . . your body of evidence. . . . make sure it's clear; make sure that it

follows a clear progression, and then conclude, summarize – boom – done” (p. 40).

Participant five, in accord, evaluated student writing on the basis of “clarity of structure, quality of argument,” and “evidence to support the argument” (p. 48).

Participant six described a similar evaluation process, which took into account “clarity of thought and explanations” and, like participant four, conciseness. Participant six, moreover, sought evidence of identifiable metacognitive strategies, “being able to explain those concepts or processes” involved in the completion of a specific task (*Interviews*, 2008, pp. 56-57). Participant seven indicated a metacognitive approach as well: “I want them to understand what they did, not just say I plugged in this formula but why they did it. I want to see a little bit of their reasoning (p. 64). Participant eight, furthermore, emphasized adherence to directions and quality of content, “getting the gist of the experiment” in addition to observing writing conventions: “I assess by how they follow instructions, the grammar, the spelling, the content” (pp. 73-74).

Thus, in reference to interview question six about assessment practices, each of the eight participants indicated that clarity and quality were the benchmarks by which they gauged written assignments. Participants three, five, and eight, moreover, stated that they used rubrics to assist them in this assessment. In addition, none of the respondents indicated that he or she placed primary emphasis on writing conventions although participants six, seven, and eight acknowledged their importance in the context of a written product. Interestingly, participants six and seven, who asked for clarification of the term metacognition in response to interview question three, were the two respondents who indicated that they wanted their students to understand and to articulate the

processes [the metacognition] they used to complete and then to summarize in writing a scientific or mathematical investigation.

Interview Question Eight

Interview question eight sought to determine the extent of departmental collaboration on writing instruction in specific content areas. Participants' responses indicated one of two approaches: individualistic or collaborative. The approach of participants one and two was individualistic. Participant one stated,

. . . we discuss it from time to time. I don't think there's anything clearly defined, and I'm just as happy there isn't . . . I've developed a load of stuff on my own. . . . I know there is a belief that we should do writing, and sometimes we've discussed things, like we should have the same expectations as the English Department, but I don't necessarily agree with that. (*Interviews*, 2008, p. 5)

Participant two described another individualistic approach:

We haven't explicitly articulated what those would be [department writing expectations]. . . . we kind of assume that we're in a college prep school, and definitely by junior and senior year, they should be able to do strong analysis writing, where they are already using synthesis, compare and contrast, evaluation skills and communicating clearly mechanically. Sometimes we'll share. Someone will say, "Read this kid's paper; it's so great." And then you kind of see what other people view good writing is. But formally we haven't articulated it, laid it out in sort of a rubric. (p. 11)

One the other hand, participants three to eight, acknowledged a certain degree of departmental collaboration on teaching writing. Participant three, for example, explained,

. . . we have a pretty standard formula for the literary analysis essays. . . . our department expectation, as far as what a literary analysis essay looks like, is pretty consistent. The kids seem to know the process. When I ask them about a topic sentence, concrete details, commentary, they can tell me all of those things by the junior year. . . . We have no consistent other sort of writing, which is really too bad because . . . many of them won't write that many literary analysis essays after they leave high school. (*Interviews*, 2008, pp. 18-19)

Participant four stated, ". . . as a department, we've agreed that we do this major research

paper during the second semester (pp. 10-11). Participant five described a developmental approach the department used:

We have sort of a step-by-step program, where the freshmen start using the same overall model, but they just take a piece of it as freshmen and learn how to write a really good paragraph first semester, and then by the second semester they're taking a shot at the whole essay with a thesis paragraph and the body paragraphs and the conclusion. . . . Then they get to history as juniors. . . . the teachers require at least one full-blown essay a quarter. We all teach the same model, so the kids won't get confused if they transfer from one class to another. (p. 50)

Participant six, on the other hand, indicated a collaborative approach in progress:

Right now we require two formal APA style lab reports per year, one each semester. That's the only requirement that we have at this point, but we've talked about trying next year implementing more writing into our curriculum. We're trying to get students to look at concepts and processes and summarize them and to get them to write them and turn them in as assignments. We're trying to get them to start taking ownership of having to learn the material. (*Interviews*, 2008, p. 58)

Participant seven articulated a less collaborative approach but, nonetheless, a collegial attitude in reference to other forms of subject matter expression:

I think everybody doing investigations has them write something. I don't really feel there is any expectation beyond what I am doing, but we are looking for more than just the numbers. We are always looking for another way for the kids to represent their work. (p. 66)

Lastly, participant eight indicated that the department collaborated on the expectations and requirements for a scientific abstract: "Our writing across the curriculum for biology and anatomy is the abstract" (p. 75).

In summary, with the exception of participant one, all respondents to interview question eight articulated that they collaborated, to a certain degree, with department colleagues to promote student writing. Participants three, four, five, six, and eight, moreover, suggested that they sought, within their departments, to align writing instruction according to specific criteria and to standardize performance expectations.

Interview Question Nine

Interview question nine about the high school community's view of writing was the last question in the series of questions relating to Research Question Two: To what extent do teachers in Catholic secondary schools use writing as a tool to foster the metacognitive skill development of their students? This interview question elicited two types of responses. Participants were either nebulous about their school communities' writing agendas or precise in articulating a school-wide writing initiative, as was the case with participants five and eight.

