

1-1-2013

# The intersection of culture and cognition: a comparison of Common Core State Standards argumentative writing responses of elementary-aged Hispanic/Latino and European-origin White students

Erin O'Hara-Rines  
*George Fox University*

This research is a product of the Doctor of Education (EdD) program at George Fox University. [Find out more](#) about the program.

---

## Recommended Citation

O'Hara-Rines, Erin, "The intersection of culture and cognition: a comparison of Common Core State Standards argumentative writing responses of elementary-aged Hispanic/Latino and European-origin White students" (2013). *Doctor of Education (EdD)*. Paper 2. <http://digitalcommons.georgefox.edu/edd/2>

This Dissertation is brought to you for free and open access by the Education at Digital Commons @ George Fox University. It has been accepted for inclusion in Doctor of Education (EdD) by an authorized administrator of Digital Commons @ George Fox University.

THE INTERSECTION OF CULTURE AND COGNITION:  
A COMPARISON OF *COMMON CORE STATE STANDARDS*  
ARGUMENTATIVE WRITING RESPONSES OF ELEMENTARY-AGED  
HISPANIC/LATINO AND EUROPEAN-ORIGIN WHITE STUDENTS

by

Erin O'Hara-Rines

FACULTY RESEARCH COMMITTEE

Chair: Steve Song, Ed.D.

Members: Ken Badley, Ph.D., and Robert Nava, Ph.D.

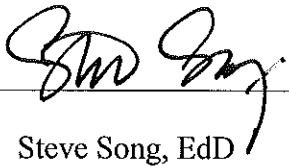
Presented to Educational Foundations and Leadership Department  
and the Graduate School of George Fox University  
in partial fulfillment of the requirements  
for the degree of  
Doctor of Education

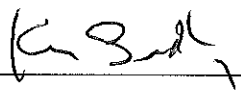
July 25th, 2013

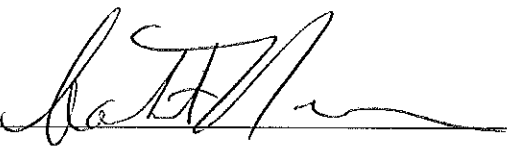
George Fox University  
School of Education  
Newberg, Oregon

“THE INTERSECTION OF CULTURE AND COGNITION: A COMPARISON OF *COMMON CORE STATE STANDARDS* ARGUMENTATIVE WRITING RESPONSES OF ELEMENTARY-AGED HISPANIC/LATINO AND EUROPEAN-ORIGIN WHITE STUDENTS,” a Doctoral research project prepared by ERIN O’HARA RINES in partial fulfillment of the requirements for the Doctor of Education degree in the Educational Foundations and Leadership Department.

This dissertation has been approved and accepted by:

7/25/13   
Date Steve Song, EdD Committee Chair  
Assistant Professor of Education

July 25, 2013   
Date Ken Badley, PhD Professor of Education

7/25/13   
Date Robert Nava, PhD Assistant Professor of Education

## Abstract

This exploratory study employed statistical analysis and response excerpts to locate points of intersection between culture and cognition in a comparison of argumentative writing work samples of 74 Oregon fourth and fifth grade Hispanic/Latino and European-origin White students. Major findings indicated that Hispanic/Latino students more often 1) employed a diffuse, recursive organizational style that may be related to traditional features of Mexican discourse, 2) utilized elements of indirect language, a feature that has been associated with collectivist cultures, and 3) incorporated narrative elements, echoing a cultural mode for connection, while White students more often 1) evidenced use of a sequential, clustered organizational approach that typifies traditional European rhetorical discourse, 2) displayed consistent use of direct language, a feature that has been associated with individualistic cultures, and 3) incorporated expository elements that focused on descriptive or factual features of a topic. Discussion focuses on implications for instruction in view of the impending implementation of the *Common Core State Standards* framework for argumentative writing.

## Acknowledgements

When Saint Brendan set off on the first of his legendary voyages, he did not dwell on its uncertainties. As a grizzled Irish coast receded behind him, he turned to meet a leaden sky welded to the visceral expanse of an aluminum sea, and had no steadfast hope but the call of God. But a great, thrilling freedom surely pierced that unmooring, otherwise plain in its vulnerability, and Brendan was transformed into *Brendan the Navigator, Brendan the Bold*. At certain crossroads in life, one is sometimes graced with the choice to stay on land or to venture forth, but to go means you will never be the same.

