

COMMUNITY COLLEGE STUDENTS' WRITING: LEXICAL, SYNTACTIC, AND
COHESION DIFFERENCES IN L1, L2, AND GENERATION 1.5 STUDENTS AND
EXAMINING KNOWLEDGE OF THE WRITING PROCESS

A Dissertation

by

KATHERINE ANNE ABBA

Submitted to the Office of Graduate and Professional Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Chair of Committee,	R. Malatesha Joshi
Committee Members,	Erin McTigue
	Dominique Chlup
	Emily Cantrell
Head of Department,	Lynn Burlbaw

December 2015

Major Subject: Curriculum and Instruction

Copyright 2015 Katherine Anne Abba

ABSTRACT

Writing competently is a challenge for many college students. The need to improve writing at the postsecondary level has become a priority for business and education leaders alike in the United States. In the United States, for those who have not developed proficient English reading and writing skills, academic progress may be hampered on campuses where English is the primary language of instruction. Writing, especially for the diverse student population at the community college level, warrants attention in order to better guide instruction and assist students in achieving higher levels of proficient writing.

This study examined the writing of three groups of community college students: native English Language students (L1, $n = 146$), English as a Second Language students (L2, $n = 33$), and English as a Second Language students who graduated from high school in the United States and have lived in the United States for four or more years (Generation 1.5, $n = 72$). Writing samples and biographical survey information were gathered from students and samples were analyzed using the online tool, Coh-Metrix. The research questions used to guide this investigation examined the differences between these groups in terms of lexical, syntactic, and cohesion characteristics of proficient writing, as well as declarative and procedural knowledge of writing, and the impact of age of acquisition (AOA), parental education levels, and number of years of education in the United States on L2 and Generation 1.5 students' writing.

Results indicated significant differences in syntactic and lexical measures between all groups, with effect sizes ranging from small to large. The majority of differences related to proficient writing were found between L1 and Generation 1.5. Responses regarding declarative knowledge, students focused mainly on clarity, audience, grammar, and spelling. Planning and revising were considered much less important. Responses regarding procedural knowledge focused on goal setting/planning, establishing purpose, writing, and revising, with less importance given to spelling and grammar. Finally, age of acquisition accounted for 10 % of the variation in students' writing, specifically syntactic patterns, with parental education level and years of English studied in the United States having no significant impact.

DEDICATION

For J. Pat, who lends great love, strength, and faith and helps me to live the *Agere Contra* life.

For Mom and Dad, who toiled for this along with me.

For community college students, who inspire daily.

ACKNOWLEDGMENTS

I wish to begin by thanking my husband, Pat, who provided endless unconditional love, support, enthusiasm, and encouragement during the last five years. I thank my sons, Derry and Shea, simply because they, along with Pat, are the great loves of my life; this includes my new daughter, Nola, who thoughtfully inquired about my progress as she was trudging through her own studies. I am grateful for their presence in my life, their ability to make me laugh, cry, and smile through the years, as well as their faith in me. I am also grateful to my parents for their love and support, and teaching me to “do the best you can do”. My grandmother, Ella, should also take a bow for inspiring my love of reading, teaching, and learning.

I have many cherished friends and family members who encouraged me, supported me, cheered me on, and genuinely took interest in my study. I treasure you and I thank you. I am also very grateful to my colleagues and administration at Houston Community College who encouraged me throughout, offered help, empathized, and aided in my data collection, as well as the students who trusted me and participated in this study.

Millie Grazie to Dr. Joshi, my committee chair. It has been a privilege to work with and learn from you. I am grateful for your teaching and sense of humor, as well as your steadfast, patient guidance throughout. Your subtle persistence challenged me to explore a topic that helped me grow immeasurably as a researcher. To Dr. Joshi and my committee chairs, I consider myself quite fortunate to have had your knowledge and

expertise on my side and will always be grateful for your time, willingness, experience, and pointed questions/comment. Dr. Chlup, your class and excitement truly enhanced my graduate school experience. Dr. Cantrell, your passion for students, teacher education, and reading instruction is exemplary and infectious. Dr. McTigue, you kindly took on a complete stranger for the arduous dissertation process, lending your talents cheerfully so.

A hearty thank you to my fellow grad students and the department, faculty, and staff for making my time at Texas A&M University a true gift. Special thanks to Dr. Waxman for his knowledge and genuine efforts in helping me to embrace statistics, and to Kerri Smith, whose efforts and responsiveness made the paperwork less agonizing.

Finally, I wish to express my sincere admiration and gratitude to my brave, bold, courageous, community college students. You flame my eagerness for learning and education and it is an honor to share the classroom with you.

TABLE OF CONTENTS

	Page
ABSTRACT.....	ii
DEDICATION.....	iv
ACKNOWLEDGMENTS.....	v
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	ix
CHAPTER I INTRODUCTION.....	1
Statement of the Problem	1
Purpose of the Study and Research Questions.....	4
Generation 1.5, L2 and L1 Students Defined.....	5
Proficient Writing Defined.....	7
The Evaluation Tool: Coh-Metrix.....	8
CHAPTER II LEXICAL, SYNTACTIC, AND COHESION DIFFERENCES IN WRITING OF COMMUNITY COLLEGE STUDENTS	11
Writing and L1, L2, and Generation 1.5 Community College Students.....	11
Writing as Process and Product	14
Literature Review for L2.....	16
Literature review of Coh-Metrix with L2, Generation 1.5	18
Current Investigation.....	23
Method	24
Results.....	27
Discussion	34
CHAPTER III FACTORS INFLUENCING THE WRITING OF L2 AND GENERATION 1.5 COMMUNITY COLLEGE STUDENTS	44
Age	48
Length of Residency/Number of Years of English Studied in the U.S.....	50
Parental Education	52
Current Investigation.....	54
Method	55
Results.....	59
Discussion	64

	Page
CHAPTER IV COMMUNITY COLLEGE WRITERS: WHAT WERE THEY THINKING?	69
Defining the Characteristics of Proficient Writing and the Writing Process	70
Current Study	75
Method	76
Results	80
Discussion	83
CHAPTER V CONCLUSION	88
Recommendations	91
REFERENCES	94
APPENDIX A	114

LIST OF TABLES

	Page
Table 1: Coh-Matrix Variables Reported in the Study	22
Table 2: Descriptive Statistics of Lexical Measures, Z and Raw Scores	29
Table 3: Tukey’s Honestly Significant Difference (HSD) Comparison Between Variables.....	31
Table 4: Descriptive Statistics of Syntactic Measures, Z and Raw Scores	32
Table 5: Tukey’s HSD Comparison Between Variables.....	34
Table 6: Summary of Study Findings	38
Table 7: Means and Standard Deviations for Predictor Variables	60
Table 8: Factor Loadings of Confirmatory Factor Analysis with Varimax Rotation of Cohesion, Lexical, and Syntactic Variables.....	61
Table 9: Summary of Hierarchical Regression Analysis for Variables Predicting Syntactic Pattern Density.....	63
Table 10: Categories for Question Responses.....	79
Table 11: Response Frequency for Question 1: Procedural Knowledge	81
Table 12: Response Frequency for Question 2: Declarative Knowledge	82

CHAPTER I

INTRODUCTION

Oral and written communication skills are considered essential skills by employers and post-secondary instructors alike. In response to the Job Outlook 2015 survey of The National Association of Colleges and Employers (NACE), 73% of hiring managers ranked “Written Communication Skills” as a valuable attribute for college graduates, third in importance following leadership and teamwork ability (*Job Outlook*, 2014). Writing is a professional skill required in a range of business and service industries and can function as either a barrier or a boost in higher education. Although postsecondary instructors expect students to use their writing to learn, many students are still learning to write. Increasingly, first year composition students are not prepared to meet academic writing tasks and colleges are allotting significant time and dollars to remediate them. This is particularly true at community colleges, where many undergraduates begin their college careers.

Statement of the Problem

Community college, a common two-year college, is often the first step toward obtaining a college credential and/or increased career opportunity for many students. Within the community college population are students who are not able to compete academically and/or financially for a place in a four year university. Whether these students eventually matriculate to four-year institutions or enter the professional world, knowing how to write effectively is an established requisite skill. The majority of students who comprise the community college population are African American, White,

and Hispanic. These student groups are defined by the United States Census bureau in the following manner: “Black or African American – A person having origins in any of the Black racial groups of Africa; White – A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.” (United States Census Bureau, 2013, para. 1-2). The definition of Hispanic students reads:

Hispanics or Latinos are those people who classified themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the Census 2010 questionnaire - "Mexican," "Puerto Rican", or "Cuban"-as well as those who indicate that they are "another Hispanic, Latino, or Spanish origin." People who do not identify with one of the specific origins listed on the questionnaire but indicate that they are "another Hispanic, Latino, or Spanish origin" are those whose origins are from Spain, the Spanish-speaking countries of Central or South America, or the Dominican Republic. The terms "Hispanic," "Latino," and "Spanish" are used interchangeably. Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States (U.S.). People who identify their origin as Spanish, Hispanic, or Latino may be of any race. (United States Census Bureau, 2014, para. 2-4).

Nearly 50% of Hispanic students, many of whom speak primarily Spanish, pursue their postsecondary careers at a community college, along with 31 percent of African American students; by comparison, 28 percent of White students begin at community colleges (National Center for Public Policy, 2011). Approximately 1% are

international students. Yet, less than half of Hispanic students met the college readiness benchmark for English (measuring standard written English and rhetorical skills) on the ACT English college readiness assessment. Data from the National Educational Longitudinal Study, 1988 (NELS:88), indicated that only one in eight ELLs earned a bachelor's degree, compared with one in four English-proficient linguistic minority students and one in three monolingual English speakers (Kanno & Crowley, 2013). Many ELLs who start their college careers at the community college level do not reach regular college-level courses outside of the English as a Second Language (ESL) program (Razfar & Simon, 2011). Estimates are that 1 in 4 students will be English Language Learners (ELLs) by the year 2025 which implies the number of ELL postsecondary students is likely on the rise (Ragan & Jones, 2013).

While some non-native English speakers are fluent in everyday spoken English, they may lack the corresponding academic language proficiency (CALP) that requires proficiency in speaking, reading, writing, and listening skills, and the ability to communicate in various academic disciplines (Singhal, 2004). Thus far, progress has been sluggish for ELLs in the post-secondary U.S. educational system. For Hispanics and others who are not yet proficient in the English language, academic progress may be hampered on community college campuses where English is the primary language of instruction and is expected for students' reading and writing.

Purpose of the Study and Research Questions

The impetus behind this study was three-fold: one, the growing concern regarding the lack of quality writing instruction and/or proficient writing skills in kindergarten through postsecondary levels prevalent in the literature, particularly with students whose native language is other than English; two, the differences between native and non-native English speaking community college students' writing in terms of proficiency and the latent influences on their writing ability; three, as an educator of future teachers, I was curious to know what they know about writing, for their knowledge or nescience may impact future generations of young writers. In an attempt to further explore these topics, the following research questions were proposed:

1. What are the lexical, syntactic, and cohesion differences associated with proficient writing found in L1, L2, and Generation 1.5 Teacher Education and Child Development students' writing?
2. Do the linguistic differences of Generation 1.5, L1 and L2 writers show characteristics of proficient writing (lexical diversity, syntactic complexity, fewer cohesion devices) as found in previous studies using Coh-Metrix?
3. What is the influence of: (1) the number of years L2 and Generation 1.5 students have studied English in the U.S.; (2) age they began learning English (or, age of acquisition) ; and (3) parental level of education on syntactic and lexical complexity, as well as cohesion, for L2 and Generation 1.5 writers of English?

4. Do community college students majoring in Teacher Education and Child Development appear to understand what constitutes proficient (or effective) writing?

Generation 1.5, L2 and L1 Students Defined

Each research question addresses students' English language use and writing. Three classifications of students' spoken language were used in this study: English as a first language (L1), English as a Second Language (L2), and students known as Generation 1.5. Clearly, no group of students is fully described by one simple phrase or classification. However, there are terms which represent characteristics of a group that may enhance our understanding of them as learners. Although the term English as a Second Language (ESL) is viewed by some as a devaluation of one's first language, this term for the purposes of this study is preferable to English Language Learner (ELL) which is defined as "A national-origin-minority student who is limited-English-proficient" (United States Department of Education, 2005, para. 6). Additionally, ESL is still used to refer to multilingual students in higher education (*A Nation*, 2008) and in much of the extent literature reviewed. The terms ELL and ESL are also used by the National Center for Education Statistics (NCES), though ESL is seen mostly in reference to adults.

The term Generation 1.5 describes those who have done most or all of their schooling in the U.S. yet may have a limited knowledge of academic English, speak two or more languages, and learned English primarily through speaking and listening. The term Generation 1.5 has been modified throughout the years, though was originally defined by Rumbaut and Ima (1988) to describe the children of immigrants who arrived

in the U.S. at some point during their school years and who possess characteristics of both first- and second- generation immigrants. Generally, this group is thought of as U.S.-educated English language learners and, depending on when they moved to the U.S., may vary greatly in terms of their prior educational experience, native and English language proficiency, language dominance, and reading and writing competence (Harklau, 2003). Some Generation 1.5 students were born here while others have arrived at some point during the kindergarten to twelfth grade school years or may have moved here from US territories where they grew up with a native language other than English. They may or may not speak English at home with one or both parents, but are conversant socially in English and familiar with the culture of the U.S.

Students considered L2 are defined by Ferris, Brown, Hsiang, & Stine (2011) as students whose first language (the language to which they were exposed at home) is not English and can include international students and resident students who are late- or early arrivals to the U.S. This term may be used synonymously with the terms *bilingual*, *ESL*, *multilingual*, and *Generation 1.5* (Ferris, 2009). Students considered L1 are defined as those whose first language is English. English for this population was primarily learned from parents, caregivers, and/or other family members in the home.

In this study, Generation 1.5 participants have received formal education in the United States for more than four years (Doolan, 2013, 2014), speak a language other than English at home (Doolan, 2011, 2013, 2014; Doolan & Miller, 2012; Mikesell, 2007), and graduated from a U.S. high school (di Gennaro, 2009; Patthey, Thomas-Spiegel, & Dillon, 2009). L2 students have received four years or less of their education

in the U.S., contrasted with “less than four years” in previous studies (Doolan, 2013, 2014) and have not graduated from a high school in the U.S. Students considered L1 are those whose first language is English, have been educated and graduated high school in the U.S.

Proficient Writing Defined

Proficient writing at its highest level, defined by the College Board SAT Scoring Guide (2012):

Effectively and insightfully develops a point of view on the issue and demonstrates outstanding critical thinking, using clearly appropriate examples, reasons, and other evidence to support its position; is well organized and clearly focused, demonstrating clear coherence and smooth progression of ideas; exhibits skillful use of language, using a varied, accurate, and apt vocabulary; Demonstrates meaningful variety in sentence structure and; is free of most errors in grammar, usage, and mechanics. (para. 2)

Similar proficiency characteristics are found in the Test of English as a Foreign Language (TOEFL) Paper-Based Text Writing and Structure guidelines (2014).

Traditionally, characteristics of proficient writing are judged by human evaluators and generally consider rhetorical style, syntax, and pragmatics. The current investigation explores the use of the online computer tool, Coh-Metrix, to evaluate student writing characteristics.

The Evaluation Tool: Coh-Metrix

Good process instruction should be built on an understanding of the writing process and good diagnoses of developing writer's problems and needs (Hayes and Flowers, 1980), as well as the effect of individual differences on the translation process and completed written product. To this end, the current study employed the computational tool Coh-Metrix, an online tool which was used to assess students' writing through the analysis of linguistic features that characterize proficient writing with L1, L2, and Generation 1.5 student groups. (McNamara, Graesser, McCarthy, & Cai, 2014). The linguistic features range from simple measures of the word count to more complex measures of assessing cohesiveness and can examine features which characterize a higher quality writing sample. Coh-Metrix has demonstrated its effectiveness in analyzing differences found in L1, L2, and Generation 1.5 students' writing and can aid both instructors and students in distinguishing problem areas.

Coh-Metrix is a computer-based, free, online tool which analyzes texts on a number of cohesion, language, and readability measures, through the combination of numerous linguistic databases, a syntactic parser, and various textual analysis programs (Myers, McCarthy, Duran, & McNamara, 2011). It provides indices for the linguistic characteristics of texts on multiple levels of analysis, measuring characteristics of words, sentences, and entire texts. It can also provide textual measures such as average word and sentence lengths. In 2002, McNamara, Graesser, McCarthy, and Cai initiated the Coh-Metrix project which began as an interdisciplinary discussion on the importance of cohesion in text in determining the difficulty of written text as well as the reader's

comprehension of such text. Researchers from psychology, computer science, linguistics, and education believed that cohesion was objectively measurable; thus, the majority of indices provided by Coh-Metrix relate to the cohesion of the text. Prior research had shown that cohesion was essential to the comprehension of written text, yet there were no objective means in which to measure this (Graesser, Singer, & Trabasso, 1994; Kintsch, 1988; Trabasso & van den Broek, 1985).

Cohesion aids in binding the events and concepts within a text. Specifically, cohesion is seen in referential and semantic overlap of adjacent sentences, pairs of sentences in a paragraph, and adjacent paragraphs. An example of referential and semantic cohesion in two adjacent sentences would be: “Principals are the backbone of every elementary school. Without them (referring to principals), a school would be like a car without a steering column.” As words, concepts, or ideas overlap between sentences, they link sentences together. Cohesion is also portrayed by connecting words, known as connectives (i.e., the words and, before, but). Connectives convey a relationship between two ideas. The term cohesion, as defined by Coh-Metrix authors, encompasses the numerous lexical features in a text that contribute to cohesion. Texts may have one or many of these cues and help the reader to understand connections among sentences and paragraphs, which aids the reader’s understanding of the text. Low-knowledge readers benefit from added cohesion cues; high-knowledge readers (though not expert-knowledge readers) benefit from fewer cohesion cues. The latter is referred to as the “reverse cohesion effect” (O’Reilly & McNamara, 2007).

Coh-Metrix is frequently used to determine text readability yet has also demonstrated its usefulness in analyzing student writing. One distinct advantage of Coh-Metrix is its ability to provide information on a wide range of indices, within one tool, in minutes. Upon establishing an account, a user enters the written English text and Coh-Metrix produces measures in the following categories: Descriptive, Text Easability (reading ease or readability), Principal Component Scores, Referential Cohesion, Latent Semantic Analysis (LSA), Lexical Diversity, Connectives, Situation Model, Syntactic Complexity, Syntactic Pattern Density, Word Information, and Word Readability. This information can then be saved in a user's files. A review of the literature demonstrated that Coh-Metrix has been validated as a tool to analyze writing. This review, as well as a review of the literature with L1, Generation 1.5, and L2 student writing and Coh-Metrix is provided in Chapter II. Chapter III includes the literature review of the influence of: (1) the number of years L2 and Generation 1.5 students have studied English in the U.S.; (2) age they began learning English (age of acquisition); and (3) parental level of education on syntactic and lexical complexity, as well as cohesion, on L1 and L2 writing. Chapter IV includes the literature review of the role of metacognition in student writing.