Participants one, two, three, four, six, and seven were unclear as to their schools' overall commitment to writing. Participant one, for example, stated,

I think that theoretically most people understand that you should be able to write in any kind of subject. . . . most people understand that writing is a way to explain what is going on in your mind. I don't really know if it's very defined; it's a very general belief that writing is important. (*Interviews*, 2008, pp. 6-7)

Participant two, on the other hand, gave an historical perspective:

I think it [writing instruction] slowly, but not dramatically, increased in over the 20 plus years I've been here. . . . the English Department teach a certain style of writing, basically the five-paragraph essay. . . . That gets reinforced by other departments, which use a lot of writing, such as history and religion. . . . so I think school-wide, it's a high priority. (p. 11)

Participant three, nevertheless, indicated a regret that the school community lacked a comprehensive writing program:

I don't think there is a . . . view of writing. They would say [the school community] it is very important, but no other department [other than English] is willing to take up any portion of the writing. You may have individual teachers who give writing assignments, but they are not reading for anything substantive rather than ideas. So structure, grammar, and all those things are not reinforced. There's no format that allows kids to carry through. . . . I think it's sad that we have no consistent program of writing. Even though it's in our ESLRS [expected school-wide learning outcomes], there are no requirements outside the English Department for writing as far as I can tell. (*Interviews*, 2008, p. 20)

Participant four, though, described an experience with a school-wide writing scheme which failed:

A few years ago there was an initiative here called Writing across the Curriculum. . . . a very, very noble effort. . . . As far as I know, that didn't get much support as there wasn't that push behind it. . . . so we have tried to tackle it [writing] department by department. (pp. 41-42)

Participants six and seven, additionally, responded with ambiguity to question eight.

Participant six stated, "I don't know what the community's view of writing is. . . . I assume that is important, but I don't know that explicitly" (pp. 58-59). Participant seven, reverberating this response, claimed, "I don't know, to tell you the truth. . . . I don't feel like I am tucked away. I feel like I hear what's going on. . . . I have no idea (pp. 66-67).

In contrast to the responses cited above, participants five and eight elaborated upon a school-wide writing initiative. Participant five explained,

I think we finally discovered it's a real priority. We have an English teacher. . . . working with . . . teachers in all the departments to encourage writing because some teachers . . . are reluctant to have their kids write. I don't know if it's because of the work involved or partially because they don't feel they're good at it either, so they don't want to put themselves on the line. She's really encouraging those folks and trying to see what every department can do . . . to get some writing involved. . . . we have really made some strides the last couple of years towards teaching writing across the curriculum. (*Interviews*, 2008, p. 51)

Participant eight stated that the school community's view of writing was

Very, very positive. We have a teacher who has devoted one period a day for the entire year . . . to writing across the curriculum. She's meeting with every member of every department. She started with the . . . freshman teachers. . . . Then next year she's meeting with all the sophomore teachers, and it's [writing instruction] going to build on what the freshman teachers have taught. . . . The school puts a high priority on it [writing]. (p. 76)

In conclusion, the participants' responses to question nine on their high school community's view of writing yielded two points of view. Six of the participants

expressed ambiguity about their high school communities' views of writing. This ambiguity suggested that in the schools where these participants were employed writing was not widely taught or discussed across the disciplines. Two of the participants, in contrast, were involved in an incremental, writing across the curriculum initiative, which they viewed as a positive innovation. The next section delineates participants' responses to Research Question Three, which required participants to elaborate on the obstacles they encountered when using writing as a tool to develop their students' metacognitive skills.

Research Question Three

Interview Question Seven

Research Question Three asked the following: To what extent do teachers in Catholic secondary schools encounter obstacles that prevent them from fostering, through writing, the metacognitive skill development of their students? Analysis of the data generated from interview question seven about the obstacles teachers encountered produced four themes: teachers' explicitness, teachers' time, students' skill levels, and students' resistance. Participants one and three voiced that they needed to be clear in their objectives. Participant one explained, ". . . if I am not clear in my head what I want from them, then they're going to have trouble. . . . Once I'm clear and know exactly what I'm looking for, then I can communicate that" (*Interviews*, 2008, p. 5). Participant three, in addition, identified instructional clarity as a major focus, stating,

Being an intuitive thinker, I have to be as careful as I possibly can, to be as explicit as possible. . . . No matter how many times I say something, what they perceive is something else. I don't know how to check for understanding in that way. . . . being as explicit as possible is the first thing I need to do, and always, when I write prompts, to be as clear as possible. (p. 18)

Participants three and five, moreover, expressed concern over the amount of time needed to correct writing assignments. Participant three expressed that “There just is never enough time to grade because some things take forever. You could take 20 to 30 minutes on an essay” (*Interviews*, 2008, p.18). Participant five reiterated this concern: “. . . it’s . . . tedious when you’ve got four or five classes, and they’re writing quite a bit . . . it’s a lot of work for the teacher” (p. 49).

Another obstacle participants encountered was deficiency in students’ skills.

Participants two, four, six, and eight elaborated upon various types of deficiencies.