At mid-life, there are many good reasons *not* to pursue doctoral studies, things that temper the boldness to set out. At first, in fact, I said no. But something in the air changed, and the wind brought me along, like it did with Brendan. The warm golds and cinnabars of the east Oregon desert I traversed were doubtless richer than the gray tones of the North Atlantic, and the travel vastly more convenient. But the uncertainty diminished with the first step. I have gone, and am a better person for it, greatly enriched in understanding and perspective that will allow me to better serve others.

I will always be indebted to the members of my committee, who offered insightful advice and confirmation along the path of this dissertation, each according to his strengths: my chair, Dr. Steve Song, whose incisive suggestions and advocacy helped immeasurably to smooth and shape this document; Dr. Robert Nava, whose thoughtful suggestions gave me much needed perspective at crucial junctures; Dr. Ken Badley, the teacher on hand when I began and ended this journey of discovery, and who always had fabulous books to read. As well, Dr. Gary Tiffin was a source of great encouragement and greatly welcomed me within the program.

Conversations with my Redmond cohort and other colleagues I have met through classes in Newberg have strengthened me as “iron sharpens iron.”

Many thanks, as well, should go to public school officials and teachers who made this research possible. It is impossible to express how grateful to God I am for the privilege of having taught for more than two decades. The warmth and love I have received from former students have proven that teaching is an investment that reaps many returns. This current work draws on my experiences over the years with children from various backgrounds. My sincerest hope is that this knowledge can be used to help the academic journey of many young students.

I was accompanied and cheered by family who took up the slack in my absence and tolerated my constant attention to my Mac laptop: my longsuffering and very funny husband, Tim, who cooked homemade chicken soup from numerous Costco chickens and worked extra shifts as a paramedic to make this possible; our sons, Sam and Luke, who since this story began have cast out on their own adventures, one as a musician, the other toward medicine; my mother and father, Martha and F.J. O’Hara, who have done everything possible to help me on this journey, not the least of which is by constantly providing their love and example; my mother-in-law, Jean Rines, who gave encouragement and a way station at her home in Burns; my two sisters and brothers, who are happy for me in this success. In August of 2009, it was my sister Shannon who, as we surveyed a magnificent central Oregon view atop Pilot Butte and discussed the matter, simply said, “four years will go by anyway, so you might as well do it.”

All of this comes from God, the One true Giver, since “every good thing given and every perfect gift is from above” (James 1:17), and Who spared not His Son—why, then, should we fear to move mountains in His name? Through many intricacies before and along this journey,

the way has wondrously been made possible for me to complete this adventure. May He bless this labor and cause it to bear fruit for His kingdom.

## TABLE OF CONTENTS

Abstract .....	ii
Acknowledgements .....	iii
 CHAPTER 1	
Introduction.....	1
An Increasing Hispanic/Latino Population in U.S. Classrooms .....	2
Problem Statement .....	4
Theoretical Perspectives .....	6
Definition of Terms.....	7
 CHAPTER 2	
Review of the Literature .....	9
Introduction.....	9
The Culture-Cognition Link .....	10
Cognitive Orientations of Individualistic and Collectivist Cultures .....	13
Affective differences.....	14
Visual perception .....	17
Direct and indirect language .....	18
Culture-Cognition Interactions within Academic Tasks.....	20
Language.....	21
Argumentative Writing .....	24
Summary.....	27



Gaps in the Literature.....	28
CHAPTER 3	
Methods.....	29
Curricular Setting.....	30
Participants.....	31
Data Collection .....	34
Role of the Researcher .....	34
Task Design.....	35
Design and Procedures.....	36
Coding process .....	36
Procedures for collection of initial writing data.....	36
Pilot study .....	37
Reliability.....	37
Procedures for collection of final writing data.....	38
Organization.....	38
Direct/indirect language .....	38
Genre elements.....	38
Statistical analysis .....	38
Qualitative elements.....	39
Research Ethics .....	39
CHAPTER 4	
Findings.....	40

Introduction.....	40
Linear and Non-Linear Organization.....	40
Direct and Indirect Language.....	43
Narrative and Expository Elements .....	49
CHAPTER 5	
Discussion.....	52
Conclusion and Implications.....	59
Limitations .....	64
References.....	65
Appendix	
Common Core State Standards (CCSS) – Opinion Writing .....	91

## CHAPTER 1

### Introduction

Is light a wave or a particle? This provocative question was debated in science for decades in the years surrounding the dawn of the 20<sup>th</sup> century, ultimately answered in 1905 with a novel solution by Albert Einstein. Einstein's proposal hinged on a perspective that tested the finite limits of human imagination: it is perfectly possible for light to be *both* wave and particle at the same time. This insight proved to be revolutionary by challenging a prevailing preoccupation with polarities in the search for answers. But its creativity may have emerged from an important cultural predisposition on Einstein's part, one afforded by his Jewish background (Gimbel, 2012).