CHAPTER II

LEXICAL, SYNTACTIC, AND COHESION DIFFERENCES IN WRITING OF COMMUNITY COLLEGE STUDENTS

Writing competently is a challenge for all students. For college students, it is a critical skill regardless of chosen career path. In order to succeed in college, students should enter with the writing skills necessary to thrive in an academic setting, for nearly all courses require some form of writing. Yet, the most recent report of the National Association of Educational Progress (NAEP) revealed that 21% of twelfth grade students perform below the *Basic* level in writing, while 52% performed at the *Basic* level (National Center for Education Statistics, 2012). This indicates students who enroll in college or community college may be ill-prepared to meet college level academic standards in written assignments, affecting their success across all academic disciplines.

Writing and L1, L2, and Generation 1.5 Community College Students

Community college has become a viable choice for many students, functioning as the primary route to four year universities for over 40% of undergraduates in the U.S. (Jenkins & Fink, 2015). This population is increasingly affected by high school graduating classes as these classes have become more diverse throughout the U.S. By 2019-20, 45% of the nation's public high school graduates are projected to be non-White; for most states, high school graduates of Hispanic and Asian/Pacific Islander descent will increase in number while the number of White and African-American non-Hispanic students will decline ("Knocking at the College Door," 2013). Currently, approximately 50% Hispanic students, 31% African American students and 28% White

students start at the community college level (National Center for Public Policy and Higher Education, 2011). Approximately one percent of international students also begin their postsecondary careers at the community college level.

These population trends may well have an effect on academics in the community college, particularly in academic writing. The majority of English Language Learners (ELL) in the United States, Kindergarten through Grade 12, are Hispanic. The scores for average, proficient, and advanced writing for Grade 12 were higher for White students, Asian students, and students of two or more races than for African-American and Hispanic students (National Center for Education Statistics, 2012). Regardless of whether Hispanic students identify as ELL, they are outperformed by White, Asian, multiracial and African-American students in their writing.

In the United States, for Hispanics and others who have yet to develop proficiency in the English language, academic progress may be hampered on community college campuses where English is the primary language of instruction and expected in academic reading and writing. Writing, especially for the diverse student population at the community college level, clearly warrants attention in order to better guide instruction and assist students in achieving higher levels of proficient writing.

The current study explored the differences in syntactic, lexical and cohesive features of writing with three groups of student writers at the community college level, identified as English as a first or native language (L1), English as a Second Language (L2), or students known as Generation 1.5. Generally, the term L1 refers to one's native language or the primary language learned and used in the home. Students considered L1

are generally defined as those whose first language is English, learned from parents and/or other family members in the home. L2 is defined by Ferris, Brown, Liu, & Stine (2011) as students whose primary or first language (the language to which they were exposed at home) is not English and can include international students, late- and early arriving resident students and may be used synonymously with the terms *bilingual*, *ESL*, *multilingual*, and *Generation 1.5* (Ferris, 2009). L2 students in the current study are classified as those who do not regularly speak English in the home, have received four years or less of formal education in the United States, and did not graduate from a high school in the United States.

The term Generation 1.5, though modified throughout the years, was originally defined by Rumbaut and Ima (1988) to describe the children of immigrants who arrived in the U.S. at some point during their early school years, or were born here or a US territory and remained in linguistic and/or cultural enclaves, and who seem to have characteristics of both first- and second- generation immigrants. These students have completed most or all of their schooling in the U.S., yet may have a limited knowledge of academic English, speak two or more languages, and learned English primarily through speaking and listening and through cultural immersion in informal settings. This contrasts them with L2 learners who learn their second language primarily through reading and writing in a more formal classroom setting.

Generally, this group is thought of as United States-educated English language learners (ELLs) who vary greatly in terms of their prior educational experience, native and English language and culture proficiency, language dominance, and English reading

and writing competence (Harklau, 2003). Generation 1.5 students may not speak English at home with one or both parents, but are conversant socially and culturally in English. While the definition of this population and use of this definition may vary amongst scholars, the literature generally supports a distinction between these English language learners and those who speak English as a foreign language or L2.

In this study, Generation 1.5 participants have received formal education in the United States for more than four years (Doolan, 2013,2014), speak a language other than English at home (Doolan, 2011, 2013, 2014; Doolan & Miller, 2012; Mikesell, 2007), and graduated from a U.S. high school (di Gennaro, 2009; Patthey et al., 2009). L2 students have received four years or less of their formal education in the United States, contrasted with “less than four years” in previous studies (Doolan, 2013, 2014), and have not graduated from a high school in the U.S. Students considered L1 are those whose first language is English and have been educated and graduated high school in the U.S. There are existing sociocultural differences which can factor into the academic portrait of all three populations, however, those are outside the scope of this current study.

Writing as Process and Product

Writing is seen and evaluated as both process and product. One renowned model of writing as process by Hayes and Flower (1980) involves three basic parts: the writing task environment (i.e., topic, audience cues, task in process), the writer’s long-term memory (involving knowledge of topic and audience, plans), and the components of the writing process itself. The components of the writing process include planning, text

generation, or translation, and revising and can occur at any time during the writing process. Hayes and Flower proposed that writers have an internal monitor which helps to control the process. How well writers monitor their work is influenced by their understanding and knowledge of the writing process, which is stored in long-term memory. Expert writers are more adept at elaborating on their content throughout writing and revision while weaker writers tend to focus more on simple, concrete content goals and whether their writing is structurally sound.

Work by Berninger, Abbott, Whitaker, Sylvester, and Nolen (1995), and the simple view of writing by Berninger et al. (2002) added modifications to the Hayes and Flower model, addressing the contribution of individual differences and how these affect the translation process. Developing writers utilize transcription (handwriting, spelling, and keyboarding) and executive function (attention, planning, reviewing, and revising) to produce text with significant contribution from working memory. Individual differences at the word, sentence, and text production levels may affect the translation process of writing. A final revision by Hayes (2012) added the roles of motivation, working memory, transcription and transcription technology (handwriting and keyboarding).

With this goal of identifying a writer's needs as part of the instructional process, as well as recognition of the effect of individual differences on the translation process, the current study utilized the computational tool Coh-Metrix to assess community college students' writing through the analysis of linguistic features that characterize proficient writing (McNamara, Crossley, & McCarthy, 2010). These linguistic features

range from simple measures of the word count to more complex measures of assessing the level of intentionality, the use of intentional verbs and particles. In general, this type of analysis looks at features which characterize a higher quality writing sample.

Literature Review for L2

Although all three student groups may experience difficulties with academic writing, L2 and Generation 1.5 students are more likely to present significant differences in the linguistic features of writing when compared to native English language speakers, or L1. The majority of studies in the last few decades focused primarily on L2 writing features and compared them with L1 with varying results. It should be noted, however, some authors did not distinguish between L2 and Generation 1.5, and, therefore, the populations of some L2 studies may include what this study considers Generation 1.5.

The seminal work of Silva (1993) included a meta-analysis of 72 studies on L2 writing that revealed distinct differences between L1 and L2 writers in planning, setting goals, generating and organizing material; generally, their writing was less fluent, less effective, and less accurate. L2 writing characteristics have been found to include: longer clauses, less noun modification, limited lexical control and diversity, structural errors, and less focus on more global structures such as cohesion when revising (Raimes, 2001; Zamel, 1984). Hinkel (2004) noted L2 students at the college level avoided complex verb phrase constructions such as passive voice, perfect aspect or the modal verb *would*, but utilized the past tense more than L1 students. L2 writers' struggle with limited vocabulary and incomplete knowledge of language structures can make the writing task arduous.

The literature examining cohesive features (e.g., use of connectives, overlap of key words) of L2 writing has also revealed mixed results. Green, Christopher, and Mei (2000) found a correlation between cohesive devices and low proficiency writing, while others found no relationship between L2 writing proficiency and cohesive devices when comparing low, intermediate, and high proficiency writing (Castro, 2004). Studies of advanced L2 writers found more frequent use of cohesive devices and connectives when compared with intermediate level L2 writers (Ferris, 1994; Connor, 1990). Proficient L2 writers also demonstrated an increase in lexical and syntactic diversity. They used more words, words with more syllables or letters (Grant & Ginther, 2000) and more lexical diversity and sophistication (Engber, 1995; Ferris, 1994; Grant & Ginther, 2000). Proficient L2 writers also used more variety in syntactic structures such as more nominalizations (converting a verb or adjective into a noun), pronouns (i.e. “I”, “she”, “it”) and prepositions (i.e. “on”, “with”, “for”) (Connor, 1990; Reid, 1992; Crossley & McNamara, 2014). For example, the sentence “I denied the accusations” may be rated as having a more formal or sophisticated style than “I was accused of the crime and denied it” through the use of nominalization.

Studies involving Generation 1.5 writers during the last few decades are not as prevalent in the literature. Mikesell (2007) examined the similarities and differences in past participle usage and found little difference between the Generation 1.5 and the ESL groups. ESL students had more errors in linguistic context, principally with the passive voice, yet, fewer participial form errors; Generation 1.5 writers showed the opposite patterns. For example, ESL students would incorrectly use the passive voice in the

sentence “These are the most common sentences which heard in class”, whereas Generation 1.5 students would make more errors in participial form “They did not allowed her to stay after school” (Mikesell, 2007). Di Gennaro (2009) found Generation 1.5 students had better rhetorical control than L2 students and produced longer essays, but had more difficulty with content control, or how well ideas were developed in responses. A subsequent study found that L2 learners performed better than the Generation 1.5 learners, primarily in grammatical control (di Gennaro, 2013). L2 students found grammatical control easiest and cohesive control most difficult, while Generation 1.5 students found grammatical and rhetorical control among the most difficult, and sociopragmatic control the easiest (the ability to adopt a register and stance appropriate for an academic writing task). Doolan and Miller (2012) found the writing of Generation 1.5 contained significantly more errors than L1 writers in verb, prepositional phrases, word form, and total errors of all language variables.

Literature review of Coh-Metrix with L2, Generation 1.5

The computational online tool, Coh-Metrix, used in the current study to analyze students’ writings, has been employed in a number of studies to analyze and/or compare native English Language writers (L1), English as a Second Language (L2) or Foreign Language writers (FL), and Generation 1.5 writers. Coh-Metrix was created in 2002 at the University of Memphis. At the time, there was no one tool that could provide information on a variety of text features, such as word count, lexical diversity, cohesion, and syntactic complexity. Coh-Metrix is capable of producing 108 writing-related indices on a written text by combining tools and databases previously validated and

used in computational linguistics and natural language processing, or the ability of a computer to process human spoken language (McNamara, Graesser, McCarthy, & Cai, 2014). The measurement of cohesion was one of the central purposes behind the original creation of Coh-Metrix, though it is used to estimate a variety of linguistic features. A number of studies validate the ability of Coh-Metrix to process and analyze lexical diversity indices, cohesion and syntactic complexity in L2 reading texts, distinguish the linguistic features of L2 students' writing, and detect the differences in high and low cohesion texts (Crossley, Salsbury, & McNamara, 2012; McCarthy & Jarvis, 2010; McNamara, Louwrese, McCarthy, & Graesser, 2010; McNamara, Ozuru, Graesser, & Louwrese, 2006). Definitions and examples of the variables used in the current study can be accessed in Table 1.

Among the variables found to be most predictive of differentiating between L1 and L2, were the variables of hypernymy, argument overlap, word frequency, and polysemy (Crossley & McNamara, 2009). Results of the investigation with these variables validated the use of Coh-Metrix indices related to cohesion and lexical networks to differentiate between L1 and L2 written texts. The variables of lexical diversity, word frequency, word meaningfulness, and word familiarity were among variables found to significantly predict L2 writing proficiency, while measures of cohesion and linguistic sophistication were also capable of predicting evaluator's essay scores and ratings of L2 writing proficiency (Crossley & McNamara, 2012).

Coh-Metrix studies comparing L1 and L2 writing found L2 writing to be lower in lexical proficiency, variation and sophistication, less abstract, and use more high-

frequency words (Crossley & McNamara, 2009; Kormos, 2011); L1 writing revealed use of more cohesive devices (Crossley & McNamara, 2009). Green (2012) found L2 writers used more forms of argumentative and semantic overlap, more frequent content words, few abstract verb hyponyms and less causal content than the L1 writers. Ye (2013) compared Chinese and American science journal abstracts and found the abstracts written by Chinese scientists (L2) contained more cohesive devices and were more syntactically difficult, but used less abstract words than the American scientists' abstracts (L1). When comparing different levels of proficiency within groups of L2 writers, high-proficiency writers were found to have greater lexical diversity, more low-frequency words, less familiar words, fewer specific words, and used fewer cohesive devices; low-proficiency writers used more content word overlap and had higher scores of semantic similarity, or conceptual similarity, between words or entities (words, sentences, paragraphs) which may create more cohesion in the text (Crossley & McNamara, 2012; Crossley, Salsbury, & McNamara, 2012; Crossley, Salsbury, McNamara, & Jarvis, 2011).

Studies using Coh-Metrix to investigate the writing of Generation 1.5 students have used the tool in addition to other analyses. Doolan evaluated community college developmental writers and first year college students in a series of studies. No significant differences were found between L2 and Generation 1.5 students in holistic scores, vocabulary measures, and Coh-Metrix variables of cohesion, syntactic complexity, lexical sophistication, and fluency (2011). Later Doolan studies of L1, L2, and Generation 1.5 students' writing examined holistic writing quality, total errors, and

linguistic variables that included the Coh-Metrix variables of the combination of number of words, word length, prepositional phrases, and personal pronouns. Results indicated L1 and Generation 1.5 scored significantly higher in their holistic quality scores and number of words than L2 writers and that L2 writing was significantly different than both groups for word error, word class errors (for determiners and prepositional phrases) and total errors (Doolan, 2013, 2014).

Table 1

Coh-Matrix Variables Reported in the Study

Coh-Matrix Indices	Abbreviations	Descriptions	Examples
<u>Referential Cohesion Measures</u>			
Noun overlap in adjacent sentences and all sentences	CRFNO1 (local)	Noun in one sentence and same noun in adjacent sentence (local); overlap of each sentence with all (global)	A taco uses a fried tortilla shell. An enchilada uses a soft tortilla. (Repetition of the word “tortilla”)
	CRFNOa (all)		
Argument overlap, adjacent sentences and all sentences	CRFAO1 (local)	Similar to noun overlap, local and global, but includes overlap between sentences of nouns and pronouns, singular or plural.	Paul went for a long walk in the morning. He enjoyed taking walks. (Repetition of the word “walk”, “walks”)
	CRFAOa (all)		
<u>Lexical and Word Information Measures</u>			
Lexical Diversity	LDTTRa	TTR (Type-token ratio); the variety of words used, ratio of the number of unique words (types) to total number of words (token).	If number of word types equals total number of words, all words would be different.
Measure of Textual Lexical Diversity	MTLD	Mean length of sequential words strings	
Pronouns	WRDPRO	Pronoun incidence	Number of instances per 1,000 words in text.
Word Frequency, all words	WRDFRQa,	Measures how often particular words occur	Low frequency (rare) words can hamper comprehension
Familiarity, content words	WRDFAMc,	Rating of a word’s familiarity	“Horse”, “ball” rate highly; less familiar words rate lower.
Word Meaningfulness, content words	WRDMEAc,	Rating of the meaningfulness of a word.	“Leader”(higher meaningfulness) versus “demagogue”
Word Polysemy, content words	WRDPOLc	Number of meanings or senses of a word	Multiple meanings of “run” (highly polysemous)
Word Hypernymy, nouns and verbs	WRDHYPnv	Measures the specificity or abstractness of a word.	“Computer” is more specific; device is a hypernym for computer
<u>Syntactic Complexity and Pattern Density</u>			
Left embeddedness, words before main verb,	SYNLE	Mean number of words before the main verb	“Therefore, under the law, anyone age eighteen is...”
Modifiers in a noun phrase	SYNNP	Average number of modifiers per noun phrase,	That dog, our dog
Noun phrase density	DRNP	Incidence of noun phrases	(see above);
Verb Phrase density	DRVP	Incidence of verb phrases	e.g., “Waiting for his grades (verbal phrase) made him

Note: Definitions adapted from McNamara et al. (2014)

Current Investigation

The purpose of the current investigation is to use Coh-Metrix to explore textual differences in the writing of L1, L2, and Generation 1.5 community college students, particularly those differences related to the lexical, cohesive, and syntactic features of proficient writing. Proficient writing includes the ability to demonstrate clear coherence, skilful use of language with varied, accurate, and appropriate vocabulary, variety in sentence structure, and absence of most errors in grammar, usage, and mechanics (College Board, 2012). Complex syntax, greater lexical diversity, and few high frequent words may also be reflective of more sophisticated, skilled language production. (Crossley & McNamara, 2009). Proficient writing skills aid community college students' mastery of course content, further their content learning, and increase the likelihood of graduation. To date, few studies have simultaneously examined L1, L2, and Generation 1.5 community college students' writing using Coh Metrix.

This study focuses on the Coh-Metrix writing characteristics of referential cohesion, lexical diversity, word information, syntactic complexity, and syntactic pattern density. Lexical diversity was measured by (a) type-token ratio (TTR) for all words and refers to the variety of unique words, or types, that occur in a text in relation to the total number of words, or tokens, and (b) the mean length of sequential words strings that maintain a given TTR value (McNamara et al., 2014). Although studies have validated several Coh-Metrix indices, of particular interest to this study are the variables known to demonstrate those characteristics and/or those which have been used to examine the

differences between L1 and L2 groups. The Coh-Metrix variable of word count was also used, but only in order to eliminate samples with low word counts.

The questions addressed in this study are:

1. What are the lexical, syntactic, and cohesion differences associated with proficient writing found in L1, L2, and Generation 1.5 community college students' writing?
2. Do these textual differences of Generation 1.5, L1 and L2 writers show characteristics of proficient writing as found in previous studies using Coh-Metrix?

Method

Participants

Participants were recruited from 15 classes in the disciplines of Child Development and Teacher Education at a large community college in the Southwestern United States. This population consists of L1, L2, and Generation 1.5 students, enrolled in courses requiring college-level academic writing skills, and most of whom currently work or plan to work with young children in child care centers or with students at the elementary, middle, and secondary schools.

Materials and Procedure

Data collection took place during the 2014-2015 school year and involved one set of materials and uniform procedures designed for use during class time. Writing samples, normally collected by the discipline's instructors at the beginning of the semester, were provided by participants as part of a one-hour, in-class assignment, along with a brief biographical survey. An explanation of the study, directions, the survey, and the writing assignment prompt was read aloud by the researcher or class teacher, using a

script; this was available simultaneously to students in written form. The participants wrote their responses to the question prompt below, on paper provided by the researcher.

“Imagine you were giving a speech to your class and the professor about a teacher who made the biggest impact in your life, any grade K- community college. Include the following information in your answer: Why did you choose this person? Describe what they did to make a difference in your life. Describe what was memorable about this teacher. How might this teacher influence you as a potential teacher?”

The written narrative is an important and frequently used genre for English language teaching, composition classes, and in foreign language assessments. The narrative prompt in this study was designed to solicit participants to write freely, and in greater length, about a topic with which they were familiar, completed in class to fully ascertain that each student’s written sample was original. No supplemental writing aids were allowed. The script included the directive: “Please take your time and write your best answers”.