Participant two explained,

. . . when it [writing] involves them analyzing or interpreting someone else’s writing, they get caught up . . . when they disagree with the person’s point of view. . . . They’ll either twist it around to fit what they think, or they’ll kind of tune the person out. . . . Another one [obstacle] would be that they do not always take the time . . . to do the reading really thoughtfully, so they are not familiar enough with the author’s viewpoint to really analyze deeply, so they’re just giving a kind of surface level [response]. (*Interviews*, 2008, p. 10)

Participant four found freshmen to be lacking foundational skills in writing:

“They don’t have the basic skills down. . . . if you have them write something, they write just like they talk. Trying to break that, that’s what I see as the biggest thing [obstacle]” (*Interviews*, 2008, p. 40). Participant six, on the other hand, expressed concern about

students’ ineptness in summarizing information:

The biggest one [obstacle] . . . is their ability to summarize information, especially in science when we are doing things a little more technical. I am not looking for all these descriptive words that they use in their English class. We are looking for a different type of writing, more concise, so they have difficulty taking ideas and summarizing them into their own words. I get a lot of snippets of words that are copied from somebody else. (p. 57)

Participant eight found students' ability to transfer skills from one subject to another problematic: “. . . what they can't do, even seniors, they can't take something they've learned in English and transfer it to science and vice versa (p. 74).

The final obstacle, which challenged participants five and seven, was students' resistance. Participant five related,

One [obstacle] is their natural resistance because it's [writing's] hard work. I

don't think anything develops more slowly than the writing skill, and you have to keep doing it and critiquing it and doing it. . . . you have to do it with them. . . . and it's hard for the kids to see the improvement sometimes because it's incremental. (*Interviews*, 2008, p. 48)

Participant seven, in addition, met with student resistance when assigning written work:

There's this huge fear of writing about math because a lot of them are just taught “this is the formula; this is what you do.” There's not context; there's no real-life interpretation of it. Having to write about it freaks them out. . . . Kids are very narrow-minded about what you do in each class. (pp. 65-66)

Thus, analysis of the data extrapolated from responses to interview question seven revealed that participants encountered four obstacles. First, respondents indicated that they needed to work on explicitness when assigning students specific writing tasks. Second, respondents expressed concern that responding to and grading written assignments required copious amounts of time. Third, respondents noted that their students often lacked the critical thinking and, in some cases, the basic skills required to complete an academic writing assignment. Fourth, respondents indicated that they met with student resistance when a writing assignment was challenging or, in students' minds, irrelevant to the subject matter. The final chapter of this dissertation will provide the conclusions and implications related to these findings as well as recommendations for future research and practice.

CHAPTER FIVE

CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS

Summary

As discussed in Chapter One, the problem under investigation addressed two factors. The first factor is that studies have concluded that American schools were neglecting to teach writing (Lewin, 2003; National Commission on Writing in America's Schools and Colleges, 2003). The second factor is that, in order to become skilled writers, students need to develop their metacognitive skills, which Marzano et al. (1988) defined as "being aware of our thinking as we perform specific tasks and then using this awareness to control what we are doing (p. 9).

The research problem was predicated by three areas of research. First, the vast majority of teachers in the content areas indicated a reluctance to integrate writing instruction throughout their curricula (Jacobs, 2001). Second, many teachers have not had the opportunity to study writing pedagogy (The National Writing Project & Nagin, 2003) and, thus, were unfamiliar with its interdisciplinary nature (Costa & Liebmann, 1997; Hull 1989). Third, teachers needed to learn how to sequence writing assignments incrementally in order to advance students' abstract thinking skills (Berthoff, 1984). This is important for metacognitive skill development because, once students become aware of their own thought processes, they are better able to monitor writing tasks which require evidence of knowledge, accuracy, and proficiency.

In addition, the research question takes into account the 2004 Stanford Achievement Test (SAT) that requires prospective college students to complete a timed writing test, scored holistically. Writing specialists (Winerip, 2005), however, criticized

the scoring of these writing samples because, they asserted, good writing is the result of rewriting.

Moreover, studies have indicated that, because writing is thinking, it is an interdisciplinary tool that must be applied regularly across the curriculum (Britton, Burgess, McLeod, & Rosen, 1975; Costa & Liebmann, 1997; Freedman, Flower, Hull, and Hayes, 1995; Gooden, 1996; Holbrook, 1964; Hull, 1989; Lindemann, 1987; Moffett, 1992a; National Writing Project & Nagin, 2003; Tchudi & Huerta, 1983; Zinsler, 1988, 2001). Furthermore, the literature on cognitive psychology (Anderson et al., 2001; Costa & Kallick, 2000; Flavell 1979; Gardner, 2000; Perry, 2000; Pugalee, 2001; Zemelman, Daniels & Hyde, 1993, 2005) has underscored the importance of teaching students to reflect upon the thought processes they use to perform specific learning tasks. Hence, this study's main focus was to determine how teachers used writing as a tool to assist students in developing their cognitive skills, particularly their metacognitive awareness.

A qualitative methodology was used in this investigation. Eight teachers in five subject areas, English, history, mathematics, religion, and science, volunteered to participate in the study. The researcher chose to interview teachers in Catholic high schools because she perceived a correlation between the conceptual framework for the study (Vygotsky, 1986) and the philosophy of Catholic education (National Conference of Catholic Bishops, 1972; United States Catholic Conference, 1979).