This may seem surprising in view of the fact that Einstein did not articulate ideas and methods that were overtly Jewish, nor was he even religious (Johnson, 2012). Rather, his intuitive, playful approach to scientific discovery echoed a Talmudic perspective toward *truth*: rooted in context, truth "comes only in glimpses," rather than as a wholly apparent luminosity. Though Einstein's outlook was indeed denigrated as "Jewish science" by German contemporaries mired in parochial methods, it is conceivable that some of the greatest discoveries in scientific thought may indeed have come about as a result of this characteristically Jewish scholarly mindset (Gimbel, 2012).

How do culture and cognition intersect? The example of Einstein's discoveries highlights the differentiating potential that social influences exercise upon thought. Increasingly, evidence is emerging that suggests cultural elements shape and funnel key cognitive processes such as attention, emotion, and language. These modern investigations are spread across a wide range of disciplines and methodologies, with as yet few connective frameworks within which to

organize discoveries. However, while recent cross-cultural comparisons have frequently sought to explore potential differences between Asian and Western groups (e.g., Dong & Lee, 2008; Nisbett & Miyamoto, 2005; Wang, Conway, & Hou, 2007), there have been far fewer explorations of Hispanic/Latino peoples, who are newly recognized as the nation's largest minority group (Aud, Fox, KewalRamani, & National Center for Education Statistics, 2010).

### **An Increasing Hispanic/Latino Population in U.S. Classrooms**

Historically, the United States has provided an unsettled berth for minority cultures. However, the acute pace of recent demographic change is challenging previously monolithic cultural patterns. Ronald Reagan's 1980 election as the President was held when the nation's population was 80% White and 6.4% Hispanic/Latino. By 2008, when Barack Obama became the President, the White population had decreased to 66%, whereas the Hispanic/Latino population rocketed to 15.4%, a rate of 184% during this 15-year period (Aud et al., 2010).

This soaring growth of the Hispanic/Latino population has significantly altered the enrollment demographics of U.S. schools (Dolan, 2009). However, the fact remains that 83% of U.S. public school teachers during the 2007-8 academic year were White, while Hispanic/Latino and Black teachers each accounted for just 7% of this total number (National Center for Education Statistics, 2012). Thus, the average classroom teacher is more likely than ever to be charged with the formal education of students whose appearance, backgrounds, customs, religious beliefs, and/or languages differ markedly from his or her own.

At the same time, significantly lower academic achievement on the part of Hispanic/Latino students seems to evidence a mismatch with traditional systems of learning (Dolan, 2009; Madrid, 2011). Recent data starkly illustrate the scope of the problem. In 2009, only 61% of Hispanics/Latinos graduated from high school, compared to 90% of White students.

Only 48% of foreign-born Hispanics/Latinos were estimated to possess a high school diploma, the lowest of any group (Ryan & Siebens, 2012). Overall, Hispanic/Latino children are among the least likely to attain a bachelor's degree (Aud et al., 2010).

Consistent with secondary and undergraduate school data, the academic achievement of Hispanic/Latino students also lags considerably behind that of White students at the elementary school level. The 2011 National Assessment of Education Progress (NAEP) scores revealed a persistent gap of over 20 points between White and Hispanic/Latino students, a difference that has remained essentially unchanged since 1992 in reading and 2003 in math (Hemphill, Vanneman, & National Center for Education Statistics, 2011).

Table 1  
Average NAEP Scores for Grade 4 Hispanic/Latino and White Students Enrolled in Oregon Public Schools

Group	Reading (2011) <sup>a</sup>	Mathematics (2011) <sup>b</sup>	Science (2009) <sup>c</sup>	Writing (2002) <sup>d</sup>
Hispanic/Latino	196	220	128	132
White	222	243	157	151
Difference	26	23	29	19
School Lunch Program <sup>e</sup>				
Eligible	204	226	138	138
Not Eligible	230	250	163	158

*Note.* The National Assessment of Educational Progress (NAEP) is typically administered to students in grades 4, 8, and 12, but is not administered in every subject at each grade level every year. This table includes the most recent data for each subject at the fourth grade level.

<sup>a</sup>(U.S. Department of Education, 2011b) <sup>b</sup>(U.S. Department of Education, 2011a) <sup>c</sup>(U.S. Department of Education, 2009) <sup>d</sup>(U.S. Department of Education, 2003) <sup>e</sup>The inclusion of data relative to School Lunch Program status is important to consider since Hispanic/Latino students in the district studied were approximately twice as likely to obtain free/reduced meals as compared to White students. This highlights potentially complicating variations between the groups regarding socioeconomic status.