Participants were also administered a biographical survey to solicit additional information and determine students’ classification as L1, L2, and Generation 1.5. The survey, which can be accessed in the Appendix, is adapted from Doolan (2011, 2013) and was used to determine: (1) the number of years of formal education received in the United States; (2) graduation from high school in the United States; and (3) English or other language spoken regularly in childhood home. If students answered “yes” to the survey question #4, “In the home where you spent most of your childhood, did you

regularly speak English?”, they were classified as L1, directed to skip questions 5- 9, and resumed the survey by answering questions 10-12.

Those students who answered “no” to question #4 answered all survey questions. This answer, along with number of years of education in the U.S. and graduation from a U.S. high school, were used as the primary distinctions between L2 and Generation 1.5 students, similar to Doolan (2011, 2013). In the current study, Generation 1.5 and L2 students were further distinguished from each other by the fact that Generation 1.5 students had received more than 4 years of education (most had received 10 years) and had graduated from a high school in the U.S. L2 students lived in the United States for less than four years and did not graduate from a U.S. high school. A total of 314 surveys and samples were collected; only those with more than 170 words were utilized for this study, resulting in a total of 251 writing samples: L1= 146 participants, L2 =33 participants, and G1.5 = 72 participants.

After classification of all surveys into L1, L2, and Generation 1.5 their corresponding samples were examined for spelling errors, typed into Word documents, and entered individually in the online tool, Coh-Metrix, for analysis. Coh-Metrix is capable of producing 108 writing-related indices on a sample of written text and is available for the public to use, online, free of charge (available at <http://tool.cohmetrix.com>). The number of initial written samples collected was 341, with 17 Coh-Metrix variables chosen for analysis with these samples. Previous Coh-Metrix studies, in which timed, in-class student essays were used, included samples with either no minimum word count or a count of 120 words minimum. The word count goal

for the current study, given the time constraints, was at least 200 words per sample, which was not attained by all L2 students. Writing samples of L2 students demonstrated lower word counts and samples with too few words, for example less than 100, may not represent a cohesive piece of work nor provide confidence in the analysis (McNamara et al., 2014). Therefore, a minimum of 170 words was used allowing more L2 writing samples to be retained while keeping the word count as close as possible to 200. Upon eliminating samples below 170 words, the number of samples was 251.

Results

Our hypotheses were that there would be significant differences for all three Coh-Metrix measures, lexical, syntactic, and cohesive, in the writings of L1, L2, and Generation 1.5 community. Specifically, L1 students' writing would show significant differences when compared with both L2 and Generation 1.5, while comparisons between L2 and Generation 1.5 would not show significant differences. Additionally, we hypothesized that L1 students would demonstrate the largest number of proficient writing characteristics, while comparisons of Generation 1.5 and L2 students' writing would not demonstrate significant differences in proficient writing characteristics.

Prior to conducting a multivariate analysis of variance (MANOVA), significant outliers in all data sets were removed and all scores converted to z-scores. Additionally, there were no violations of the homoscedasticity assumption using Box' *M* to test the equality of covariance matrices of dependent variables across groups. Due to the meeting of this assumption, Wilks' Λ was used in all analyses to evaluate MANOVA F-tests. The variable of high frequency words (WRDFRQc) was highly correlated with the

high frequency word count and the count for word familiarity (WRDFRQa and WRDFAMc) and, therefore, was removed from the analysis.

Lexical Measures

Descriptive statistics for lexical measures are located in Table 2. Language group differences were investigated with MANOVA on a linear combination of nine variables related to lexical diversity and word information. The Wilk's $\Lambda = 0.748$, $F(18, 476) = 3.428$, $p < .001$, partial eta squared = 0.26). These results indicated a large shared effect between the language groups and the set of nine lexical measures and that the means of linear combinations of the nine continuous variables were significantly different across the three language groups, confirming the hypothesis that there were significant differences between the three language groups.

Table 2

Descriptive Statistics of Lexical Measures, Z and Raw Scores (N= 251)

Measure	Minimum		Maximum		Mean		SD	
	Z	Raw	Z	Raw	Z	Raw	Z	Raw
LDMTLD	2.440	36.652	3.142	118.356	.000	72.371	1.000	14.635
LDTTRa	2.271	.386	2.379	.636	.000	.508	1.000	.054
WRDCNC	2.605	315.07	4.307	420.230	.000	354.704	1.000	15.212
WRDFAM	3.058	570.15	2.626	597.26	.000	584.737	1.000	4.768
WRDFRQa	3.135	2.886	2.329	3.300	.000	3.124	1.000	.076
WRDFRQc	3.341	2.15	2.759	2.91	.000	2.563	1.000	.125
WRDHYnv	2.699	1.083	4.217	2.343	.000	1.575	1.000	.182
WRDMEA	2.160	406.424	4.739	490.394	.000	432.716	1.000	12.169
WRDPOLc	2.664	3.303	3.332	5.968	.000	4.487	1.000	.444
WRDPRO	2.882	76.9	2.558	232.804	.000	159.514	1.000	28.649

An analysis of variance (ANOVA) on the dependent Coh-Metrix variables was conducted as a follow-up test to the MANOVA, $p < .05$. Only four of nine lexical variables indicated significant language group differences: two variables of lexical diversity and two variables of word information, word familiarity and word polysemy (words with more than one sense or meaning). The partial eta-squared effect sizes ranged from 0.05 for word familiarity to 0.07 for word polysemy.

Table 3 shows the means and confidence intervals (CI) for L1, L2, and Generation 1.5 for each of the four dependent variables. The CIs are fairly distinct among the three language groups, which have significant effects. We chose not to assume that variances were homogeneous and conducted post-hoc comparisons on pairs

of means with Tukey's Honest Significant Difference (HSD) test, a test that does not assume equal variances among the three groups. Results showed that the mean scores for one lexical diversity measure, LDTTRa, varied significantly between L1 and G1.5, but no differences were found between L1 and L2 or L2 and L3; L1 students tended to use more diverse vocabulary in their writing, compared to Generation 1.5 students, with a moderate effect size ($d = 0.54$).

L1 students also outperformed both L2 and G1.5 students in the other measure of lexical diversity (LDMTLD), with a moderate to large effect size ($d=.78$) for L1 vs. L2, and a small to moderate effect size ($d= .33$) for L1 vs. G1.5. These findings coincide with a characteristic of proficient writing, diverse vocabulary, and indicate that L1 students use a more diverse vocabulary than the other 2 student groups.

Results from word information measures demonstrated that L1 students scored lower than Generation 1.5 on content word familiarity measures, with a moderate effect size ($d= -0.46$), meaning they used fewer words rated as familiar than Generation 1.5 students, another characteristic of proficient writing; L1 students also tended to use more polysemous words (words which may have more than one meaning, such as "mean" or "run") in their writing, compared with L2 students, revealing a moderate to large effect size ($d =0.64$). Polysemous words are associated with more high frequency words and use of multiple word senses, and may be seen as a characteristic of proficient writing. These results confirmed the hypotheses that L1 students' writing would show significant differences when compared with both L2 and Generation 1.5, and that L2 and Generation 1.5 students' writing, when compared with each other, would not show

significant differences. Additionally, L1 students demonstrated the largest number of proficient writing characteristics when compared with Generation 1.5 and L2 students; Generation 1.5 and L2 students did not demonstrate significant differences in terms of proficient writing characteristics.

Table 3

Tukey's Honestly Significant Difference (HSD) Comparison Between Variables

<u>Comparisons</u> <u>Between Variables</u>		<u>Mean Difference</u>	<u>SE</u>	<u>95% CI</u>	
				<u>Lower Bound</u>	<u>Upper Bound</u>
LDTTR:	L1 – L2	.25	.19	-.21	.71
	L1- Gen. 1.5	.53*	.14	.20	.86
	Gen. 1.5- L2	-.28	.21	-.77	.21
LDTMD:	L1 – L2	.75*	.19	.29	1.20
	L1- Gen. 1.5	.33*	.14	.00	.66
	Gen. 1.5- L2	-.41	.21	-.07	.91
WRDFAM:	L1 – L2	-.40	.19	-.86	.06
	L1- Gen. 1.5	-.47*	.14	-.80	-.13
	Gen. 1.5- L2	.07	.21	-.43	.56
WRDPOLc	L1 – L2	.66*	.19	.20	1.11
	L1- Gen. 1.5	.23	.14	-.10	.56
	Gen. 1.5- L2	.43	.21	-.06	.93

Based on observed means.

The error term is Mean Square (Error) = .978

*The mean difference is significant at the .05 level

Cohesion Measures

No overall group effect was found for cohesion measures across L1, L2, and Generation 1.5 students. This did not confirm any of the hypotheses for cohesion measures across language groups in terms of proficient writing characteristics.

Syntactic Measures

Descriptive statistics for syntactic measures are located in Table 4. Language group differences were investigated using a MANOVA with a linear combination of four variables related to syntactic complexity and pattern density. The results indicated a significant effect for syntactic variables across language groups, with a moderate effect size, Wilk's $\Lambda = 0.857$, $F(8, 484) = 4.868$, $p < .001$, partial eta-squared is 0.15.

Table 4

Descriptive Statistics of Syntactic Measures, Z and Raw Scores (N= 251)

Measure	Minimum		Maximum		Mean		SD	
	Z	Raw	Z	Raw	Z	Raw	Z	Raw
DRNP	-2.25	303.63	4.06	468.208	.000	362.36	1.000	26.06
DRVP	-2.70	170.33	2.75	338.03	.000	253.32	1.000	30.78
SYNLE	-1.25	1.62	2.27	15.80	.000	3.59	1.000	1.56
SYNNP	-2.56	.30	3.41	1.07	.000	.64	1.000	.12

An ANOVA for the dependent variables was conducted as a follow-up test to the MANOVA, each at the .05 significance level. Two of four syntactic complexity measures indicated significant language group differences: the mean number of words before the main verb, or left-embeddedness (SYNLE), and the mean number of modifiers per noun phrase (SYNNP).

Table 5 shows the means and confidence intervals for L1, L2, and Generation 1.5 for each of the four syntactic variables. The CIs are fairly distinct among the three

language groups, which have significant effects. A post-hoc analysis consisted of conducting pairwise comparisons to find which group membership most affected the Coh-Metrix results, using Tukey's Honest Significant Difference (HSD) test. Results showed that Generation 1.5 students demonstrated more syntactic complexity, left-embeddedness, than L1, with a moderate effect size ($d = -0.56$) and more than L2 students, with a moderate to large effect size ($d = -0.75$). L1 students demonstrated more syntactic pattern density in the form of noun phrases than Generation 1.5 with a small to moderate effect size ($d = 0.37$). These results did not confirm the hypothesis that L2 and Generation 1.5 students would not demonstrate differences in the syntactic measures; Generation 1.5 demonstrated significant differences when compared with both L1 and L2 in the syntactic variable of number of words before the main verb, which may demonstrate proficient writing.

The hypothesis that L1 students would show significant differences when compared with both L2 and Generation 1.5 was true for the syntactic variable of the measure of modifiers in a noun phrase, which may demonstrate proficient writing; Generation 1.5 and L2 students did demonstrate significant differences in this measure.

Table 5

Tukey's HSD Comparison Between Variables

			95% CI		
<u>Comparisons Between Variables</u>	<u>Mean Difference</u>	<u>SE</u>	<u>Lower Bound</u>	<u>Upper Bound</u>	
SYNLE:	L1 – L2	.17	.19	-.21	.71
	L1- Gen. 1.5	-.41*	.14	.20	.86
	Gen. 1.5- L2	.59*	.21	-.77	.21
SYNNP:	L1 – L2	.34	.19	.29	1.20
	L1- Gen. 1.5	.37*	.14	.00	.66
	Gen. 1.5- L2	-.03	.21	-.07	.91

Based on observed means.

The error term is Mean Square (Error) = .989

*The mean difference is significant at the .05 level

Discussion

The purpose of this study was to examine the writing of L1, L2, and Generation 1.5 community college students and, in particular, the syntactic, lexical and cohesion characteristics associated with proficient writing and to compare these results with previous studies using the Coh-Metrix tool.

Lexical Measures

In the area of lexical characteristics, the measures of lexical diversity and word information were examined. Nine variables were significantly different across the three language groups, with a large shared effect between the language groups and the set of nine lexical measures. Four of nine lexical measures indicated significant language group differences: two lexical diversity measures and two word information measures (word familiarity and word polysemy). Results indicated that L1 students were more lexically diverse when compared with Generation 1.5 students with one lexical diversity measure (TTR) variable, and with both Generation 1.5 and L2 when using another

lexical diversity measure, the mean length of sequential words strings variable (MTLD). For L1 writers, these findings may indicate their use of more diverse vocabulary than the other two groups, a characteristic indicative of proficient writing. This accords with previous research which showed greater lexical diversity in writing of L1 students when compared with L2 (Crossley & McNamara, 2009; Kormos, 2011); although, the literature shows lexical diversity is a characteristic of both proficient L1 and L2 writers (Crossley et al, 2011, Crossley et al., 2012, Crossley & McNamara, 2012; McNamara et al., 2010).

Results from word information measures demonstrated that L1 students used words rated less familiar than words than Generation 1.5 students, a characteristic also associated with proficient writing and lexical sophistication in both L1 and L2 (Crossley et al., 2011; Crossley & McNamara, 2012; McNamara et al., 2010). By contrast, a study by Crossley and McNamara (2011) found L1 essays contained more familiar words than L2 essays. L1 students also had a tendency to use more polysemous words than L2 students, in agreement with studies that found that L1 writers used significantly more words with multiple meanings than L2 writers of English (Crossley and McNamara 2009, 2011). As L2 writers became more proficient, their use of polysemous words increased, and polysemous words may also be indicative of more ambiguity and specificity in a text (Crossley, Weston, Sullivan, & McNamara, 2011).

Cohesion Measures

While the current study found no overall group effect for cohesion measures across L1, L2, and Generation 1.5 students, research findings in this area remain varied.

One study comparing the writing of L1 and L2 students found that L1 writers used significantly more cohesive devices than L2 writers (Crossley & McNamara, 2009); others have found cohesion unrelated to essay quality in L1 college freshman students and that college students' essays used fewer cohesion cues when compared to high school students (Crossley et al., 2011; McNamara et al., 2010;). Similarly, in a study with L2 student essays, those rated as more proficient demonstrated lower cohesion (Crossley & McNamara, 2012) and used more argument overlap than L1 writers (Green, 2012).

Syntactic Measures

Of the four syntactic variables analyzed, two examined syntactic complexity and two examined the pattern of syntactic density. Results indicated the means of these four syntactic variables were significantly different across language groups. Of these four, the two syntactic complexity variables indicated significant language group differences. Complex syntax is generally thought to represent more sophisticated, skilled language production in the proficient writing of both L1 and L2 students (Crossley et al., 2011; McNamara et al., 2010). The current study found Generation 1.5 students had more syntactic complexity than both L1 and L2 students in the measure of words before the main verb, whereas Crossley and McNamara (2011) found L1 essays contained sentences with significantly more words before the main verb than L2 essays. It may also be that sentence quality and sentence complexity are independent of each other and more complexity may not equal better or clearer writing (Beers & Nagy, 2009).

In a different variable of syntactic complexity, L1 writers had a higher average of number of modifiers per noun phrase when compared to Generation 1.5 students; no difference was noted when compared with L2 writers, or between G1.5 and L2 writers. Previous studies have indicated that the numbers of modifiers per noun phrase increased for proficient L1 writers (Crossley et al., 2010, Crossley et al., 2011). When compared to other studies of L1, L2, and Generation 1.5 using different Coh-Metrix with non Coh-Metrix variables, this study yielded interesting contrasts. For example, Doolan (2013) found only the Coh-Metrix variable of word count demonstrated significant differences between L1 and L2 and Generation 1.5 and L2 First Year Composition students and no significant differences with Coh-Metrix linguistic variables with developmental students (2014).

Overall, the current study did not find numerous significant differences between the writing characteristics of L2 and Generation 1.5 students. More significant differences were found between L1 and Generation 1.5 than between L1 and L2, or between Generation 1.5 and L2. In sum, of the six significant Coh-Metrix measures reported, five measures indicated significant differences between L1 and Generation 1.5 (two measures of lexical diversity and word information, and one syntactic complexity), two measures indicated significant differences between L1 and L2 (word diversity and polysemy) and only one measure (syntactic complexity, number of words before the main verb) showed a significant difference between Generation 1.5 and L2. These differences are displayed in Table 6.

Table 6

Summary of Study Findings

Coh-Matrix Measure	Variable	Current Study
Lexical	Type-token ratio, all words	L1* > Gen 1.5
	Lexical Diversity, all words	L1*> Gen. 1.5 L1*> L2
Word Information	Familiarity for content words	L1* < Gen 1.5
	Word polysemy	L1* > L2
Syntactic Complexity and Pattern Density	Words before main verb	Gen. 1.5* >L1 Gen 1.5* > L2
	Modifiers per noun phrase	L1* >Gen. 1.5
Cohesive Devices, Referential	Noun overlap, adjacent and all sentences	No significant group effects
	Argument overlap, adjacent and all sentences	No significant group effects

*Indicates result characteristic of more proficient writing

Explanations behind these results are not straightforward. It is quite possible that a “Common Underlying Proficiency” (CUP), in which cognitive and academic proficiency in the L1 maintains this same proficiency in the L2 (Cummins, 2000), may explain why L2 is not significantly different than Generation 1.5 in English language learning. The L2 students in this study may be able to take advantage of their L1 proficiency in learning English as their second language.

It is quite possible that all community college writers, regardless of language group, are still refining their writing skills and that L1 students may not differ significantly from L2 or Generation 1.5, as one might expect. The writing proficiency

levels of students who enter community college and first year composition classes, based on either admission tests or completion of developmental writing courses, may vary widely. Furthermore, the quality of English writing instruction received by L1 or Generation 1.5 students in this country may be equal to or less than the quality of English writing instruction received by L2 students in their own country, whether the instruction is in English and/or using their native language. The English writing instruction received by these groups of students may also differ in areas of emphasis and practice. There is no way to compare this in the current study.

Additionally, results from Generation 1.5 students may be attributable to learning English primarily through speaking and listening. If these students are accustomed to being understood in the second language when speaking, they may not be as conscious of or concerned with grammatical structures. Additionally, a number of syntactic structures in the past tense are easily unheard or misheard in spoken discourse; for example, the past participle phonemes /d/ and /t/. This means Generation 1.5 students may not be learning those structures or may be learning them incorrectly. They may also be influenced by the orthography and syntactic structures of their L1; for the majority of the Generation 1.5 students in this study, the L1 was Spanish. Di Gennaro (2013) noted that Generation 1.5 learners' success in spoken contexts may interfere with their success in written contexts, given that comprehension in the spoken context is not dependent upon correct grammar usage when compared with the written context.

Generation 1.5 students may also be relying on their experiences in spoken discourse for their written discourse. This may explain the limited lexical diversity

results found in the current study. It is also conceivable that the students in this study equated a narrative prompt with narrative spoken discourse and Generation 1.5 students have either not received specific instruction regarding difference in writing in the narrative genre, or perhaps not fully acquired this knowledge. Their L2 counterparts, however, have likely received a good deal of their English language instruction in formal classroom settings and do not rely upon their limited experience with spoken discourse in written discourse.