For the reader's clarification, each of the interview questions listed below is accompanied by the research question to which it relates:

1. Explain how you teach. (Research Question 2)

2. Elaborate on the thinking skills you emphasize in your teaching. (Research Question 1)
3. Elaborate on your understanding of metacognition and whether you address the development of this awareness in your students. (Research Question 1)
4. Describe the types of writing you have your students do and how often you require them to write. (Research Question 2)
5. Explain what you have your students do to complete a written assignment. (Research Question 2)
6. Explain what you look for in your students' writing and how you assess it. (Research Question 2)
7. Explain the obstacles you encounter when you require your students to write. (Research Question 3)
8. Describe your department's writing expectations. (Research Question 2)
9. Elaborate on your high school community's view of writing. (Research Question 2)
10. Explain your understanding of Catholic education. (Research Question #1)

Conclusions

Analysis of the data extrapolated from the responses of the eight participants yielded predominant themes in respect to each of the interview questions. These themes are delineated below:

- Interview question one about teaching pedagogy
 - (1) Sought to connect to students
 - (2) Respected and encouraged students' individual learning styles

- (3) Sought to develop students' critical thinking skills
- Interview question two about thinking skills
 - (1) Used guided learning strategies to enable students to function independently and analytically
 - (2) Challenged students to recognize, respect, and analyze diverse points of view
 - Interview question three about metacognition
 - (1) Asked the interviewer to define the term *metacognition*
 - (2) Elaborated upon the methods they used to foster students' metacognitive awareness
 - Interview question four about types of writing assignments and their frequency
 - (1) Assigned expository writing: paragraphs, summaries, laboratory reports, essays, research papers, abstracts, and reflections
 - (2) Assigned imaginative writing: historical fiction, letters, postcards, and project summaries, which required facts to be presented creatively
 - (3) Indicated writing frequency depended on assignments, ranging from once a week to once a year
 - Interview question five about the process for completing a written assignment
 - (1) Taught students a formula
 - (2) Guided students through the task

- (3) Approached the task incrementally
- Interview question six about writing expectations and assessment
 - (1) Emphasized clarity of thesis and/or reasoning
 - (2) Emphasized quality of argument and/or understanding
 - Interview question seven about obstacles encountered
 - (1) Sought explicitness in assignment directions
 - (2) Found time constraints a challenge
 - (3) Ascertained deficiencies in students' writing skills
 - (4) Encountered student resistance to writing
 - Interview question eight about departmental approaches to writing instruction
 - (1) Used an individualistic writing pedagogy
 - (2) Collaborated with colleagues on writing strategies and expectations
 - Interview question nine about high school community's view of writing
 - (1) Indicated an ambiguity about the community's writing agenda
 - (2) Articulated a school-wide writing initiative
 - Interview question ten about Catholic education
 - (1) Emphasized the whole person
 - (2) Stressed the development of community
 - (3) Highlighted commitment to service
 - (4) Underscored religious education

For the reader's clarification, the next section will relate the themes delineated above to the research questions from which they evolved. Participants' individual responses to

each of these research questions have been recorded in Chapter Four of the study.

Emergent Themes and Their Correlation to the Research Questions

Themes Extrapolated from Research Question One

Research Question One sought to discover to what extent teachers in Catholic secondary schools understood the concept of metacognition. The interview questions relating to Research Question One were the following:

- Interview question two: Elaborate on the thinking skills you emphasize in your teaching.
- Interview question three: Elaborate on your understanding of metacognition and whether you address the development of this awareness in your students.
- Interview question four: Explain your understanding of Catholic education.

Respondents indicated that they endeavored to develop their students' critical thinking skills. To facilitate this objective, they used guided learning strategies to help their students discover new ideas and to understand concepts and their applications. This method correlates with Vygotsky's (1978, 1986) Zone of Proximal Development Theory (ZPD), discussed in the Theoretical Rationale section of Chapter One of this study.

Understanding, for these teacher participants, included the ability to recognize, respect, and analyze with objectivity diverse points of view. Thus, challenging students to move beyond their existing levels of awareness was a common theme in relationship to Research Question One.

The responses to the prompt regarding participants' understanding of the term metacognition resulted in two answers. Respondents indicated either that they were

unfamiliar with the term and asked for clarification or that they were familiar with metacognitive theory and proceeded to explain the strategies they used to foster their students' metacognitive skills. Those unfamiliar with the term, however, gave evidence of an intuitive understanding of the importance of metacognitive awareness. They elaborated upon strategies they used to encourage their students' to reflect upon their own thinking and upon the cognitive processes they used to complete specific learning tasks.

The final question in the series related to Research Question One required participants to explain their understanding of Catholic education. All underscored that Catholic schools seek to educate the whole person. In spite of their schools' rigorous academic requirements, they viewed academic learning and instruction as only one component of students' education. Other components of equal importance were the development of community, commitment to service, and religious education and observance. As discussed in Chapter One of this study, this emphasis on positive community interaction illustrates the correlation between the philosophy of Catholic education (Bryk, Lee & Holland, 1993; Congregation for Catholic Education, 1988; Convey, 1992; National Conference of Catholic Bishops; United States Catholic Conference, 1979, 1981) and the constructivist theory of education promulgated by Vygotsky (1978, 1986). Figure 1 of this study depicts this correlation.

Vygotsky (1978, 1986) asserted that learning evolved from social interaction. The teacher in a decentralized classroom, such as Vygotsky envisioned, assumed the roles of mentor, facilitator, nurturer, and assessor, to name a few instructional responsibilities. Thus, the teacher's role in a Vygotskian classroom is to provide students with opportunities for social interaction. This interaction, he believed, promoted learning

and cognitive development, which were facilitated through the cooperative efforts of teacher and student or through the cooperative efforts of a student and a more knowledgeable peer. Thus, Vygotsky's social learning theory correlates with Catholic education because of its emphasis on the important role of the teacher in establishing a classroom climate of service, respect, and cooperation (National Conference of Catholic Bishops, 1972).

Themes Extrapolated from Research Question Two

Research Question Two sought to determine to what extent teachers in Catholic secondary schools used writing as a tool to foster the metacognitive skill development of their students. The six interview questions relating to Research Question Two are listed below:

- Interview question one: Explain how you teach.
- Interview question four: Describe the types of writing you have your students do and how often you require them to write.
- Interview question five: Explain what you have your students do to complete a written assignment.
- Interview question six: Explain what you look for in you students' writing and how you assess it.
- Interview question eight: Describe your department's writing expectations.
- Interview question nine: Elaborate on your high school community's view of writing.

In their responses to interview questions one and five, participants' voiced that they endeavored to establish positive relationships with their students, that they were

sensitive to individual learning styles, and that they aspired to foster their students' critical thinking skills. The types of writing they assigned to meet these objectives were both expository and imaginative and ranged from once a week to once a year. Among the expository writing assignments designated were analytical paragraphs and essays, book reports, research papers, results of mathematical investigations and science laboratories, science abstracts, and debate research portfolios. The imaginative assignments included, for example, first person historical narratives, graph stories, letters, postcards, and index card reports on science sculptures. The imaginative assignments, moreover, required the integration of factual knowledge and the application of concepts under study in the classroom.

Interview questions five and six focused on writing expectations and assessment priorities. All of the participants indicated that they had developed formulae for teaching the types of writing specific to their subject areas. Each used a formula, depending on assignment parameters, which they modeled in a variety of ways. In all cases, this guided instruction and learning was incremental and culminated in a final written product that was assessed according to specific criteria. Participants' responses in respect to assessment indicated that they had two priorities: clarity of thesis or reasoning and quality of argument or understanding. Although they alluded to writing conventions, their assessments did not focus primarily on grammar, usage, or syntax.

Interview questions eight and nine required participants to consider writing from a more comprehensive perspective. First, they explained their departments' expectations for writing, and then they reflected on their school communities' views of writing. Participants described two departmental approaches to the teaching of writing:

individualistic or collaborative. The first participant indicated that the department discussed writing occasionally but had not developed particular standards overall. Participants two through eight, on the other hand, communicated that their departments collaborated, to a certain degree, to promote writing skills. In fact, five of the participants had worked with colleagues to align writing instruction in accord with specific content-area criteria and performance standards. Conversely, seven of the participants' responses to the question about their communities' views of writing engendered a sense of ambiguity. In general, they did not know what their school communities' writing expectations were, nor did they, for the most part, have knowledge of other departments' writing requirements or objectives. Two participants, in contrast, described a recently initiated school-wide writing program, with a director who would oversee an incrementally integrated Writing across the Curriculum Program.

Themes Extrapolated from Research Question Three

The final research question, Research Question Three, sought to determine to what extent teachers in Catholic secondary schools encountered obstacles that prevented them from fostering, through writing, the metacognitive skill development of their students. This question was addressed by interview question seven: Explain the obstacles you encounter when you require your students to write. Four predominant obstacles emerged from analysis of the data. The first obstacle was teachers' explicitness. Several of the participants expressed concern that they needed to be clearer in explaining their expectations so that students better understood the content and context of the assignment and the criteria that would be used to grade it. The second obstacle, which participants encountered, was the amount of time required of them to comment on and grade written

assignments. The third obstacle that challenged participants was the fact that their students lacked the critical thinking, and sometimes basic, skills essential for the completion of an academic writing assignment. The fourth, and final, obstacle participants described was students' resistance to writing assignments that challenged them or to writing assignments that students believed were outside of a particular subject matter's traditional realm.

Implications

This study, which involved the researcher in examining how teachers in Catholic secondary schools used writing to foster their students' metacognitive skills, incorporated several components. These were the teaching of writing, the development of metacognitive skills, and the philosophy of Catholic school education. Writing pedagogy has evolved prodigiously since Emig (1971) concluded that the teaching of writing, to be effective, had to be student-focused and process-oriented. Her findings gave impetus to the writing-process movement as articulated by Elbow (1996, 1998), Lindemann (1987), Murray (2002), and Moffett (1992a). This new way of thinking about writing has spawned an abundant interest in how students internalize, process, and produce required written assignments that must meet a specific set of criteria in any given subject area.