The fact that no cohesion differences were found amongst the three language groups may be indicative of the fact previously mentioned: either many community college students, regardless of language grouping, are still refining their writing skills and may be at an equal skill level in the area of cohesiveness. It is possible, too, that the Coh-Metrix tool did not distinguish the differences.

Limitations

One limitation of this study is that the number of second language participants was lower than expected, with 33 L2 participants as compared to 146 L1 and 72 Generation 1.5 participants. There were 16 different languages documented among the L2 students, with nearly 1/3 of the students declaring Vietnamese as their first language. The syntactic, lexical, cohesion, and orthographic features of the Vietnamese language may have accounted for the variations seen in syntax and lexical measures amongst all groups. Additionally, all participants were Child Development and Teacher Education majors, and mostly female, meaning these results are not generalizable to the community college population at large. Within the community college population, there can be a

wide array of educational experiences and skill levels in any given discipline, to include writing. It is difficult to ascertain if the non-developmental students in this study are significantly different than developmental students, who require diagnostic assessment, educational programs, and support services to prepare them for college level work. A narrative writing prompt was used in the hopes that students would write more freely and produce more words, yet a different prompt may have produced different findings for all groups. Finally, Coh-Metrix uses frequency or incidence counts for many of the variables used. Although this provides information as to how often a linguistic characteristic or form is used, it does not tell us how it is used or if it is used well in the written work.

Future Research and Pedagogical Implications

A clear advantage to Coh-Metrix is the use of automation to report on linguistic indices. Many of these indices can be measured neither quickly nor objectively by human raters. Coh-Metrix can identify differences in the use of linguistic features between groups and provide information on students' writing characteristics. Future research should investigate the qualitative characteristics of all three community college language groups to provide more in-depth information on how they use various linguistic features in their writing and examine these similarities and differences. Additionally, a further examination of the sociocultural characteristics of the different language groups within the L2 group could provide interesting insights into their similarities and differences and the influence on English writing characteristics.

Findings from the current study can be used to guide and inform writing instruction and assessment with L1, L2, and Generation 1.5 students at the community college level. Community college instructors, regardless of discipline area, may be better able to objectively identify the differences in students' writing and problem areas.

Students can also use this information to identify and monitor their own strengths and weaknesses in terms of characteristics of proficient writing, and modify their writing accordingly (McNamara, Crossley, & Roscoe, 2013). Use of explicit writing instruction, consistent feedback, and continuous assessment have demonstrated L2 first year college writers can progress significantly over the course of a semester (Aryadoust, 2014). In particular, participants in this study, as potential future educators, must acquire adequate writing skills to successfully complete their undergraduate education programs, pass the writing portion of the teacher certification exam, write for professional purposes, and develop an understanding of the components of proficient writing for instruction and modeling with their future students. A report from the National Commission on Writing in America's Schools and Colleges (2006) included the recommendation that "All prospective teachers, no matter their discipline, should be provided with courses in how to teach writing" and "...writing instruction in college and universities should be improved for all students" (pp. 49-50).

The information provided by the Coh-Metrix tool can be used to identify how L1, Generation 1.5 and L2 writing differs at the community college level to better tailor instruction and subsequent feedback. Coh-Metrix could be used for baseline information and monitoring. This information, then, would assist instructors in examining the

competence of writers of all language groups prior to simply expecting them to comprehend and compose content at an academic level. The goal at the community college level is not only to improve student learning during the two-year college experience, but, to potentially prepare them for matriculation to four year institutions. It is incumbent upon instructors to be well-prepared and be able to provide effective assessment, instruction, and feedback for an increasingly diverse population of student writers.

CHAPTER III

FACTORS INFLUENCING THE WRITING OF L2 AND GENERATION 1.5

COMMUNITY COLLEGE STUDENTS

In the United States (U.S.), an increase in the number of immigrants during the past several decades, whose native language is not English, has led to a heightened interest in the acquisition and proficiency of English as a Second Language (ESL) learners, also known as English Language Learners (ELLs). English language literacy in the U.S. is fundamental to educational success and advancement given that English is the dominant language of instruction. Teachers in Kindergarten through Grade 12 and post-secondary institutions should be cognizant of the factors that impact second language literacy achievement. In learning English as a second language, or in some cases as a third or fourth language, students' language learning is often influenced by background variables such as the proficiency levels in the first languages they speak, the degree of fluency in English they currently hold (if any), cultural and socio-economic factors, as well as prior educational experience and age in which they began to acquire the second language.

ESL students may be comprised of two groups: second language (L2) and Generation 1.5 students. L2 students are defined by Ferris, Brown, Liu, & Stine (2011) as students whose primary or first language (the language to which they were exposed at home) is not English and can include international students, late- and early arriving resident students and may be used synonymously with the terms *bilingual*, *ESL*, *multilingual*, and *Generation 1.5* (Ferris, 2009). The term Generation 1.5, though

modified throughout the years, was originally defined by Rumbaut and Ima (1988) to describe the children of immigrants who arrived in the U.S. at some point during their early school years, or were born here or a US territory and remained in linguistic and/or cultural enclaves, and who seem to have characteristics of both first- and second-generation immigrants. These students, also known as U.S.-educated multilingual students, have completed most or all of their schooling in the U.S. yet may have a limited knowledge of academic English, speak two or more languages, and often learned English primarily through speaking and listening and through cultural immersion in informal settings. Generation 1.5 students may not speak English at home with either parent, but are conversant socially in English. This contrasts them with L2 learners who learn their second language primarily through reading and writing in a more formal classroom setting, in the U.S. or in another country. Generally, Generation 1.5 is thought of as United States-educated ELLs who may vary greatly in terms of their prior educational experience, native and English language and culture proficiency, language dominance, and English reading and writing competence (Harklau, 2003).

While the literature generally supports a distinction between Generation 1.5 and L2 English language learners, most studies broadly address second language learners' skills demonstrating significant differences in English language literacy and, in particular, in written language skills in terms of syntax, vocabulary, and cohesiveness (Hinkel, 2004; Silva, 1993). Some non-native English speakers, particularly Generation 1.5, may be fluent in everyday spoken English, yet have not developed the corresponding academic language proficiency (CALP) that requires proficiency in

speaking, reading, writing, and listening skills, and the ability to communicate in a range of academic disciplines (Singhal, 2004). Estimates that 1 in 4 students will be ELLs by the year 2025 implies the number of ELL postsecondary students is also likely to increase (Ragan & Jones, 2013). Yet, only one in eight ELLs, followed from age 13- 26 years in the National Educational Longitudinal Study, 1988 (NELS:88), earned a bachelor's degree, compared with one in four English-proficient linguistic minority students and one in three monolingual English speakers who were able to earn a bachelor's degree (Kanno & Crowley, 2013). Many ELLs who start their college careers at the community college level do not reach regular college-level courses outside of the ESL program (Razfar & Simon, 2011). At the community college level, in order to complete a two year degree, and conceivably matriculate to a four year university, students must demonstrate proficiency in academic reading and writing. Thus far, there has been little progress for ELLs in the post-secondary U.S. educational system.

Academic proficiency with written language is challenging for both non-native and native speakers, with 21% of twelfth grade U.S. students scoring below the *Basic* level and 52% at the Basic level in the National Association of Educational Progress (NAEP) writing assessment (National Center for Education Statistics, 2012). Students at the Basic level of writing have partial mastery of the prerequisite knowledge and skills required to produce proficient work for their grade level. For example, students at Grade 12 would be able to present ideas relevant to the topic, use appropriate supporting detail, remain mostly focused on the topic with some evidence of appropriate thinking, and demonstrate some variety in sentence structure, yet with a few distracting errors. Test

results are only one facet of academic achievement. Twelfth-graders who reported higher levels of parental education had higher average writing scores on the NAEP (2011) than those who reported lower levels. Those whose parents graduated from college scored higher, on average, than those whose parents had only some education after high school and this group, in turn, scored higher than the group whose parents had no education after high school (National Center for Education Statistics, 2011).

The NAEP results (2011) also revealed that students who use a computer more frequently to edit their writing scored higher; in fact, frequency of computer use to edit papers varied by level of parental education. Students of parents who are college graduates always or almost always used a computer to edit their writing, more than students whose parents had lower levels of education. Studies have continually demonstrated background factors such as parental education, socio-economic status (SES), individual learner characteristics, age of acquisition of the second language (AOA) and educational experiences intervene with second language academic achievement and proficiency levels, in both oral and written language (Birdsong, 2006). Few studies have focused on non-developmental community college students and how these factors impact their English language writing proficiency. The current study will address the impact of age of acquisition (AOA), maternal and paternal education levels, and number of years of education in the United States on the lexical, syntactic, and cohesion characteristics of ESL community college students' writing.

Age

In the current literature, age is expressed as the age at onset of acquisition (AOA) of the second language and is measured either by an immigrant's age of arrival or, less often, by one's age when beginning formal instruction in the second language. AOA is considered an important factor for the acquisition of new skills, particularly in the domain of language (Hernandez & Li, 2007). A review of the research regarding AOA is often accompanied by a discussion of the Critical Period Hypothesis (CPH) which proposes that there is a biologically-based critical period for second language learning, determined by one's age (Hakuta, Bialystok, & Wiley, 2003). The literature contains no consensus on the age at which this critical period concludes, with studies indicating the range may be from 5 to 15 years (Cummins, 2000; Johnson & Newport, 1989; Krashen, 1973); it may also be referred to as the sensitive period (Oyama, 1976). Granena and Long (2012) identified off-sets (the end of sensitive periods where success in L2 learning rates decline) for phonology as ages 6 to 12, followed by vocabulary and collocations (two or more words that are commonly used together, such as "make" and "bed", or "do" and "homework") between ages 6 to 9 through 12, and morphology and syntax (word meaning and grammatical structure), from ages 6 through mid-teens. Evidence that supports the Critical Period Hypothesis demonstrates that second language learning success, measured via oral speech and/or grammatical judgment tasks, declines as age of initial exposure increases (Bialystok & Miller, 1999; Birdsong & Molis, 2001; Jia & Fuse, 2007; Johnson, 1992; Johnson & Newport, 1989; Oyama, 1976; Patkowski, 1980). Research specifically focused on grammar, morphology, and syntax showed this same

decline in success with increased age of initial exposure (Birdsong and Molis, 2001; DeKeyser, Alfi-Shabtay, & Ravid, 2010; Jia & Fuse, 2002; Patkowski 1980).

AOA can be confounded, though, by factors such as quantity and quality of output, amount and quality of practice, and motivation. Starting age for L2 did not predict outcome on L2 proficiency tests, when amount of L2 input and age of testing were controlled (Munóz, 2011). Haim (2014) examined the contribution of several factors to second and third language (L3) learning, Hebrew and English respectively, of Russian immigrants in Israel and found gender, age of onset, AOA (defined in this study as age at time of immigration), current language use, parental aspirations, L3 writing ability and studying L1 at school significantly predicted academic proficiency (AP) performance in L2. Only AOA, current language use, and L2 writing predicted L3. Gender and earlier AOA predicted all AP performance in L2 (reading and writing) while SES predicted L3 writing performance. Writing ability in L1 was a significant predictor of reading and writing in both L2 and L3, with all background variables controlled. Age at onset was a better predictor of AP performance than AOA for L3, which appeared to indicate these two variables cannot be used interchangeably (Haim, 2014).

Alternatively, studies have demonstrated no general decline in second language acquisition ability with age (Bialystock & Miller, 1999) and, with a decline with age in general, no evidence of change in language learning potential was found at the ages of 15 and 20 years (Hakuta, Bialystok, and Wiley, 2003). Quite possibly, older learners may have a faster rate of learning at the beginning of the L2 learning, supporting the theory of “Common Underlying Proficiency” (CUP) in which cognitive and academic

proficiency in the L1 maintains this same proficiency in the L2 (Cummins, 2000). Cummins (1981) found that older learners progress at almost the same rate as younger learners, with the exception of the age group from 8-9 years, though it takes an average of five years for children who arrived after age 6 to approach grade norm in L2. An older arrival age of students (over age 14), with an underlying level of L1 proficiency and a high SES, has been shown to predict overall L2 achievement. The older arrivals performed better than the 12 to 14 year olds, although they had the lowest vocabulary level of all groups (Roessingh, 2008). The 12 to 14 year old group appeared to *have* no advantage from either their L1 or L2 to help them with exam scores. Additional ESL support with a strong vocabulary focus made a difference for all ages of arrival (Roessingh, 2008).

Length of Residency/Number of Years of English Studied in the U.S.

Few studies have focused on the number of years of English studied in the U.S.; much of the literature focuses on length of residency (LOR) and/or hours of instruction as influential to L2 learning, alongside factors such as age. The studies reviewed included only those where LOR was equated with number of years or hours of English studied in the U.S. and/or other countries and languages. Much of the literature has suggested an advantage for L2 learners' LOR. Collier (1987, 1995) and Cummins (1981) reported estimates of up to 4 to 7 years for proficiency in academic English. Collier (1987) assessed three different age groups of middle-upper class students after four years of residency in the U.S. All had received some ESL instruction until teachers determined they were ready for mainstream academic work, after approximately 2-3

years. Her findings suggested that it may require 4-8 years for all L2 students, regardless of age, to reach national grade-level norms in all subject areas of standardized tests. Students who arrived in the U.S. between the ages of 5-7 (who also had received the least amount of L1 schooling) tested below their predicted level of achievement in reading, language arts, social studies, science, and math; students who had arrived at ages T achieved at a higher rate in all these subjects. This later group achieved at a faster rate than the other 2 groups, yet only at an achievement score of 50% for most subjects.

Students whose age of arrival was 12-15, however, presented a bleaker picture after an LOR of 4 years, testing below the national norms in all achievement areas except math. This group had great difficulty acquiring the L2 for academic learning. Collier believed possible contributory factors to be the greater demands at the secondary level with limited length of time to learn the L2 to meet those more difficult demands and a threshold of at least 2 years of education in the L1 for the most prompt results in achieving academic language proficiency (1987). These findings support those of Cummins (1981) who demonstrated that the effects of LOR may decrease after 5 years, suggesting that the critical age of arrival may be 12 years of age or younger. After this, the advantage of CUP may diminish.

Length of residency studies significantly related to students' vocabulary development and significantly predict English derivational awareness in Spanish and Chinese speaking Canadian ELLs, Grades 4 and 7 (Chen, Geva, & Schwartz, 2012; Ramirez, Chen, Geva, and Luo, 2010). A study of the long-term effects of onset of L2,

in a school setting and age, on writing achievement demonstrated that after 200 and 416 hours of instruction, learners who had started instruction at the age of 11 scored significantly higher on the writing measures than those who began at the age of 8 (Navés, Torras, and Celaya, 2003). The later starters significantly outperformed the early starters in three areas of writing (accuracy, fluency and lexical complexity) and in most measurements of syntactic complexity. Early starters did not surpass late starters even after 726 hours of instruction in the school setting.

Studies with undergraduates and adults yielded different results. Starting age in undergraduates, studying the L2 of English, with ten or more years of education (mean length of exposure to English was 13.9 years or 2,400 hours), was not found to be predictive of long-term L2 attainment (Munóz, 2011). Similar number of years of education and AOA demonstrated no effect on adults' high level of bilingual proficiency, whereas intensive use of both the L1 and L2 was significant (de Carli et al., 2015). By contrast, Larson-Hall (2008) reported some advantage for undergraduates who were early school starters, on grammatical judgment tasks, when instructional input reached 1,600 hours.

Parental Education

Parental education, along with the variables of parental income and occupations, is often considered a component of SES in the research. Studies indicate that low SES is typically associated with lower levels of language proficiency for all children and that children's lexical development is augmented by higher SES (Hart & Risley, 1992). Level of parental education often represents and/or directly influences parental

intelligence, which likely influences children's cognitive advancement through quality of schooling received, home environment, SES, and genetic makeup (Bacharach & Baumeister, 1998). Preschool variables that have been found to be significantly associated with writing proficiency include mother's educational level, family size, parental assessment of writing, and a measure of home writing, with mother's educational level significantly related to writing achievement at 5 years (Dunsmuir & Blatchford, 2004). Parental education level has also been found to directly influence the number of books at home, impacting students' writing ability, ages 9-14, in grammar, number of infrequent words, and orthography (Rindermann, Michou, & Thompson, 2011).

Research has also found positive correlations between the educational level of parents and children's intelligence and verbal ability, with parental linguistic input as the intervening variable (Hart & Risley, 1992; Hoff, 2003). Onset of a second language, at an older age, in addition to higher levels of mother's education have been associated with faster growth in children's English lexical development (Goldberg, Paradis, & Crago, 2008). Studies that have examined both family income and parental education show relationships between these factors and performance on the combined Standardized Achievement Test (SAT), including verbal and math scores (Hannon, 2015; Zwick, Brown, & Sklar, 2004; Zwick & Green, 2007). For Hispanic students, the lower the family income and/or parental education, the lower the SAT performance.

When accounting for mitigating variables, studies have shown no significant parental education effect. A study of German 6th-grade immigrant bilinguals and

monolinguals found bilingual ability was positively associated with achievement in English as a foreign language when socio-economic status, parental education, social assets, general cognitive abilities, age and gender were comparable (Maluch, Kempert, Neumann, & Stanat, 2015). An analysis of 11,000 fifth grade students showed no disparities in academic achievement between Hispanics/Latinos and their white classmates for reading, writing and math, and fewer disparities in science achievement when confounding variables were controlled, including the language spoken at home, parental expectations for the child, and mother's education (Taningco & Pachon, 2008). Parental education had no impact beyond explicit teaching for reading and writing using science texts (Purcell-Gates, Duke, & Martineau, 2007). In fact, children from low-parental education home had comparable growth rates in reading comprehension and writing with the high-parental education homes. The effect of low parental education was seen only at the beginning of instruction, and was unrelated to growth when students received equivalent instruction.

Current Investigation

The literature thus far has established that age of second language acquisition, parental levels of education, and length of residency/years of education are all influential with regards to students' levels of academic achievement as well as language proficiency in a second language. Few studies have targeted postsecondary students, and non-developmental community college students in particular, and the biographical characteristics that may influence their writing ability in a second language. Given an increasing ESL population in the U.S. and the expectation of academic language

proficiency in English at the postsecondary level, the aim of the current study is to investigate characteristics that contribute to ESL student writing, which, in turn, may help focus writing instruction for these students.

The question used to guide this investigation was:

What was the influence of: the number of years L2 and Generation 1.5 students have studied English in the United States; the age they began learning English, or AOA; and paternal and maternal levels of education on students' writing.

Students' writing samples, each with at least 170 words, were evaluated for the Coh-Metrix cohesion, lexical, and syntactic variables. The hypothesis was that all factors would be influential, to some extent, on students' writing and mostly in the area of lexical and syntactic measures.