Implication One

Nevertheless, in spite of the attention given to the pedagogical practices of writing teachers over the past several decades, the National Commission on Writing in America's Schools and Colleges (2003) found American schools deficient in teaching writing. This study coincided with the Commission's five-year plan, scheduled for completion in 2008, to improve student writing throughout the nation. The Commission's projected outcome

was to make writing a fundamental component in all discipline areas. Thus, one implication of this study is that it will add to the body of knowledge in the area of writing that has accumulated before and during the Commission's investigation.

Implication Two

The second implication of this study is its focus on metacognitive skill development, which has become the subject of much discussion and research since the latter part of the 20th Century. Researchers (Lerch et al., 2006) concluded that teaching students to use metacognitive practices in their learning helps them to internalize, assimilate, and articulate knowledge. Moreover, Anderson and Krathwohl's (2001) revision of Bloom's (1956) Taxonomy included another higher order thinking skill. This higher order skill is metacognition, which Marzano (2001) described as the ability to specify a goal and to monitor process, clarity, and accuracy.

Metacognitive skill development was the central focus of this study. The researcher interviewed eight secondary school teachers in five subject areas to determine their understanding of the term metacognition and how they used writing to foster its growth in their students. Using writing as a tool for metacognitive discovery is based on Vygotskian (1978) theory. He declared that ". . . writing has occupied too narrow a place in school practice as compared to the enormous role that it plays in children's cultural development" (p. 105). In addition, Vygotsky (1986) emphasized that "intellectual development . . . is unitary, and the different school subjects interact in contribution to it" (p. 186).

Although this study focused on the metacognitive skill development of students, the researcher discovered that the teachers she interviewed were mindful of the processes

which they used to lead their students to specific learning outcomes. She conjectured that they, perhaps more than their students, benefited from the metacognitive reflection in which they engaged to promote student understanding and the application of knowledge and concepts.

Implication Three

The third and final implication of this study entails the community of Catholic schools. Implicit to Vygotsky's Zone of Proximal Development Theory (1978, 1986) is the notion that students learn best in a social setting, in which they can actively interact with a teacher and other learners. Roth and Lee (2007), in their explanation of Cultural-Historical Activity Theory (CHAT), which they affirmed Vygotsky and his collaborators have spawned, explained that socially constructed learning is generated by the individuals who contribute to and sustain a particular system. Interactive writing classrooms across the curriculum exemplify this constructivist approach to learning and instruction. Accordingly, Bryk, Lee, and Holland (1993) found that Catholic schools reflected a similar kind of activity system. They concluded that "Fundamental to Catholic schools are beliefs about the dignity of each person and a shared responsibility for advancing a just and caring society" (p. 312).

During the time of this investigation, the eight participants and the researcher served in Catholic high schools, whose common ethos is community-centered. The findings of Bryk, Lee, and Holland (1993) provided credence that Catholic schools, by their very nature, promoted and practiced a form of Vygotskian (1978, 1986) social constructivist theory. This theory of development through socialization is expounded in the documents of Catholic education (Convey, 1992; National Conference of Catholic

Bishops, 1972; United States Catholic Conference, 1979, 1981). Because Catholic education is predicated on reflective practices, its schools have the potential to foster their students' metacognitive skill development within the classroom as well as throughout the school community. Thus, this study, which sought to demonstrate the relationship between the philosophy of Catholic education, metacognitive skill development, and writing pedagogy, augments the body of knowledge on metacognition and composition, which has emphasized the importance of societal influence on both school and life-long learning.

Recommendations

Further study and research within the community of Catholic secondary schools is necessary in order to determine whether students are learning incrementally the metacognitive skills they need to be successful writers in all subject areas

Recommendations for Future Research

For purposes of future research in using writing as a tool to foster students' metacognitive skills the researcher recommends:

1. That future studies with student participants are needed to investigate to what extent students in Catholic secondary schools understand the metacognitive processes they use while writing in specific subject areas.
2. That further research is needed to establish to what extent group writing activities promote the metacognitive skill development of students in Catholic secondary schools.
3. That further research is needed to assess to what extent using computers to write influences the metacognitive skill development of students in Catholic high schools.

4. That further research is needed in Catholic high schools to determine to what extent teachers have been prepared to teach writing in their subject areas and to investigate the efficacy of their writing pedagogies and instructional strategies.

Recommendations for Professional Practice

For future implementation within the community of Catholic schools, the researcher recommends:

1. That Catholic high school principals, assistant principals for academics, and teachers articulate and implement an interdisciplinary approach to the teaching of writing.

2. That Catholic high school presidents, principals, and teachers convey the importance of metacognitive awareness as it relates to the reflective practices inherent in Catholic education and promote it as a fundamental component in instructional and co-curricular planning, practices, and activities.

3. That Catholic high school presidents and principals establish parameters for class size in order to provide students with rigorous and effective, individual and collective learning opportunities and to provide teachers with ample planning and assessment time.

4. That Catholic elementary and high school teachers collaborate on writing instruction across grade levels and disciplines in order to standardize expectations and requirements for teachers and students and to ensure that teachers foster their students' metacognitive and writing skills through collegial and incremental instructional practices.