Method

Participants

Participants were recruited from 15 classes in the disciplines of Child Development and Teacher Education at a large community college in the Southwestern United States. This population consists of L1, L2, and Generation 1.5 students, enrolled in courses requiring college-level academic writing skills, most of whom currently work or plan to work with young children in child care centers or with students at the elementary, middle, and secondary schools. L2 students in the current study are classified as those who do not regularly speak English at home, have received four years or less of formal education in the United States, and graduated from a high school outside the United States. Generation 1.5 participants in this study also do not regularly

speak English at home, have received formal education in the United States for more than four years (Doolan, 2013, 2014), speak a language other than English at home (Doolan, 2011, 2013, 2014; Doolan & Miller, 2012; Mikesell, 2007), and graduated from a U.S. high school (di Gennaro, 2009; Patthey et al., 2009). Students considered L1 are those whose first language is English, received their education and graduated from high school in the U.S.

Materials and Procedure

Data collection took place during the school year and involved one set of materials and uniform procedures designed for use during class time. Writing samples, normally collected by the disciplines' instructors at the beginning of the semester, were provided by participants as part of a one-hour, in-class assignment, along with a completed, brief biographical survey. An explanation of the study, directions, the survey, and the writing assignment prompt were read aloud by the researcher or class teacher using a script; this was available simultaneously to students in written form. The participants wrote their responses to the narrative prompt on paper.

The biographical survey administered to participants was designed to solicit additional background information and determine students' classification as L1, L2, and Generation 1.5. The survey, adapted from Doolan (2011, 2013), was used to determine: (1) the number of years of formal education received in the United States; (2) graduation from high school in the United States; and (3) English or other language spoken regularly in the childhood home. If students answered "yes" to survey question #4, "In the home where you spent most of your childhood, did you regularly speak English?"

they were classified as L1, skipped questions 5- 9, and resumed the survey by answering questions 10-12 (see Appendix A).

Those students who answered “no” to question #4 answered all survey questions. This answer, along with number of years of education in the U.S. and graduation from a U.S. high school, were used to mark the primary distinctions between the ESL L2 and Generation 1.5 students, similar to Doolan (2011, 2013). The term ESL is used in the current study, rather than the term ELLs, because the U.S. Office of Education Office of Civil Rights glossary defines ELL as “A national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits” (English language learners glossary, 2005); ESL is a term used to describe a program of instruction designed to teach ELLs. At the community college level, ESL students are likely those still learning the language, whether formally or informally, may or may not be enrolled in ESL classes, and represent a variety of English proficiency levels. Participants in the current study are not limited in English proficiency (the definition of ELLs) to the extent it would preclude them from academic level courses. The words “limited-English proficient” can be interpreted broadly and denote a lower level of proficiency than the population in the current study. English as a Second Language, formerly used to designate ELL students, increasingly refers to a program of instruction designed to support the ELL. It is still used to refer to multilingual students in higher education and in much of the literature reviewed for the current study (*A Nation*, 2008). The terms ELL and ESL are used by

the National Center for Education Statistics (NCES), though ESL is seen mostly in reference to adults.

A total of 105 surveys and samples were collected from the ESL students; only the surveys which accompanied writing samples of more than 170 words were utilized for this study, resulting in a L2 = 33 participants, and Generation 1.5 = 72 participants. During the statistical analysis, two samples were removed as outliers bringing the total number of participants to 103. With regards to the survey questions, question 8, which asked “If English is not your first language, how old were you when you started learning English?” was designed to solicit age of onset of acquisition (AOA), which can include both informal (in home and/or environment) and formal language learning (school or adult education classes). The community college population completing the survey included students who may have learned from one parent who speaks English, in an English as a Foreign Language class in a country outside the U.S., and/or began learning English in a childcare setting prior to formal school instruction. Question 6, “What is the total number of years you studied English in the U.S.?” was designed to specifically target more formal English language instruction, specifically in a U.S. instructional setting. The use of parental education level as opposed to socioeconomic status, used in a number of studies, was intentional with this particular population. Both L2 and Generation 1.5 students may have parents who were well-educated in their countries, but may live in low socio-economic circumstances in this country due to lack of reciprocal certifications or licensing, language barriers, work visa limitations, and/or immigration status.

Results

A principal components analysis was used to identify a smaller number of underlying combinations of the dependent variables to help explain relationships in the data. Two criteria were used to determine the number of factors to rotate: the scree plot and eigenvalues greater than one. Six factors were rotated using a Varimax with Kaiser Normalization rotation procedure. Eigenvalues indicated that the first three factors explained 18%, 15%, and 14% of the variance, with the fourth, fifth, and sixth accounting for another 24 % of the variance. Six factors in total accounted for 71% of the variance. Descriptive statistics for the predictor variables are found in Table 7, while results of the factor analysis are found in Table 8.

Table 7

Means and Standard Deviations for Predictor Variables (N= 103)

Predictor Variables	M	SD
Age beg 0-3	.14	.34
Age beg 3-5	.24	.43
Age beg 5-8	.18	.39
Age beg 8-16	.36	.48
Age beg 17 +	.08	.27
Dad Educ 0- Grade school	.35	.48
Dad Educ Some H/S	.18	.38
Dad Educ GradH/S	.20	.40
Dad Educ Vo/tech- 2 yr AA	.15	.35
Dad Educ Bachelors	.06	.24
Dad Educ Grad	.06	.24
Mom Educ 0- Grade school	.36	.48
Mom Educ Some H/S	.17	.37
Mom Educ GradH/S	.23	.42
Mom Educ Vo/tech- 2 yr AA	.10	.30
Mom Educ Bachelors	.12	.32
Mom Educ Grad	.03	.17
Yrs Eng in US 0	.06	.24
Yrs Eng in US 1-2	.16	.36
Yrs Eng in US 3-4	.16	.36
Yrs Eng in US more than 4	.63	.49

Table 8

Factor Loadings of Confirmatory Factor Analysis with Varimax Rotation of Cohesion, Lexical, and Syntactic Variables

<u>Items</u>	<u>Factors</u>					
	<u>Cohesion</u>	<u>Lexical Diversity</u>	<u>Noun Phrases</u>	<u>Word Information</u>	<u>Syntactic Density</u>	<u>Syntactic Complexity</u>
Noun Overlap (local)	.62		.51			
Argument Overlap (local)	.87					
Noun Overlap (all)	.66		.53			
Argument Overlap (all)	.91					
Content Word Overlap (all)	.83	.381				
Semantic Overlap	.305	.71				
Lexical Diversity (TTR)		-.75				
Lexical Diversity (MTLD)	-.311	-.65				
Connectives (all)						.708
Syntactic (Left-embed.)	.38					.615
Noun Phrase Density			.81		.851	
Verb Phrase Density					-.681	
Pronoun Incidence	.40		-.77			
Word Frequency (all)		.77				
Word Familiarity		.62	-.38			
Word Concreteness				.815		
Word Meaning				.896		
Word Polysemy				.384		.48
Word Hypernymy			.68	.311	.358	

Note: Factor loadings > .40 appear are in boldface.

A hierarchical multiple regression analysis was conducted to investigate the relative contribution of the background variables of Parental Education Level, Years of English (studied) in the U.S., and AOA to the prediction of students' writing characteristics. Prior to conducting the analysis, two outliers were removed from the data set, an examination of scatter plots indicated the assumptions of normality, linearity, and homoscedasticity were all met and it was determined that no independent variables were highly correlated. Table 9 shows results of the hierarchical regression.

A three-stage hierarchical multiple regression was conducted. The variable of AOA was entered at stage one, the variables of Maternal Education Level and Paternal Education Level were entered in stage two, and the variable of Years of English Studied in U.S. was entered at stage three. AOA was entered at stage one to control for the effects of age one began learning English; Parental Education Levels were entered next as predictor variables and together because they often yield similar results. Years of English in the U.S. was entered last as there have been few studies focused on this variable as distinct from LOR.

Results revealed that at stage one, AOA, age 0-3 years, contributed significantly to the variable of Syntactic Pattern Density $R^2 = .10$, adjusted $R^2 = .06$, $F(4, 102) = 2.58$, $p < .05$, with this change accounting for 10 % of the variation in Syntactic Pattern Density, and a medium effect size of $R^2 = .10$. The addition of Maternal Education Level and Paternal Education Level at stage two, and Years of English in the U.S. at stage three, did not significantly predict over and above the AOA. No other dependent variables displayed significant results

Table 9

*Summary of Hierarchical Regression Analysis for Variables
Predicting Syntactic Pattern Density
(N= 103)*

<u>Predictor Variables</u>	<u>Syntactic Pattern Density</u>	
	<u>ΔR^2</u>	<u>β</u>
Step 1: Age of Acquisition	.10*	
Age 0-3		.26*
Age 3-5		-.10
Age 5-8		-.04
Age 17 +		-.03
Step 2: Father Education	.13	
Some High School		-.22
High School Degree		.13
Vocational- Associates Degree		.02
Bachelor's Degree		-.04
Graduate Degree		-.13
Step 2: Mother Education		
Some High School		.31
High School Degree		.12
Vocational- Associates Degree		-.01
Bachelor's Degree		.19
Graduate Degree		.08
Step 3: Yrs. English Studied in the United States	.02	
0		-.05
1-2		.06
3-4		-.14

Note: N= 103; $p^* < .05$

Discussion

The results of this investigation demonstrated that for Generation 1.5 and L2 students at the community college level, AOA, particularly age 0-3 years, was the most influential contributor to students' writing. Maternal and Paternal Education levels and number of Years of English studied in the U.S. had no significant impact beyond the effects of AOA. Specifically, AOA influenced Syntactic Pattern Density, which includes noun phrase density and verb phrase density. Results demonstrated the use of more noun phrases increased while the use of verb phrases decreased, considered an indicator of more proficient writing (Crossley & McNamara, 2014; Parkinson & Musgrave, 2014). The literature has established AOA as an influential factor in the domain of language (Hernandez & Li, 2007) and the results of the current study are comparable to Haim's work (2014) which found that AOA predicted academic proficiency in L2 reading and writing.

The predictor variables of Parental Education Levels were found to have no on influence Syntactic Pattern Density, similar to previous work which found no difference in academic achievement between Hispanics/Latinos and their white elementary school classmates when controlling for a variety of variables, including language spoken at home and maternal education levels (Taningco & Pachon, 2008). Parental education level also demonstrated no impact, beyond explicit teaching, on growth rates in reading and writing for elementary aged children (Purcell-Gates, Duke, & Martineau, 2007). The fact that there were no significant effects of Years of English in the U.S. is also of

interest for the current study population. Sixty-three percent of respondents had more than four years of English studied in the U.S., yet this did not appear to sway their syntactic patterns, in terms of use of noun and verb phrases. Ten or more years of education was not found to be predictive of long-term L2 attainment (Munóz, 2011) and similar number of years of education (16.2), along with AOA, demonstrated no effect on adults' high level of bilingual proficiency (de Carli et al., 2015). Although Larson-Hall (2008) reported some advantage for undergraduates who were early school starters, the current study did not.

Limitations

In addition to the limited size and convenience of the sample collected, there remain several unknowns regarding these data. First, the quality and precise quantity, as well as continuity of the English as second language instruction, is unknown for the participants in this study. The literature informs us that both these factors can affect the acquisition of the L2 and levels of proficiency; however, the results of this study are neither definitive nor are they generalizable.

In the current study, the question "How old were you when you started English?" was meant to include both informal and formal English language learning; however, some participants may have answered from an informal language learning perspective, some from a formal learning perspective, which may have skewed answers to this question.

Future Research and Pedagogical Implications

Future research should consider the inclusion of more detailed survey questions to determine type of setting, quantity, and quality of interactions in which English language learning took place, as well as the number of years of ESL or bilingual education in the U.S., and English as a Foreign Language instruction in other countries. It is possible that an underdeveloped L2 writing schema may affect both text translation at the process level, as well as knowledge held in long-term memory at the resource level, depicted in Hayes' revised model of writing (2012). An inadequate amount of L2 input may result in insufficient L2 knowledge, essential for text generation in that language. Age of acquisition is a viable consideration when looking at the long term effects of second language learning. Although the late starter was shown to be a quick learner in some studies, a number of studies have also shown instructor proficiency and quality instruction to be strong predictors of foreign language learning (Maluch et al., 2015). In attempting to improve written English language instruction, investigating learners' profiles may better help instructors understand all factors which contribute to a student's L2 acquisition as well as to make recommendations regarding L2 acquisition. Additionally, if a L2 student is a first-generation college student, whose parents have not attended college and may have a low level of education, this circumstance should be identified at the community college level in order to provide the necessary academic and social support.

The number of years of English studied in the U.S. appeared to have no impact on students' writing; this factor may be closely associated with quality and quantity of

English instruction received in the U.S. and worthy of further investigation. At the instructional level, how do we measure quantity and quality of English and English writing instruction? We might ask how we can build on this potential classroom-level advantage by ensuring instructor quality and language competence and helping students monitor and improve their writing skills. Our public school systems employ a number of ESL and bilingual programs, but it is yet unclear how the number of years spent in these programs are benefitting students and how the programs and students are best monitored. Furthermore, “graduating” from these programs may not indicate that students are fully prepared and academically proficient in the L2, without ongoing support, at all levels of education.

With regards to educational policy, the continued development of academic proficiency in ESL students’ languages has been associated with enhanced metalinguistic, academic, and cognitive functioning in the primary language. (Cummins, 2000). It may be worthwhile to assess all ESL students in their primary language skills, regardless of their ESL status, to better understand their second language skills. This is particularly applicable at the community college, where many ESL students are beginning their college education and academic proficiency in the L2 is requisite. Developing writing ability in the L1, shown to be a significant predictor of reading and writing in both L2 and L3 (Haim, 2014), should be considered for late arrivals or struggling L2 students at the secondary level. ESL programs at community colleges may also need to participate alongside more freshman English courses. Other program considerations may be English for Academic Purposes (EAP) or English for Specific

Purposes programs, which help students learn some of the linguistic and cultural practices involved in studying through English and could serve as a segue to freshman English. English proficiency, in both writing and reading, is central to college success and increasing this proficiency for second language learners' success in the U.S. should be a priority for all community college instructors.

CHAPTER IV

COMMUNITY COLLEGE WRITERS: WHAT WERE THEY THINKING?

The need to acquire academic literacy skills, and writing in particular, has become a priority for Kindergarten through Grade 12 in the United States (U.S.). Results from the National Writing Commission (2006) survey demonstrated that deans, administrators, and writing counselors at four-year public colleges and universities were concerned with students' inability to produce good writing defined by "clarity, accuracy and logical thinking" (*Writing and School Reform*, 2006). The most recent report of the National Association of Educational Progress (NAEP) revealed that 21% of twelfth grade students perform below the *Basic* level in writing, while 52% performed at the Basic level (NAEP, 2011). Students at the Basic level of writing have partial mastery of the prerequisite knowledge and skills required to produce proficient work for their grade level. For example, students at Grade 12 would be able to present ideas relevant to the topic, use appropriate supporting detail, remain mostly focused on the topic with some evidence of appropriate thinking, and demonstrate some variety in sentence structure, yet with a few distracting errors. Results such as these indicate that high school students who plan to enroll or are enrolled, in college or community college, may be ill-prepared to meet academic standards in written assignments, affecting retention and success across all academic disciplines.

Students entering community college may seek a two year credential, increased job opportunities, or matriculate to a four year institution; yet, poor writing skills may hinder college entrance or limit employment options and earnings potential. Proficient

writing skills aid community college students' mastery of course content, further their content learning, and increase the likelihood of graduation. Those who are enrolled in the disciplines of Teacher Education and Child Development classes at the community college level pursue preschool teaching positions or Teacher Education degrees at four year institutions, where college-level academic standards in writing are expected. In order to become a certified teacher in most states, college graduates must pass a teacher certification exam requiring reading, writing, and math proficiency. Once in the classroom, a teacher who is proficient in writing is more likely to positively impact writing instruction with their future students. To be a proficient writer, however, one must understand the characteristics of effective writing and the process involved.

Defining the Characteristics of Proficient Writing and the Writing Process

Proficient writing at its highest level, defined by the College Board SAT Scoring Guide:

Effectively and insightfully develops a point of view on the issue and demonstrates outstanding critical thinking, using clearly appropriate examples, reasons, and other evidence to support its position; is well organized and clearly focused, demonstrating clear coherence and smooth progression of ideas; exhibits skillful use of language, using a varied, accurate, and apt vocabulary; Demonstrates meaningful variety in sentence structure and; is free of most errors in grammar, usage, and mechanics. (para. 2)

Similar proficiency characteristics are found in the Test of English as a Foreign Language (TOEFL) Paper-Based Text Writing and Structure guidelines (2014) and the

American College Testing (ACT) guidelines (2006). The Writing Assessment Framework (NAEP, 2011) evaluates students' writing in the following areas: Development of Ideas (development of ideas, details and examples), Organization of Ideas (structure, coherence, focus), and Language Facility and Conventions (sentence structure, word choice, voice, and grammar). Clearly, writing is a complex task that necessitates an understanding of mechanics, organization, purpose, audience, genre-specific requirements, as well as fluent language generation and knowledge of subject matter (Chenoweth & Hayes, 2001; Hyland, 2007; Kellogg, 1994; McCutchen, 2000; Wong, 1999). Skilled writers must also recognize how to prioritize and execute these tasks. Knowledge of one's cognitive processes is known as metacognitive knowledge; for writing, this involves knowledge or awareness of purpose, process, and self-regulation.

Metacognition has an important role in the writing process and in models of writing. The current investigation viewed students' writing as it relates to three prominent models. The first model, Hayes and Flower (1980), is based on the analyses of cognitive processes engaged during writing and maintains that writing is a goal-directed, non-linear process requiring numerous mental operations and demands of the writer. Their model is comprised of three main components: the task environment, which are factors outside of the writer that can influence the process such as knowledge of the assignment, audience orientation, and motivation; the writer's long-term memory, where the writer's topic knowledge, audience awareness, and plans are stored; and the cognitive processes, or the role of planning, translating, and reviewing during the writing

process which are controlled by the individual. The original cognitive processes were modified by Hayes (1996) into categories of reflection, text production, and text interpretation and placed further attention on motivation, audience, the writing context, and long-term and working memory.

The second model, with a more development perspective, is that of Scardamalia and Bereiter (1987) in which writing is viewed in two ways: knowledge telling and knowledge transfer. Knowledge telling is germane to beginning writers as they practice retrieving knowledge from long-term memory and conveying it (“telling”) through writing; advanced writers engage in more knowledge transformation where knowledge is retrieved and then transformed, using the writer’s knowledge of a given writing task or the writing problem to be solved. It is likely that postsecondary writers are found at this stage, for most are continuing to refine their writing skills and develop strategies. In the third model, Kellogg (2008) extends writing beyond knowledge transformation to the concept of knowledge crafting. It is here the writer attends more to the balance between text, audience, and author’s knowledge. This final phase applies primarily to expert adult writers and, according to Kellogg, is normally found in writers beyond their twenties.

Another model of import is the “simple view of writing” by Berninger et al. (2002). This model proposes that transcription (handwriting, keyboarding, and spelling) and executive function (planning, monitoring, reviewing, revising, organizing, and attending) combine to produce text within the context of working memory. If writers have neither the syntactic and lexical knowledge of a language nor metacognitive

writing strategies readily available in working memory, text translation and transcription may be hindered.