Closing Remarks

Educators in the 21st Century are challenged by the need to develop, within their students, a global awareness. The onslaught of technological innovations in the latter

part of the 20th Century has made it imperative that students recognize the importance of communicating intelligently, reflectively, and respectfully. The new-found ability to connect with other human beings at the push of a button has engendered a concern in both schools and the workplace about how individuals communicate with one another. Because writing, especially electronically, has become the predominant mode of communication world-wide, it needs to be taught, practiced, and applied across all disciplines.

Writing, as this study has found, is a cognitive tool, capable of enhancing ever higher levels of awareness. Students and adults who employ metacognitive skills, which enable them to reflect upon particular tasks as they progress through them, are more likely to succeed in school, the workplace, and the community at large. Because ideal Catholic schools incorporate reflective practices throughout their curricula, they have the potential to serve as models for constructivist learning and instruction. Catholic schools espouse the building of community as a core value; similarly, constructivist educational philosophy, such as Vygotsky's Zone of Proximal Development Theory, underscores the importance of collaborative classroom practices to promote each student's potential. These philosophies of learning, both secular and Catholic, when viewed conjointly, provide a blueprint for 21st Century education. This blueprint paves the way for learning and instruction that instills in students global awareness, that fosters in students reflective practices through metacognitive skill development, and that strengthens in students the willingness to collaborate and to share responsibility.

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APPENDIXES

APPENDIX A: INITIAL QUESTIONNAIRE

Questionnaire for Teachers in Catholic Secondary Schools

My name is Bonnie Davis. I am a doctoral student at the University of San Francisco. I am studying how writing is used at the secondary level to develop students' metacognitive skills. Would you be so kind as to respond to the following questions in preparation for my future research?

Please check [✓] *yes* or *no* to the following:

1. Do you understand what the term metacognition means?

_____Yes _____No

2. Do you use writing activities/assignments to develop students' critical thinking skills?

_____Yes _____No

3. Would you be willing to participate in a one-hour interview to discuss your teaching practices?

_____Yes _____No

4. If you answered *yes* to the previous question, please complete the contact information below:

Name: _____

Subject Area: _____

School: _____

Phone: _____

Email: _____

Thank you for responding to this questionnaire.

APPENDIX B: IRBPHS APPROVAL LETTER
APPROVAL LETTER FROM
THE INSTITUTIONAL REVIEW BOARD
FOR THE PROTECTION OF HUMAN SUBJECTS (IRBPHS)

July 19, 2007

Dear Ms. Davis:

The Institutional Review Board for the Protection of Human Subjects (IRBPHS) at the University of San Francisco (USF) has reviewed your request for human subjects approval regarding your study.

Your application has been approved by the committee (IRBPHS #07-048). Please note the following:

1. Approval expires twelve (12) months from the dated noted above. At that time, if you are still in collecting data from human subjects, you must file a renewal application.
2. Any modifications to the research protocol or changes in instrumentation (including wording of items) must be communicated to the IRBPHS. Re-submission of an application may be required at that time.
3. Any adverse reactions or complications on the part of participants must be reported (in writing) to the IRBPHS within ten (10) working days.

If you have any questions, please contact the IRBPHS at (415) 422-6091.

On behalf of the IRBPHS committee, I wish you much success in your research.

Sincerely,

Terence Patterson, Ed.D, ABPP
Chair, Institutional Review Board for the Protection of Human Subjects

IRBPHS - University of San Francisco
Counseling Psychology Department
Education Building - 017
2130 Fulton Street
San Francisco, CA 94117-1080
(415) 422-6091 (Message)
(415) 422-5528 (Fax)
irbphs@usfca.edu

<http://www.usfca.edu/humansubjects/>

APPENDIX C: LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH
IN A NORTHERN CALIFORNIA DIOCESE

Bonnie J. Davis

San Francisco, CA 94134

January 23, 2007

_____, Superintendent
Catholic Schools
Diocese of _____

Dear _____,

I am a doctoral student in Private School Leadership at the University of San Francisco. I am in the dissertation writing and investigation stages of my program.

I am writing this letter to ask for your permission to conduct my doctoral research study in five high schools in the Diocese of _____. I am investigating how teachers in the subject areas of English, history, mathematics, religion, and science use writing as a tool to foster their students' metacognitive skills. I would like to interview 10 teachers – two in each subject area – in April and May of 2007.

For your information, I have enclosed a Sample Permission Letter should you consent to my study. The letter must be printed on the letterhead of the Department of Catholic Schools. Please send the Permission Letter to me, and I will attach it to my application to the Institutional Review Board for the Protection of Human Subjects.

Thank you for considering my research request.

Gratefully,

Bonnie J. Davis
USF Doctoral Student

Enclosure

APPENDIX D: CONSENT FORM FOR RESEARCH SUBJECTS

UNIVERSITY OF SAN FRANCISCO
CONSENT TO BE A RESEARCH SUBJECT

Purpose and Background:

Bonnie J. Davis, a graduate student in the School of Education at the University of San Francisco, is doing a study on how writing is used as a tool to develop the metacognitive skills of students in Catholic secondary schools in five subject areas: English, history, mathematics, religion, and science. In 2003, The National Commission on Writing in American Schools and Colleges called for “a fundamental reformulation of what this society means by learning and how it encourages young people to develop their full potential” (p. 9). They added, furthermore, that “The reward of disciplined writing is the most valuable job attribute of all: a mind equipped to think (p. 11). The Commission recommended five actions, which were the core of the Commission’s challenge to the nation to implement a five-year plan for the purpose of creating a nation of writers. The Commission, moreover, asked teachers of writing and those who develop writing teachers to set aside their pedagogical differences in order “to unite around a principled agenda for advancing writing” (p. 36).

Given the Commission’s findings and recommendations, there is clearly a need for additional research on teaching writing at the high school level. Moreover, because composing has been found to be an important tool for fostering students’ awareness of their own thinking processes, this investigation will collect and analyze data on how teachers in Catholic secondary schools use writing to foster metacognitive development. The study will coincide with the Commission’s five-year working program “to encourage a cultural change around writing in the United States, in both schools and colleges and in the larger society” (p.36), thereby adding to the body of knowledge already accumulated and perhaps sparking interest in future research on writing and metacognitive skill development at the high school level.

Procedures:

If I agree to be a participant in this study, the following will happen:

1. I will complete a short questionnaire giving basic information about my educational background and teaching experience.
2. I will participate in an interview with the researcher, Bonnie J. Davis, during which I will be asked to respond to seven questions on writing and metacognitive skill development.
3. I will be asked to review the transcript from that interview for clarity and for additional comments, as needed.

Risks and/or Discomforts:

1. Participation in research may mean a loss of confidentiality. Study records will be kept as confidential as is possible. No individual identities will be used in any reports or publications resulting from the study. Study information will be coded and kept in locked files at all times. Only the researcher will have access to the files.
2. The interview and review of the transcript will require approximately three hours of my time, which may already be impacted by professional and personal responsibilities.

Benefits:

There will be no direct benefit to me from participating in this study. The anticipated benefit of this study is a better understanding of how writing influences metacognitive skill development.

Costs/Financial Considerations:

There will be no financial costs to me as a result of taking part in this study.

Payment/Reimbursement:

There will be no payment or reimbursement for my participation in this study.

Questions:

I have talked to Mrs. Davis about this study and have had my questions answered. If I have further questions about the study, I may call her at (415) 468-4744.

If I have any questions or comments about participation in this study, I should first talk with the researcher. If for some reason I do not wish to do this, I may contact the IRBPHS, which is concerned with protection of volunteers in research projects. I may reach the IRBPHS office by calling (415) 422-6091 and leaving a voicemail message, by e-mailing IRBPHS@usfca.edu, or by writing to the IRBPHS, Department of Psychology, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

Consent:

I have been given a copy of the "Research Subject's Bill of Rights" and I have been given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. I am free to decline to be in this study or to withdraw from it any point.

My signature below indicates that I agree to participate in this study.

Subject's Signature

Date of Signature

Signature of Person Obtaining Consent

Date of Signature

APPENDIX E: RESEARCH SUBJECTS' BILL OF RIGHTS

RESEARCH SUBJECTS' BILL OF RIGHTS

The rights below are the rights of every person who is asked to be in a research study.

As a research subject, I have the following rights:

1. To be told what the study is trying to find out;
2. To be told what will happen to me and whether any of the procedures or devices are different from what would be used in standard practice;
3. To be told about the frequent and/or important risks, side effects, or discomforts of the things that will happen to me for research purposes;
4. To be told if I can expect any benefit from participating, and, if so, what the benefit might be;
5. To be told of the other choices I have and how they may be better or worse than being in the study;
6. To be allowed to ask any questions concerning the study both before agreeing to be involved and during the course of the study;
7. To be told what sort of medical or psychological treatment is available if any complications arise;
8. To refuse to participate at all or to change my mind about participation after the study is started; if I were to make such a decision, it will not affect my right to receive the care or privileges I would receive if I were not in the study;
9. To receive a copy of the signed and dated consent form; and
10. To be free of pressure when considering whether I wish to agree to be in the study.

If I have other questions, I should ask the researcher. In addition, I may contact the Institutional Review Board for the Protection of Human Subjects (IRBPHS), which is concerned with protection of volunteers in research projects. I may reach the IRBPHS by calling (415) 422-6091, by electronic mail at IRBPHS@usfca.edu, or by writing to USF IRBPHS, Department of Counseling Psychology, Education Building, 2130 Fulton Street, San Francisco, CA 94117-1080.

APPENDIX F: QUESTIONNAIRE FOR PARTICIPANTS

Questionnaire for Participants

Please complete the following questionnaire regarding your educational background and teaching experience. *Participants' names and schools of employment will be kept confidential.*

Name of Participant _____

School of Employment _____

Subject Taught _____

Number of Years of Teaching Experience _____

Please describe your educational background:

Please describe your teaching experience:

Signature: _____

Date: _____

APPENDIX G: FINAL LETTER TO PARTICIPANTS

September 14, 2008

Dear _____,

Thank you for participating in my doctoral research on how writing is used to develop metacognitive skills. Enclosed please find the completed, confidential transcript for your review.

Revise your answers as needed. You can make written comments on the document or type up additional comments. Once all of the interviews are completed, I will analyze the transcription data in reference to each of the questions I will have asked participants.

Gratefully,

Bonnie J. Davis
Doctoral Candidate, University of San Francisco

Enclosure