As writers develop proficiency, their metacognitive knowledge and skills change and develop. For example, younger beginning writers plan, reflect, and revise at a more basic level before starting the writing task, focusing on learning to write letters, to spell, and create short texts, when compared to older expert writers (Graham & Harris, 2000). By fourth grade, their writing becomes a way of learning about a topic (Berninger, Abbott, Whitaker, Sylvester, & Nolen, 1995). Hence, students learn to write, then, begin using writing to learn. As they become more proficient, writers increase their skill with such metacognitive self-regulation practices as planning, drafting, revising, and editing, whereas less proficient writers lack such metacognitive knowledge and focus more on form, such as mechanics, than on function, such as purpose and substance (Lin, Monroe, & Troia, 2007; Saddler and Graham, 2007).

In a number of studies, metacognitive variables have been found to explain differences between low- and high-skilled writing students (Breetvelt, van den Bergh, & Rijlaarsdam, 1994; Kaufer, Hayes, & Flower, 1986; Perin, Keselman, & Monopoli, 2003). Schoonen and de Glopper (1996) examined the writing knowledge and performance of three groups of ninth-graders (low, average, and proficient) by asking students to describe to younger peers what good writing entails. The proficient writers focused more of their advice on organization and less on lower-order aspects of writing, such as mechanics. The less proficient writers focused their advice primarily on surface-level features such as spelling, punctuation, and grammar.

Studies at the postsecondary level have also examined metacognitive knowledge of the writing process and product. Beach (1976) examined undergraduate pre-service English teachers, classifying them as either extensive revisers or non-extensive revisers. The extensive revisers expected that their revisions would make a significant difference in the substance of the first draft and viewed their revisions more holistically, generalizing revisions across drafts. In contrast, the non-extensive revisers made minor revisions to form and individual sentences and viewed each draft as a separate text. The extensive revisers viewed their initial draft with the goal of later modification, delaying orientation towards audience; the non-extensive revisers viewed the original draft as needing little revision, merely refining words and mechanics, and were more oriented towards audience at the beginning. Sommers (1980) found that college freshmen comprehended the revision process as fixing errors rather than an opportunity to re-work content, whereas more advanced writers viewed revising as an opportunity to discover content, refine their argument, and change meaning, supporting the view that revision is a constant process that takes place throughout one's writing. Faigley and Witte's work (1981) noted that advanced students and experienced adult writers made more revisions to meaning.

Studies which examined planning and use of other strategies (note-taking, revising) found successful writers used several planning strategies throughout the writing process, and that their conceptualization of the writing process and the type and purpose of the strategies influenced writing quality (Campbell, Smith, & Brooker, 1998; Mahalski, 1992). For example, students who composed one or more drafts were more

knowledgeable about the topic of their writing and were more successful writers (Albin, Benton, & Khramtsova, 1996; Mahalski, 1992; Norton, 1990). An orientation towards audience and use of revising and reviewing were positively correlated with writing performance in college undergraduates (Sanders-Reio, Alexander, Reio, & Newman, 2014). Clearly, many aspects of metacognition in writing have a demonstrable role in proficient writing. Given the ongoing concerns of postsecondary writing skills and effective writing in academic settings, an important area of investigation is student's metacognitive knowledge of writing at the community college level and, in particular, those who endeavor to become future educators. The aim of the current study was to uncover what community college students understand about the characteristics of proficient writing and the writing process.

Current Study

The current study examined community college students' knowledge about how to write, referred to as discourse knowledge (McCutchen, 1986). Discourse knowledge is defined in two ways: declarative knowledge of writing, the writer's knowledge of self, the task, and the strategies, and procedural knowledge, the knowledge necessary to carry out the procedure or the process of writing (McCormick, 2003). Within these two types of knowledge, writers employ both substantive (the process in writing) and production (the form of writing) procedures. Studies with elementary and middle school age students have shown the importance of substantive and production procedures in successful writing (McCutchen, 1986; Olinghouse & Graham, 2009; Saddler & Graham, 2007) and that stronger writers are more knowledgeable about the substantive aspects of

writing than struggling writers (Graham, Schwartz, & MacArthur, 1993; Lin et al., 2007; Saddler & Graham, 2007; Wong, Wong, & Blenkinsop, 1989).

Research Question

The following research question guided this study:

Do community college students appear to understand what constitutes proficient writing? (For this study, the word “effective” was substituted for “proficient” in the student’s survey questions, as it was believed to be a more familiar word than “proficient” for students.)

We hypothesized that community college students may lack a thorough understanding of what effective writers do and what constitutes effective writing. In order to test this hypothesis, two open-response questions were given to students as part of an in-class writing assignment, to qualitatively assess students’ knowledge about proficient writing. The two questions used were initially designed by Graham, Schwartz, and MacArthur, (1993) and similar to those used in previous studies to examine the writing knowledge of elementary students (Graham et al.,1993; Olinghouse & Graham, 2009; Zumbrun & Bruning, 2012).The purpose behind using the open-response format was to gather a wide range of responses and solicit students’ ideas without the limitation of preset categories. A description of the data collection procedure follows.

Method

Participants

Participants were recruited from 15 classes in the disciplines of Child Development and Teacher Education at a large community college in the Southwestern

United States. This was a largely female population enrolled in courses requiring college-level academic writing skills, many of whom worked or plan to work with young children in childcare centers or plan to become teachers at the elementary, middle, and secondary levels.

Materials and Procedure

Data collection took place during the school year and involved one set of materials and uniform procedures for use during class time. Writing samples, collected by the discipline's instructors at the beginning of the semester, were required as part of a one-hour, in-class assignment; the two open-response questions were added to this assignment. An explanation of the study and consent form, directions, the writing prompt, and the questions were read aloud by the researcher or class teacher, using a script, and all items were available simultaneously to students in written form.

Participants wrote their responses to the two open-response questions on paper provided by the researcher. Question 1 was designed to elicit procedural knowledge about the process of writing; question 2 was designed to elicit declarative knowledge of the characteristics of effective writing.

Participant Questions:

1. What do effective writers do when they write?
2. Suppose you were the teacher of this class today and a student asked you 'What is effective writing?' what would you tell that student about effective writing?

The responses varied in length and content and all were individually read. Each response was divided into idea units which are specific unique ideas within each

student's response (Graham et al., 1993). For example, "Effective writing is how to write down your ideas or answers to a question in the best way possible" was equal to one idea unit, Writing and Drafting. The response "In other words, it's worked on and revised writing that has taken time and not just put together in the last minute" was divided into two idea units: (a) Reviewing, Evaluating, and Revising, and (b) Time and Effort. In some cases, a student expanded upon an idea unit but without adding any additional information; therefore, this was not scored as a new idea. For example, the response "It's a way to keep your paper in a structural mode rather than jumping from one idea to the next and then back to the same idea" was scored as a single idea unit. This scoring system was based on those developed and used by Graham et al. (1993) and used by Olinghouse and Graham (2009).

As themes emerged from the idea units, a list of themes was created. One additional trained rater per question independently read a random sampling of responses, created themes, and compared their themes with those of the primary researcher. The themes were then refined and developed into categories. For the purposes of comparison and reporting, the themes were classified into the categories of substantive and productions procedures, used by Graham et al. (1993), seen in Table 10. Students' responses in the current study necessitated the addition of "Purpose" under goal setting/planning and "Audience" under Writing and Drafting. The category of "Other" was assigned to responses that could not be classified in one of the other categories, such as responses related to characteristics of a story or feelings about writing.

Table 10

Categories for Question Responses

Category	Definition/Example
I. Production Procedures	Responses referring to the written product
Grammar and Spelling	“...proper formatting and grammar”; “using correct spelling and grammar”
II. Substantive Procedures	Responses referring to the writing process
Information Generation	Responses referring to brainstorming and information/notes gathered beforehand
Research	“...well thought-out, researched”; “I think effective writers do research. Gather as much material as needed”
Goal Setting/Planning	Responses referring to arrangement of content or establishing goals
Purpose	“...every time they write, their purpose should be strong and clear”
Planning and Organizing	“Map out writing”; “Multiple processes you can use to organize your information, such as outlines”
Thoughts	
Writing and Drafting	Responses referring to the act of writing
Clarity and Focus	“Be clear on what you are saying”; “Focus on one point at a time”; “...should flow from one topic to another”
Audience	“...and good writers engage the audience”; “think about who the reader is going to be”
Expression of Thoughts and Emotions	“It’s all about expressing how you feel”
Details and Descriptions	“They gather ideas first, get details second...”
Time and Effort	“This may take a lot of time and effort in reading, writing, editing”
Reviewing, Evaluating, Revising, Re-read	Responses referring the process of revising
III. Other	Responses unrelated to questions and not scored

Note. Categories adapted from Graham et al., 1993

A training session for a set of twenty-five responses, chosen at random, was completed to ascertain each rater was in agreement with the interpretation of the codes. When raters disagreed on a code, reasons for their disagreements were discussed and rectified, identifying and correcting any discrepancies. The reasons for the discrepancies included problems such as unclear category definitions or varying perspectives on the classification of an idea unit. Two raters were used for each question. Upon completion of coding all idea units, inter-rater reliability was established using Cohen's kappa to increase confidence in the coding results and to determine raters continued to correctly interpret the coding system. The kappa coefficient was a value of .90 for Question 1 and Question 2, indicating a high level of inter-rater agreement.

Results

Procedural Knowledge

The question "What do effective writers do when they write?" sought information on students' procedural knowledge, which is the knowledge of how to write or the process of writing. Responses were categorized as either substantive factors that involved the process of writing, or as production factors that focused more on mechanical processes such as spelling and grammar. Results showed that the majority of the responses, 91%, were classified as Substantive Procedures while a mere 3% were considered Production Procedures. The category of "other" contained 5% of the responses and included idea units such as "love writing", "highlights", and "reads context clues". Within Substantive Procedures, responses were categorized as Goal

Setting/Planning (26%) which included the subset of Purpose (12%), followed by Writing and Drafting (30%) and the subset of Audience (7%), and finally, Reviewing and Revising (14%). Production Procedures (3%) were mainly responses that discussed Grammar and/or Spelling corrections (see Table 11).

Table 11

Response Frequency for Question 1: Procedural Knowledge

Response Category	Frequency	Percentage
I. Production Procedures		
Grammar and Spelling	18	3
II. Substantive Procedures		
Information Generation	2	.6
Research	9	2
Goal Setting/Planning	135	26
Purpose	57	12
Writing/Drafting	162	30
Audience	50	7
Revising, Review, Editing	70	14
III. Other	23	5

N (number of response units) = 526

Declarative Knowledge

The second question was “Suppose you were the teacher of this class today and a student asked you ‘What is effective writing?’ what would you tell that student about effective writing?” This question probed students’ declarative knowledge of the characteristics of effective writing such the writer’s knowledge of self, the task, and the strategies involved with generating effective writing. For this question, 80% of students’ responses were categorized as Substantive Procedures, with 13% categorized as Production Procedures. The category of “other” contained 6% of the responses and included idea units such as “showing illustrations or giving a guide regarding the topic”,

“enjoy writing”, “almost like painting and not everyone can do it”, and “proud of the final draft”.

Community college students’ responses regarding the Substantive Procedures of declarative knowledge presented a different picture than responses regarding procedural knowledge. Specifically, Substantive Procedures were primarily categorized under the Writing/Drafting subsets of Clarity (i.e., “have paragraphs focus on a certain topic”, 20%), Audience (18%), Expression (of thoughts and emotions, 9%), Goal Setting/Planning (9%), Reviewing and Revising (7%), and Time and Effort (i.e., “encourage students to improve themselves and make a habit of writing daily”, 4%). No one referred to Information Generation or Writing and Drafting in their responses to declarative knowledge, which differed from responses to procedural knowledge (See Table 12).

Table 12

Response Frequency for Question 2: Declarative Knowledge

Response Category	Frequency	Percentage
I. Production Procedures		
Grammar and Spelling	61	13
II. Substantive Procedures		
Goal Setting/Planning	46	9
Purpose	32	7
Writing/Drafting Subsets:		
Clarity and Focus	95	20
Audience	84	18
Expression of Thoughts and Emotions	44	9
Details and Descriptions	19	4
Time and Effort	24	4
Revising, Review, Editing	31	7
III. Other	30	5

N (number of response units) = 466

Discussion

The current study investigated procedural and declarative knowledge of community college student writers, specifically those in Teacher Education and Child Development classes. With regard to procedural knowledge, students focused primarily on the Goal Setting/Planning process, with an emphasis on establishing a Purpose, the Writing/Drafting act itself, and Revising/Reviewing. Students' responses did not clarify if they conceived of the Revising/Rewriting process as a distinctly different process occurring only at the end of writing, or, as part of the on-going process of writing. Revision has a prominent role in the writing models of Hayes and Flower, Scardamalia and Bereiter, and Kellogg and is seen as part of the entire writing process, not confined solely to before and after processes.

Overall, responses from the community college writers regarding procedural knowledge seemed to indicate that students were principally engaged with knowledge transformation, integral to the Scardamalia and Bereiter (1987) model, where reviewing, planning, and strategy development are significant to the writing process. Students were also more likely to list Substantive Procedures, as opposed to Production Procedures, possibly indicating awareness of the importance of these metacognitive processes. Production Procedures, such as spelling and grammar, were less important in students' procedural knowledge responses, which seems appropriate for writing at the community college level, if they are indeed more experienced writers. Grammar and Spelling were rarely mentioned, supporting the fact that these are insignificant for more experienced

writers, as opposed to younger beginning writers who stress form and appearance (Graham et al.,1993, Schoonen and de Glopper, 1996).

Declarative knowledge revealed students' focus more on the actual act of Writing/Drafting itself with an emphasis on Clarity and Audience. Grammar and Spelling were considered important for effective writing, while processes that take place before and after, such as Planning and Revising, were much less important. This seemed to indicate a focus on the finished piece, effectively written and polished, compelling more grammar and spelling corrections. This may also represent students' focus on the completed, graded writing assignment where grammar and spelling errors are tallied by instructors. Another significant student response was knowing or addressing one's Audience (18%). Audience orientation has a considerable role in Kellogg's (2008) knowledge crafting where writers attempt to craft their ideal paper, the actual text, and the text from the audience or reader's perspective. Knowledge crafting is normally associated with expert level, older, experienced writers. Beach (1976) found extensive revisers delayed orientation towards audience, while non-extensive revisers were more oriented towards audience at the beginning. A concern for audience has positively predicted the writing performance in undergraduate students (J. Sanders-Reio et al., 2014) and is associated with expert writing practice (Kellogg, 2008).

Responses for both declarative and procedural knowledge reveal community college students seem adequately knowledgeable about the process of writing and what effective writing looks like, though, for the later, they may be overly focused on Production Procedures with little emphasis on Planning and Revision. This focus is

likely a result of concern with the graded product, as opposed to process, and may be a concern perpetuated by instructors. This also appears to present students' view of Planning and Revision as part of the process but not part of the finished product of what effective writing looks like.

Limitations/Educational Implications/Future Research

Limitations of the current study concern the characteristics of this convenience sample: one community college, two similar disciplines, and a majority of female participants. Additionally, it is difficult to ascertain precisely the students' prior knowledge and experience with metacognitive strategies, and their concept of "writing" in response to these questions. Responses indicated some students may have addressed persuasive writing, some creative writing, while others addressed research-based writing. Examples underscoring the variability in students' responses were: "Effective writing is being able to persuade the reader", "Effective writing is writing about something or someone that has effected you", and "Effective writing should always have good content and/or research and should always give credit to outside resources". Time may have been a limiting factor in this study due to the fact that these two questions followed a required writing sample that likely consumed the majority of students' writing and cognitive efforts.

Future research should allow more time for students' responses, consider the addition of a third question regarding conditional knowledge, or the "why" of their written response, and comparison of these responses with those of declarative and procedural knowledge. This could be done in follow-up interviews which may provide

answers not constrained to writing skill or time. A study replicating Negretti (2012), that examines students' metacognitive knowledge via journal writing, could provide keen insights into community college students' metacognitive awareness of personal writing strategies and its possible effects on students' academic writing.

Finally, and perhaps most importantly, although students' responses seemed to indicate appropriate metacognitive knowledge of effective writers and writing, this is merely what students reported. It is hoped students' knowledge about writing would guide both their process and the product. A future study should examine whether community college students' metacognitive knowledge transfers to their own effective writing. It is essential for community college students in the areas of Teacher Education and Child Development to understand effective writing behaviors and the process of effective writing, for this will likely inform not only their personal writing effectiveness but the knowledge they convey to future students. Studies have confirmed that as teachers' literacy-relevant linguistic knowledge and confidence increased, classroom literacy routines as well as students' writing skills and motivation improved (McCutchen et al., 2002; McCutchen, Green, Abbott, & Sanders, 2009).

Findings from this current study may provide insight into the metacognitive knowledge in writing of community college students and encourage or renew instructors' interest in the role these skills play in supporting students' writing practice. Students seem familiar with procedural and declarative knowledge, yet do they understand how to transform this knowledge into practice? Do instructors understand how to facilitate this transformation and are their expectations suitable for community

college student writing? Ideally, modeling ongoing, critical evaluation of one's writing would benefit students, with an emphasis on planning, reviewing, and global revising as part of the writing process. It would also be prudent for instructors to provide continual practice in knowledge transformation, with the aim of advancing some, and eventually all, students towards knowledge-crafting, where writers refine what they say and how they say it, while maintaining an audience orientation. The goal of writing for postsecondary students, and particularly potential future educators, is not only appropriate written expression but their use of writing to reflect upon and assimilate learning.

CHAPTER V

CONCLUSION

The current study examined the characteristics of proficient writing among community college students, and, specifically, the student groups of native English language speakers (L1) and non-native English language speakers, L2 and Generation 1.5 students. The study had four aims: first, to investigate the lexical, syntactic, and cohesive differences associated with proficient writing among these student groups, using Coh-Metrix; second, to compare these results with previous studies using Coh-Metrix; third, to investigate the influence of number of years of English studied in the United States, age of acquisition, and parental education levels; and fourth, to examine what students understand about proficient writing. Results demonstrated that native English language users (L1) outperformed L2 and Generation 1.5 students in lexical measures and syntactic complexity, specifically the number of modifiers per noun phrase. More proficient writers tend to use a diverse vocabulary and more complex syntactic structure, including more noun phrases. L2 writing characteristics have demonstrated longer clauses, less noun modification, limited lexical control and diversity, inability to focus on more global structures such as cohesion when revising (Raimes, 2001, Zamel, 1984). Based upon these findings, writing instruction should focus on the use of a more varied and diverse vocabulary for L2 and Generation 1.5 community college students as well as possible instruction in the use of modifiers per noun phrase for Generation 1.5 students.

Findings also demonstrated that Generation 1.5 used more words before the main verb than both L1 and L2, typically a sign of syntactic complexity and proficient writing. It is possible the current study's Generation 1.5 writers may be more proficient in this area of syntactic structure; the literature supports the fact that proficient L2 writers demonstrate an increase in syntactic diversity, with proficient L2 writers using more variety in syntactic structures such as more nominalizations (converting a verb or adjective into a noun), pronouns (e.g., "I", "she", "it") and prepositions (e.g. "on", "with", "for"), (Connor, 1990, Reid, 1992). However, these findings of proficient writing are not found in the areas of vocabulary and noun phrases in the current study, nor in the prevailing literature regarding L2 and Generation 1.5 student's struggle with grammatical control (di Gennaro, 2013; Doolan & Miller, 2012). In using Coh-Metrix, it is difficult to ascertain if the finding of a higher count of words before the main verb truly indicates the words are used accurately and appropriately.

The hypothesis that there would be some similar findings amongst all groups, in terms of textual characteristics, with fewer differences between Generation 1.5 and L2, was confirmed. The majority of differences were found between L1 and Generation 1.5, and not between Generation 1.5 and L2, suggesting that Generation 1.5 students are more similar in their writing to L2 students than to L1 students, despite their English oral language competence. The fact that no cohesion differences were found amongst the three groups may be indicative of the fact that all community college students are still refining their writing skills. It is also possible the L2 students, who did not graduate from high school in the United State and studied English four years of less in the United

States, received different writing instruction in English, qualitatively and quantitatively, and/or may be quite proficient in their native language writing and this is manifested in cohesive English writing; hence, the lack of differences between the L1, L2, and Generation 1.5.

The results of the current study also found that for Generation 1.5 and L2 students at the community college level, AOA was the most influential contributors to students' writing, specifically Syntactic Pattern Density. Syntactic Pattern Density is measured in Coh-Metrix by the use of noun and verb phrases. As one becomes a more proficient writer, there is an increase in the use of noun phrases while the use of verb phrases may decrease (Crossley & McNamara, 2014; Parkinson & Musgrave, 2014). Results were particularly significant for ages 0-3 years, indicating that Syntactic Pattern Density is influenced by an early age of learning English. AOA has predicted academic proficiency in English as a Foreign Language reading and writing (Haim, 2014) and found to be an influential factor in the domain of language acquisition (Hernandez & Li, 2007). Although older age of second language onset and higher levels of mother's education were associated with faster growth in children's English lexical development (Goldberg, Paradis, and Crago, 2008), the current study did not support either of these findings.

The final aim of this study, to examine what Teacher Education and Child Development students understand about proficient writing, revealed that students' metacognitive knowledge of the writing process appeared to be at an appropriate level for community college students in both declarative and procedural knowledge. Students

focused on clarity, audience, grammar, and spelling when discussing declarative knowledge and goal setting/planning, establishing purpose, writing, and revising when discussing procedural knowledge. No one referred to information generation or writing/drafting in their responses to declarative knowledge, which differed from responses to procedural knowledge. Although students seemed adequately knowledgeable about the process of writing, answers to the declarative question of what effective writing looks like revealed students were overly focused on the production procedures of grammar and spelling with little emphasis on planning and revision. This may be reflective of the time students allot for planning and revision; they may focus on getting the product finished and submitted and dismiss the importance of the initial and culmination processes of planning and revising. This focus could be a result of concern with the graded product, as opposed to process, perpetuated by instructors and deadlines.

Recommendations

A clear advantage to Coh-Metrix is the use of automation to report on linguistic indices. Many of these indices are difficult to measure quickly and objectively by humans. Coh-Metrix can identify differences in the use of linguistic features between L1, Generation 1.5, and L2 writing at the community college level, as well as within individuals. Results from the current study can provide awareness of these differences and be used to guide and tailor writing and vocabulary instruction and assessment. Going forward, the Coh-Metrix tool can be used to objectively identify problem areas in students' writing and track potential progress on an individual basis.

Students can also use the output from Coh-Metrix to identify and monitor their own strengths and weaknesses in terms of characteristics of proficient writing, and modify their writing accordingly (McNamara, Crossley, & Roscoe, 2013). Use of explicit writing instruction, consistent feedback, and continuous assessment has demonstrated L2 first year college writers can progress significantly over the course of a semester (Aryadoust, 2014). A tool such as Coh-Metrix could be used for baseline information and monitoring. This information would assist instructors in examining the competence of all writers prior to expecting them to comprehend and compose content at the community college, non-developmental level. The goal at the community college level is not only to improve student learning during the two-year college experience, but to prepare them for potential matriculation to four year institutions. It is incumbent upon instructors to be well-prepared in providing effective instruction, feedback, and assessment for increasingly diverse groups of student writers

Findings provided insight into the metacognitive knowledge in writing of community college students and could encourage or renew instructors' interest in the role these skills play in supporting students' writing practice. Students seem familiar with procedural and declarative knowledge in writing, yet we must now ascertain how to transform this knowledge into practice. Ideally, community college instructors should model ongoing, critical evaluation of writing, with an emphasis on planning, reviewing, and global revising as part of the writing process. It would be prudent for instructors to provide continual practice in using writing as knowledge transformation, which follows knowledge telling in Scardamalia and Bereiter's model of writing (1987). The eventual

aim would be that of Kellogg's model of writing (2008), to advance students from knowledge transformation towards knowledge-crafting, where writers refine what they say and how they say it. The goal of writing for postsecondary students, and expressly for potential future educators, is not only appropriate written expression but the use of writing as a tool for assimilation of learning and reflection.

Finally, results from this study shed light on its participants who are potential future educators and warrant our attention. These students must acquire adequate writing skills to successfully complete their undergraduate education programs, pass the writing portion of the teacher certification exam, write for professional purposes, and develop an understanding of the components of proficient writing and the writing process for instruction and modeling with their future students. Among the many prudent recommendations from The National Commission on Writing in America's Schools and Colleges (2003) is this statement: "All prospective teachers, no matter their discipline, should be provided with courses in how to teach writing" and "...writing instruction in college and universities should be improved for all students" (The *Neglected "R"*, p. 3). This study is a commitment to those goals.

REFERENCES

- Albin, M.L., Benton, S.L., Khramtsova, I. (1996). Individual differences in interest and narrative writing. *Contemporary Educational Psychology, 21*, 305-324.
doi:10.1006/ceps.1996.0024
- Aryadoust, V. (2014). Understanding the growth of ESL paragraph writing skills and its relationships with linguistic features. *Educational Psychology*,
doi:10.1080/01443410.2014.950946
- Bacharach, V.R., & Baumeister, A. A. (1998). Direct and indirect effects of intelligence, maternal age, income, and home environment on intelligence of preterm, low-birth-weight children. *Journal of Applied Developmental psychology, 19*(3), 361-375. doi 10.1016/S0193-3973(99)80045-8
- Beach, R. (1976). Self-evaluation strategies of extensive revisers and nonrevisers. *College Composition and Communication, 27*, 160-164. doi: 10.2307/356982
- Beers, S. F., & Nagy, W. E. (2009). Syntactic complexity as a predictor of adolescent writing quality: Which measures? Which genre? *Reading and Writing: An Interdisciplinary Journal, 22*, 185-200. doi: 10.1007/s11145-007-9107-5
- Berninger, V. W., Abbott, R. D., Whitaker, D., Sylvester, L., & Nolen, S. B. (1995). Integrating low-and high-level skills in instructional protocols for writing disabilities. *Learning Disability Quarterly, 18*, 293-309. doi: 10.2307/1511235
- Berninger, V. W., Vaughan, K., Abbott, R. D., Begay, K., Coleman, K. B., Curtin, G., ... & Graham, S. (2002). Teaching spelling and composition alone and together: Implications for the simple view of writing. *Journal of Educational Psychology*,

94, 291. doi:10.1037/0022-0663.94.2.291

Bialystok, E., & Miller, B. (1999). The problem of age in second-language acquisition:

Influences from language, structure, and task. *Bilingualism: Language and Cognition*, 2(2), 127-145. doi:

<http://dx.doi.org.ezproxy.library.tamu.edu/10.1017/S1366728999000231>

Birdsong, D. (2006). Age and second language acquisition and processing: A selective overview. *Language Learning*, 56(1), 9-49. Retrieved from

<http://lrc.cornell.edu/events/past/2004-5/birdsong.pdf>

Birdsong, D., & Molis, M. (2001). On the evidence for maturational constraints in second language acquisition. *Journal of Memory and Language*, 44(2), 235-249.

doi:10.1006/jmla.2000.2750

Breetvelt, I., van den Bergh, H., & Rijlaarsdam, G. (1994). Relations between writing processes and text quality: when and how? *Cognition and Instruction*, 12, 103-

123. Retrieved from <http://www.jstor.org.lib->

[ezproxy.tamu.edu:2048/stable/3233677](http://www.jstor.org.lib-ezproxy.tamu.edu:2048/stable/3233677)

Campbell, J., Smith, D., & Brooker, R. (1998). From conception to performance: How undergraduate students conceptualise and construct essays. *Higher Education*,

36(4), 449-469. Retrieved from

<http://eds.a.ebscohost.com.ezproxy.library.tamu.edu/eds/pdfviewer/pdfviewer?vi>

[d=10&sid=2f255842-0472-4b04-a819](http://eds.a.ebscohost.com.ezproxy.library.tamu.edu/eds/pdfviewer/pdfviewer?vid=10&sid=2f255842-0472-4b04-a819)

[1f0664f08221%40sessionmgr4001&hid=4208](http://eds.a.ebscohost.com.ezproxy.library.tamu.edu/eds/pdfviewer/pdfviewer?vid=10&sid=2f255842-0472-4b04-a819-1f0664f08221%40sessionmgr4001&hid=4208)

Castro, C. D. (2004). Cohesion and the social construction of meaning in the essays of

- Filipino college students writing in L2 English. *Asia Pacific Education Review*, 5(2), 215-225. Retrieved from <http://files.eric.ed.gov/fulltext/EJ720542.pdf>
- Chen, X., Geva, E., & Schwartz, M. (2012). Understanding literacy development of language minority students: an integrative approach. *Reading and Writing*, 25(8), 1797-1804. doi: 10.1007/s11145-012-9400-9
- Chenoweth, N. A., & Hayes, J. R. (2001). Fluency in writing generating text in L1 and L2. *Written communication*, 18(1), 80-98. doi: 10.1177/0741088301018001004
- College Board. (2012). *Essay scoring guide*. Retrieved from <https://professionals.collegeboard.com/testing/sat-reasoning/scores/essay/guide>
- Collier, V. P. (1987). Age and rate of acquisition of second language for academic purposes. *TESOL Quarterly*, 21(4), 617-641. Retrieved from http://tesol.aaa.org/tqd_2000/TQD_2000/TQ_D2000/Vol_21_4.pdf#page=10
- Collier, V. P. (1995). Acquiring a Second Language for School. *Directions in Language and Education*, 1, 1-14. Retrieved from <http://files.eric.ed.gov/fulltext/ED394301.pdf>
- Connor, U. (1990). Linguistic/rhetorical measures for international persuasive student writing. *Research in the Teaching of English*, 67-87. Retrieved from <http://www.jstor.org/stable/40171446>
- Crossley, S. A., & McNamara, D. S. (2009). Computational assessment of lexical differences in L1 and L2 writing. *Journal of Second Language Writing*, 18, 119-135. doi:10.1016/j.jslw.2009.02.002

- Crossley, S. A., & McNamara, D. S. (2011). Shared features of L2 writing: Intergroup homogeneity and text classification. *Journal of Second Language Writing, 20*, 271-285. doi:10.1016/j.jslw.2011.05.007
- Crossley, S. A., & McNamara, D. S. (2012). Predicting second language writing proficiency: The roles of cohesion and linguistic sophistication. *Journal of Research in Reading, 35*, 115-135. doi:10.1111/j.1467-9817.2010.01449.x
- Crossley, S. A., & McNamara, D. S. (2014). Does writing development equal writing quality? A computational investigation of syntactic complexity in L2 learners. *Journal of Second Language Writing, 26*, 66-79. doi:10.1016/j.jslw.2014.09.006
- Crossley, S. A., Salsbury, T., & McNamara, D. S. (2012). Predicting the proficiency level of language learners using lexical indices. *Language Testing, 29*, 243-263. doi:10.1177/0265532211419331
- Crossley, S. A., Salsbury, T., McNamara, D. S., & Jarvis, S. (2011). Predicting lexical proficiency in language learner texts using computational indices. *Language Testing, 28*, 561-580. doi:10.1177/0265532210378031
- Crossley, S. A., Weston, J. L., Sullivan, S. T. M., & McNamara, D. S. (2011). The development of writing proficiency as a function of grade level: A linguistic analysis. *Written Communication, 28*(3), 282-311. doi:10.1177/074108831141018
- Cummins, J. (1981). Age on arrival and immigrant second language learning in Canada: A reassessment. *Applied Linguistics, 2*, 132-149. doi:10.1093/applin/II.2.132

- Cummins, J. (2000). *Language, power, and pedagogy: Bilingual children in the crossfire*. Retrieved from <http://eds.b.ebscohost.com.ezproxy.library.tamu.edu/eds/ebookviewer/ebook/bx1YmtfXzgwNTQ3X19BTg2?sid=d059cb35-4e56-43a3-9c00cf9f71020381@sessionmgr110&vid=7&format=EB&rid=16199c967e607@sessionmgr4005&vid=19&format=EB&rid=3>
- de Carli, F., Dessi, B., Mariani, M., Girtler, N., Greco, A., Rodriguez, G., ... & Morelli, M. (2015). Language use affects proficiency in Italian–Spanish bilinguals irrespective of age of second language acquisition. *Bilingualism: Language and Cognition*, 18(2), 324-339. doi: <http://dx.doi.org/10.1017/S1366728914000054>
- DeKeyser, R., Alfi-Shabtay, I., & Ravid, D. (2010). Cross-linguistic evidence for the nature of age effects in second language acquisition. *Applied Psycholinguistics*, 31(3), 413-438. doi: [10.1017/S0142716410000056](http://dx.doi.org/10.1017/S0142716410000056)
- di Gennaro, K. (2009). Investigating differences in the writing performance of international and Generation 1.5 students. *Language Testing*, 26, 533-555. doi: [10.1177/026553220934019](http://dx.doi.org/10.1177/026553220934019)
- di Gennaro, K. (2013). How different are they? A comparison of Generation 1.5 and international L2 learners' writing ability. *Assessing Writing*, 18, 154-172. doi: [10.1016/j.asw.2013.01.003](http://dx.doi.org/10.1016/j.asw.2013.01.003)
- Doolan, S. M. (2011). A language-related comparison of Generation 1.5 and L1 student writing. *CATESOL Journal*, 22(1), 1-88. Retrieved from

<http://web.a.ebscohost.com.lib->

ezproxy.tamu.edu:2048/ehost/pdfviewer/pdfviewer?sid=d6e1e419-30b0-4ecd

8f53-e9a5db78ab84%40sessionmgr4003&vid=2&hid=4206

Doolan, S. M. (2013). Generation 1.5 writing compared to L1 and L2 writing in first year composition. *Written Communication, 30*, 135-163.

doi:10.1177/0741088313480823

Doolan, S. M. (2014). Comparing language use in the writing of developmental Generation 1.5, L1, and L2 tertiary students. *Written Communication, 31*, 215

247. doi:10.1177/0741088314526352

Doolan, S. M., & Miller, D. (2012). Generation 1.5 written error patterns: A comparative study. *Journal of Second Language Writing, 21*(1), 1-22.

doi:10.1016/j.jslw.2011.09.001

Dunsmuir, S., & Blatchford, P. (2004). Predictors of writing competence in 4- to 7-year old children. *British Journal of Educational Psychology, 74*(3), 461-483.

doi:10.1348/0007099041552323

Engber, C. A. (1995). The relationship of lexical proficiency to the quality of ESL compositions. *Journal of Second Language Writing, 4*, 139-155.

doi:10.1016/1060-3743(95)90004-7

Faigley, L., Witte, S. (1981). Analyzing revision. *College Composition and Communication, 32*(4), 400-414. doi 10.2307/356601

Ferris, D. (2009). Defining L2 student audiences. *Teaching College Writing to Diverse Student Populations* (pp. 3-24). Ann Arbor: University of Michigan Press, c2009

- Ferris, D. R. (1994). Lexical and syntactic features of ESL writing by students at different levels of L2 proficiency. *TESOL Quarterly*, 28, 414-420.
doi:10.2307/3587446
- Ferris, D., Brown, J., Hsiang (Sean), L., Eugenia, M., & Stine, A. (2011). Responding to L2 students in college writing classes: Teacher perspectives. *TESOL Quarterly*, 207-234. doi:10.5054/tq.2011.247706
- Goldberg, H. Paradis, J., & Crago, M. (2008). Lexical acquisition over time in minority first language children learning English as a second language. *Applied Psycholinguistics*, 29, 41–65. doi:10.1017/S014271640808003X
- Graesser, A. C., Singer, M., & Trabasso, T. (1994). Constructing inferences during narrative text comprehension. *Psychological Review*, 101(3), 371. Retrieved from
<http://eds.a.ebscohost.com.ezproxy.library.tamu.edu/eds/pdfviewer/pdfviewer?d=46bd4d9e-2ec4-4db4-844e0dbc6007f9e5%40sessionmgr4005&vid=22&hid=4210>
- Graham, S., & R. Harris, K. (2000). The role of self-regulation and transcription skills in writing and writing development. *Educational Psychologist*, 35(1), 3-12. doi: 10.1207/S15326985EP3501_2
- Graham, S., Schwartz, S. S., & MacArthur, C. A. (1993). Knowledge of writing and the composing process, attitude toward writing, and self-efficacy for students with and without learning disabilities. *Journal of Learning Disabilities*, 26, 237-249.
doi: 10.1177/002221949302600404

- Granena, G., & Long, M. (2013). Age of onset, length of residence, language aptitude, and ultimate L2 attainment in three linguistic domains. *Second Language Research*, 29(3), 311-343. doi:10.1177/0267658312461497
- Grant, L., & Ginther, A. (2000). Using computer-tagged linguistic features to describe L2 writing differences. *Journal of second language writing*, 9(2), 123-145. doi: 10.1016/S1060-3743(00)00019-9
- Green, C. (2012). A computational investigation of cohesion and lexical network density in L2 writing. *English Language Teaching*, 5(8), 57-69. doi:10.5539/elt.v5n8p57
- Green, C. F., Christopher, E. R., & Mei, J. L. K. (2000). The incidence and effects on coherence of marked themes in interlanguage texts: A corpus-based enquiry. *English for Specific Purposes*, 19(2), 99-113. doi:10.1016/S0889-4906(98)00014-3
- Haim, O. (2014). Factors predicting academic success in second and third language among Russian-speaking immigrant students studying in Israeli schools. *International Journal of Multilingualism*, 11, 41-61. doi:10.1080/14790718.2013.829069
- Hakuta, K., Bialystok, E., & Wiley, E. (2003). Critical evidence: A test of the critical period hypothesis for second-language acquisition. *Psychological Science*, 14(1), 31-38. Retrieved from <http://www.jstor.org.ezproxy.library.tamu.edu/stable/40063748>
- Hannon, B. (2015). Hispanics' SAT scores: The influences of level of parental education, performance-avoidance goals, and knowledge about learning.

Hispanic Journal of Behavioral Sciences, 37, 204-222.

doi:10.1177/0739986315573249

Harklau, L. (2003, October). Generation 1.5 students and college writing. Washington, DC: Center for Applied Linguistics. Retrieved from <http://www.cal.org/resources/digest/0305harklau.h>

Harris, K. R., Graham, S., Brindle, M., & Sandmel, K. (2009). Metacognition and children's writing. In D.J. Hacker, J. Dunlosky, A. C. Graesser (Eds.), *Handbook of metacognition in education* (pp. 131-153). New York: Routledge.

Hart, B., & Risley, T. R. (1992). American parenting of language-learning children: Persisting differences in family-child interactions observed in natural home environments. *Developmental Psychology*, 28(6), 1096-1105. doi:10.1037/0012-1649.28.6.1096

Hayes, J. (2012). Modeling and remodeling writing. *Written Communication*, 29(3), 369-388. doi:10.1177/0741088312451260

Hayes, J., & Flower, L. (1980). "Identifying the organization of writing processes." In L. W. Gregg & E. R. Steinberg (Eds.), *Cognitive processes in writing* (pp. 3-30). Hillsdale, NJ: Lawrence Erlbaum.

Hernandez, A. E., & Li, P. (2007). Age of acquisition: its neural and computational mechanisms. *Psychological Bulletin*, 133(4), 638-650. doi: 10.1037/0033-2909.133.4.638

Hinkel, E. (2004). Tense, aspect and the passive voice in L1 and L2 academic texts. *Language Teaching Research*, 8, 5-29. doi: 10.1191/1362168804lr132oa

- Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74(5), 1368-1378. doi:10.1111/1467-8624.00612
- Hyland, K. (2007). Genre pedagogy: Language, literacy and L2 writing instruction. *Journal of Second Language Writing*, 16, 148-164
doi:10.1016/j.jslw.2007.07.005
- Jenkins, D., & Fink, J. (2015). *What we know about transfer*. New York, NY: Columbia University, Teachers College, Community College Research Center. Retrieved from: <http://ccrc.tc.columbia.edu>
- Jia, G., & Fuse, A. (2007). Acquisition of English grammatical morphology by native Mandarin-speaking children and adolescents: Age-related differences. *Journal of Speech, Language & Hearing Research*, 50(5), 1280-1299. 10.1044/1092-4388(2007/090)
- Job outlook: The candidate skills/qualities employers want, the influence of attributes (2014, November). *Spotlight for Career Services Professionals*. Retrieved from <http://naceweb.org/s11122014/job-outlook-skills-qualities-employers-want.aspx>
- Johnson, J. S. (1992). Critical period effects in second language acquisition: The effect of written versus auditory materials on the assessment of grammatical competence. *Language Learning*, 42(2), 217-248. doi: 10.1111/j.1467-1770.1992.tb00708.x
- Johnson, J. S., & Newport, E. L. (1989). Critical period effects in second language learning: The influence of maturational state on the acquisition of English as a

second language. *Cognitive Psychology*, 21(1), 60-99. doi:10.1016/0010-0285(89)90003-0

Kanno, Y., & Cromley, J. G. (2013). English language learners' access to and attainment in postsecondary education. *TESOL Quarterly*, 47(1), 89-121. doi:10.1002/tesq.49

Kaufert, D. S., Hayes, J. R., & Flower, L. (1986). Composing written sentences. *Research in the Teaching of English*, 121-140. Retrieved from <http://www.jstor.org/stable/40171073>

Kellogg, R. T. (2008). Training writing skills: A cognitive developmental perspective. *Journal of Writing Research*, 1, 1-26. doi:10.17239/jowr-2008.01.01.1

Kintsch, W. (1988). The role of knowledge in discourse comprehension: a construction integration model. *Psychological Review*, 95(2), 163. Retrieved from <http://eds.a.ebscohost.com.lib-ezproxy.tamu.edu:2048/eds/pdfviewer/pdfviewer?vid=2&sid=644e56a2-6830-4065-92a7-34f1e8593877%40sessionmgr4001&hid=4105>

Knocking at the college door. (2013, January). *Western Interstate Commission for Higher Education*. Retrieved from <http://www.wiche.edu/news/release/16626>

Kormos, J. (2011). Task complexity and linguistic and discourse features of narrative writing performance. *Journal of Second Language Writing*, 20, 148-161. doi:10.1016/j.jslw.2011.02.001

- Krashen, S. D. (1973). Lateralization, language learning, and the critical period: Some new evidence. *Language Learning*, 23(1), 63-74. doi: 10.1111/j.1467-1770.1973.tb00097.x
- Larson-Hall, J. (2008). Weighing the benefits of studying a foreign language at a younger starting age in a minimal input situation. *Second Language Research*, 24(1), 35-63. doi:10.1177/0267658307082981
- Lin, S. C., Monroe, B. W., & Troia, G. A. (2007). Development of writing knowledge in grades 2-8: A comparison of typically developing writers and their struggling peers. *Reading & Writing Quarterly*, 23(3), 207-230. doi:10.1080/10573560701277542
- McCarthy, P. M., & Jarvis, S. (2010). MTL-D, vocd-D, and HD-D: A validation study of sophisticated approaches to lexical diversity assessment. *Behavior Research Methods*, 42, 381-392. doi: 10.3758/BRM.42.2.381
- Mahalski, P. A., (1992). Essay-Writing: Do study manuals give relevant advice? *Higher Education*, 24(1), 113-132. Retrieved from <http://www.jstor.org.ezproxy.library.tamu.edu/stable/3447620>
- Maluch, J. T., Kempert, S., Neumann, M., & Stanat, P. (2015). The effect of speaking a minority language at home on foreign language learning. *Learning and Instruction*, 36, 76-85. doi:10.1016/j.learninstruc.2014.12.001
- McCutchen, D. (2000). Knowledge, processing, and working memory: Implications for a theory of writing. *Educational Psychologist*, 35, 13-23. Retrieved from <http://eds.a.ebscohost.com.lib>

ezproxy.tamu.edu:2048/eds/pdfviewer/pdfviewer?vid=8&sid=26195291-e3e2-4974a51d-d3eddc6e0f5a%40sessionmgr4003&hid=4110

McCutchen, D., Abbott, R. D., Green, L. B., Beretvas, S. N., Cox, S., Potter, N. S., & ...

Gray, A.L. (2002). Beginning literacy links among teacher knowledge, teacher practice, and student learning. *Journal of Learning Disabilities, 35*, 69-86. doi: 10.1177/002221940203500106

McCutchen, D., Green, L., Abbott, R. D., & Sanders, E. A. (2009). Further evidence for

teacher knowledge: Supporting struggling readers in grades three through five. *Reading and Writing, 22*(4), 401-423. doi 10.1007/s11145-009-9163-0

McNamara, D. S., Crossley, S. A., & McCarthy, P. M. (2010). Linguistic features of

writing quality. *Written Communication, 27*, 57-86. Retrieved from <http://lib-ezproxy.tamu.edu:2048/login?url=http://search.proquest.com/docview/214153403?accountid=7082>

McNamara, D. S., Crossley, S. A., & Roscoe, R. (2013). Natural language processing in

an intelligent writing strategy tutoring system. *Behavior Research Methods, 45*(2), 499-515. doi 10.3758/s13428-012-0258-1

McNamara, D. S. Graesser, A. C., McCarthy, P.M., & Cai, Z. (2014). *Automated*

evaluation of text and discourse with Coh-Metrix. New York, NY: Cambridge University Press.

McNamara, D. S., Louwrese, M. M., McCarthy, P. M., & Graesser, A. C. (2010). Coh-

Metrix: Capturing linguistic features of cohesion. *Discourse Processes, 47*, 292-330. doi: 10.1080/01638530902959943

- McNamara, D. S., Ozuru, Y., Graesser, A. C., & Louwrese, M. (2006). Validating co-matrix. In *Proceedings of the 28th annual conference of the cognitive science society* (pp. 573-578). Mahwah, NJ: Erlbaum. Retrieved from <http://129.219.222.66:8080/SoletlabWeb/pdf/fpo444-mcnamara.pdf>
- Mikesell, L. (2007). Differences between Generation 1.5 and English as a second language writers: A corpus-based comparison of past participle use in academic writing. *CATESOL Journal*, 19, 7-29. Retrieved from http://www.catesoljournal.org/wpcontent/uploads/2014/07/CJ19_mikesell.pdf
- Munóz, C. (2011). Input and long-term effects of starting age in foreign language learning. *IRAL: International Review of Applied Linguistics in Language Teaching*, 49(2), 113-133. doi:10.1515/iral.2011.006
- Myers, J. C., McCarthy, P. M., Duran, N. D., & McNamara, D. S. (2011). The bit in the middle and why it's important: a computational analysis of the linguistic features of body paragraphs. *Behavior Research Methods*, 43(1), 201-209. doi:10.3758/s13428-01000214
- A Nation with Many Languages. (2008). *A Policy Research Brief produced by the National Council of Teachers of English*. Retrieved from <http://www.ncte.org/library/NCTEFiles/Resources/Positions/Chron0308PolicyBrief.pdf>
- National Center for Education Statistics (2012). *The Nation's Report Card: Writing 2011*(NCES 2012-470). Institute of Education Sciences, U.S. Department of Education, Washington, D.C. Retrieved from

<http://nces.ed.gov/nationsreportcard/pdf/main2011/2012470.pdf>

National Center for Public Policy and Higher Education. (2011). *Affordability and transfer: Critical to increasing baccalaureate degree completion*. Retrieved from http://www.highereducation.org/reports/pa_at/PolicyAlert_06-2011.pdf

National Commission on Writing. (2006). *Writing and school reform*. National Commission on Writing for America's Families, Schools and Colleges.

Retrieved from

http://www.collegeboard.com/prod_downloads/writingcom/writing-school-reform-natl-comm-writing.pdf

Navés, T., Torras, M. R., & Celaya, M. L. (2003). Long-term effects of an earlier start: An analysis of EFL written production. *Eurosla yearbook*, 3, 103-129. doi: 10.1075/eurosla.3.08nav

Negretti, R. (2012). Metacognition in student academic writing: A longitudinal study of metacognitive awareness and its relation to task perception, self-regulation, and evaluation of performance. *Written Communication*, 29, 142-179. doi:10.1177/0741088312438529

Norton, L. S. (1990). Essay-writing: What really counts. *Higher Education*, 20(4), 411-442. Retrieved from <http://www.jstor.org/stable/3447222>

Olinghouse, N. G., & Graham, S. (2009). The relationship between the discourse knowledge and the writing performance of elementary-grade students. *Journal of Educational Psychology*, 101, 37-50. doi: <http://dx.doi.org/10.1037/a0015586>

- O'Reilly, T., & McNamara, D. S. (2007). The impact of science knowledge, reading skill, and reading strategy knowledge on more traditional "high-stakes" measures of high school students' science achievement. *American Educational Research Journal*, *44*(1), 161-196. doi: 10.3102/0002831206298171
- Parkinson, J., & Musgrave, J. (2014). Development of noun phrase complexity in the writing of English for Academic Purposes students. *Journal of English for Academic Purposes*, *14*, 48-59. doi:10.1016/j.jeap.2013.12.001
- Patkowski, M. S. (1980). The sensitive period for the acquisition of syntax in a second language. *Language Learning*, *30*(2), 449-468. doi:10.1111/j.1467-1770.1980.tb00328.x
- Patthey, G., Thomas-Spiegel, J., & Dillon, P. (2009). Educational Pathways of Generation 1.5 in community college writing courses. In M. Roberge, M. Siegal, & L. Harklau (Eds.), *Generation 1.5 in college composition: Teaching academic writing to US-educated learners of ESL* (pp. 135-149). New York, NY: Routledge.
- Perin, D., Keselman, A., & Monopoli, M. (2003). The academic writing of community college remedial students: Text and learner variables. *Higher Education*, *45*, 19-42. Retrieved from <http://www.jstor.org/stable/3447512>
- Purcell-Gates, V. Duke, N. K., & Martineau, J. A. (2007). Learning to read and write genre specific text: Roles of authentic experience and explicit teaching. *Reading Research Quarterly*, *42*(1), 8-45. doi:10.1598/RRQ.42

- Ragan, L. & Jones, S. (2013, November). The global English Language Learning (ELL) market. EdNETInight News Alert. Retrieved from <http://www.ednetinsight.com/news-alerts/voice-from-the-industry/the-global-english-language-learning--ell--market.html>
- Raimes, A. (2001). What unskilled ESL students do as they write: A classroom study of composing. In T.J. Silva & P.K. Matsuda (Eds.), *Landmark essays on ESL writing* (pp. 37-61). Mahwah, N.J. : Hermagoras
- Ramirez, G., Chen, X., Geva, E., & Luo, Y. (2011). Morphological awareness and word reading in English language learners: Evidence from Spanish-and Chinese-speaking children. *Applied Psycholinguistics*, 32(3), 601-618.
doi:10.1017/S014271641100023
- Razfar, A., & Simon, J. (2011). Course-taking patterns of Latino ESL students: Mobility and mainstreaming in urban community colleges in the United States. *TESOL Quarterly*, 45(4), 597-627. doi:10.5054/tq.2011.268060
- Reid, J. (1992). A computer text analysis of four cohesion devices in English discourse by native and nonnative writers. *Journal of Second Language Writing*, 1(2), 79-107. doi: 10.1016/1060-3743(92)90010-M
- Rindermann, H., Michou, C. D., & Thompson, J. (2011). Children's writing ability: Effects of parent's education, mental speed and intelligence. *Learning & Individual Differences*, 21(5), 562-568. doi:10.1016/j.lindif.2011.07.010

- Roessingh, H. (2008). Variability in ESL outcomes: The influence of age on arrival and length of residence on achievement in high school. *TESOL Canada Journal*, 26(1), 87-108. <http://files.eric.ed.gov/fulltext/EJ839517.pdf>
- Rumbaut, R. G. and Ima, K. (1988). *The adaptation of Southeast Asian refugee youth: A comparative study*. Washington, D.C., U.S. Office of Refugee Resettlement. Retrieved from <http://files.eric.ed.gov/fulltext/ED299372.pdf>
- Saddler, B., & Graham, S. (2007). The relationship between writing knowledge and writing performance among more and less skilled writers. *Reading & Writing Quarterly*, 23(3), 231-247. doi:10.1080/10573560701277575
- Sanders-Reio, J., Alexander, P. A., Reio, J. G., & Newman, I. (2014). Do students' beliefs about writing relate to their writing self-efficacy, apprehension, and performance? *Learning and Instruction*, 33, 1-11. doi:10.1016/j.learninstruc.2014.02.001
- Scardamalia, M., & Bereiter, C. (1987). Knowledge telling and knowledge transforming in written composition. In S. Rosenberg (Ed.), *Advances in applied psycholinguistics* (pp. 142-175). Cambridge: Cambridge University
- Singhal, M. (2004). Academic writing and generation 1.5: Pedagogical goals and instructional issues in the college composition classroom. *The Reading Matrix*, 4, 1-13. Retrieved from <http://eds.a.ebscohost.com.ezproxy.library.tamu.edu/eds/detail/detail?sid=46bd49e-2ec4-4db4-844e>

0dbc6007f9e5%40sessionmgr4005&vid=44&hid=4210&bdata=JnNpdGU9ZW
zLWxpdmU%3d#AN=15900405&db=eue

Silva, T. (1993). Toward an understanding of the distinct nature of L2 writing: The ESL research and its implications. *TESOL Quarterly*, 27, 657-677. doi: 10.2307/3587400

Taningco, M. V., & Pachon, H. P. (2008). Computer use, parental expectations, and Latino academic achievement. *Tomas Rivera Policy Institute*. Retrieved from <http://eric.ed.gov/?id=ED502054>

TOEFL. (2014) *Writing scoring guide*. Retrieved from http://www.ets.org/toefl/pbt/scores/writing_score_guide/

Trabasso, T., & van den Broek, P. (1985). Causal thinking and the representation of narrative events. *Journal of Memory and Language*, 24(5), 612-630. doi: 10:1016/0749-596X(85)90049-X

United States Census Bureau, Population Estimates Program (PEP). (2014). *Hispanic origin*. Retrieved from http://quickfacts.census.gov/qfd/meta/long_RHI825212.htm

United States Census Bureau (2013). *Race*. Retrieved from <http://census.gov/topics/population/race/about.html>

United States Department of Education, Office of Civil Rights (2005). *Developing programs for English language learners: Glossary*. Retrieved from <http://www2.ed.gov/about/offices/list/ocr/ell/glossary.html>

Wong, B. (1999). Metacognition in writing. In R. Gallimore, L.P. Bernheimer, D. L.

- MacMillan, D. L. Speece, & S. R. Vaughn (Eds.), *Developmental perspectives on children with high-incidence disabilities* (pp. 183-198). Mahwah: Lawrence Erlbaum
- Wong, B., Wong, R., & Blenkinsop, J. (1989). Cognitive and metacognitive aspects of learning disabled adolescents' composing problems. *Learning Disability Quarterly, 12*(4), 300-322. doi:10.2307/1510212
- Zamel, V. (1983). The composing processes of advanced ESL students: Six case studies. *TESOL Quarterly, 17*, 165-188. doi:10.2307/3586647
- Zwick, R., Brown, T., & Sklar, J. C. (2004). California and the SAT: A reanalysis of University of California admissions data. Research & Occasional Paper Series: CSHE. 8.04. *Center for Studies in Higher Education*. Retrieved from <http://files.eric.ed.gov/fulltext/ED492530.pdf>
- Zwick, R., & Green, J. G. (2007). New perspectives on the correlations of SAT scores, high school scores, and socioeconomic factors. *Journal of Educational Measurement, 44*, 23-45. doi: 10.1111/j.1745-3984.2007.00025.x

APPENDIX A
BIOGRAPHICAL SURVEY

Name _____

Thank you for participating in this survey. Your participation in this Biographical Information survey will not have an effect on your grade. *Please circle the best response below.*

You are not required to answer any question you prefer not to answer.

1. How old are you?

- 18-19
- 20-29
- 30-39
- 40-49
- 50 and over

2. How many years of formal (school) education have you received in the United States? (K- 12)

- 1-2 years
- 3-4 years
- 5-10 years
- More than 10
- None

3. Did you graduate from high school in the US?

Yes No

4. In the home where you spent most of your childhood, did you regularly speak English? **If Yes, please skip to number 10 on page 3.**

Yes No

If **No**, what language? _____

5. In this language other than English, how many years of formal (school) education have you had?

- None
- 1-3 years
- 3-5 years
- 5-8 years
- More than 8 years

6. What is the total number of years you studied the English language in the United States?

- 1 year
- 2 years
- 3 years
- 4 years
- More than 4 years
- None

7. What is the total number of years you studied the English language outside the United States?

- 1 year
- 2 years
- 3 years
- 4 years
- More than 4 years
- None

8. If English is not your first language, how old were you when you started learning English?

- 1-3 years old
- 3-5 years old
- 5-8 years old
- 8-16 years old
- 17 years or more

9. What language did you learn to speak first?

- English

- Spanish
- Other? _____ (write the language here)

10. How do you describe your ethnic origin?

- Hispanic or Latino origin
- Not Hispanic or Latino origin

11. What is the highest level of education completed by your father or male guardian?

- Grade school
- Some high school
- High school diploma or equivalent
- Business, trade or vocational/technical school
- Less than 2 years of college
- Associate's/two-year degree
- Bachelor's/four-year degree
- Graduate or professional degree

12. What is the highest level of education completed by your mother or female guardian?

- Grade school
- Some high school
- High school diploma or equivalent
- Business, trade or vocational/technical school
- Some college
- Associate's/two-year degree
- Bachelor's/four-year degree
- Graduate or professional degree

Note: Survey adapted from Doolan (2011, 2013)