The reasons for low Hispanic/Latino achievement are varied and complex (Madrid, 2011). They include typically poor school facilities (Madrid, 2011), clustering in high poverty schools (Aud et al., 2010), instructional factors (Bol & Berry, 2005), and uneven teacher perceptions (Bol & Berry, 2005; Rodriguez, 2012). Many of these students are English

Language Learners, whose abilities are often underestimated, with a disproportionate number identified as language disabled (Fletcher & Navarrete, 2011; Pearlman, 1978).

Several analyses of older assessment data from states with large Hispanic/Latino populations also document such deficits (Espinosa & Ochoa, 1986; Flores, 2007; Sanchez, Bledsoe, Sumabat, & Ye, 2004), confirming a historic dimension to the problem (Jiménez, 2000). Compounding the situation is a low level of socioeconomic status that continues to afflict most U.S. Hispanic/Latino students, with consequential impacts upon their educational circumstances (Bliss & Sandiford, 2004; Flores, 2007). In 2009, 77% of Hispanic/Latino fourth graders participated in the free/reduced lunch program (Aud et al., 2010). In 2010, fully 32% of Hispanic/Latino children nationwide lived in poverty (U.S. Census Bureau, 2011, November).<sup>1</sup>

However, some scholars note specific Hispanic/Latino cultural values that may strengthen educational learning opportunities for students if they are capitalized upon (Garcia & Jensen, 2007; García & Nájuez, 2011). Such values include family (Azmitia, Cooper, & Brown, 2009; Fuligni, 2001; Garcia & Jensen, 2007; Jiménez, 2000; C. Ortiz, Valerio, & Lopez, 2012) and a broad sense of community and interdependence (Civil & Quintos, 2009; Gaitan, 2004; C. Ortiz et al., 2012; F. Ortiz, 2001). In order to leverage the social capital of Hispanic/Latino students in ways that foster higher levels of achievement, educators require specific knowledge regarding how the cultural background of students interacts with cognitive responses to relevant academic tasks.

## **Problem Statement**

The situation of changing demographics has resulted in an infusion of a wide array of cultural perspectives that challenge historically homogeneous perspectives inherent in U.S.

---

<sup>1</sup> In 2010, Oregon's Hispanic/Latino poverty rate was an even higher 35.7%

schools. While there are efforts in many quarters to promote culturally competent pedagogy, educators are now facing a new layer of challenge with the adoption in 45 states of the new *Common Core State Standards (CCSS)*. The *CCSS* framework is marked by an alleged pedagogy that appears to stress greater analytical skills on the part of students in both language arts and mathematics (Porter, McMaken, Hwang, & Yang, 2011).

However, there are early concerns that Hispanic/Latino students will continue to encounter obstacles that will hinder achievement of the expressed *CCSS* goals of readiness for college and the workplace. An American College Testing, Inc. (2010) analysis of test data of over 200,000 11th grade students found Hispanic/Latino consistently scored more poorly than White students in all areas identified as relevant to the new framework. These results typify many studies that focus upon contrasting achievement results between Hispanic/Latino students, but stop short of exploring cultural factors ingrained in current standards and pedagogy. A remarkably small number of studies exist that assist our understandings of how various sociocultural groups attend to, receive, and interact with knowledge, with an almost exclusive focus upon comparisons between Asian- and European-origin sociocultural groups. Thus, there remains a significant gap in the literature regarding research relative to the interaction of culture and cognition among members of Hispanic/Latino groups, who represent the fastest growing population in the U.S. (Humes, Jones, & Ramirez, 2011).

How are cognitive processes such as attention and memory parsed through the prism of culture? Understandings regarding the dynamic interplay between cultural and cognitive processes are essential in order to create flexible educational settings and authentic learning conditions that reflect value for the varied experiences and mental schemata of all students.

The research questions for this study are:

1. What cognitive patterns are evident in the written argumentative discourse of fourth and fifth grade Hispanic/Latino and European-origin White students?
2. Are there differences between the two groups regarding these cognitive patterns?
3. If there are differences, do they appear to be influenced by culture?

It should be noted at the outset that the primary goal of this study is to elucidate knowledge that may effectively inform pedagogy that leads to success for all of our students.

### **Theoretical Perspectives**

Two important perspectives frame this study. The first is Kitayama and Uskul's (2011) recently developed *neuro-culture interaction model*, which proceeds from understandings that cultural beliefs and practices are collectively accumulated and biologically adaptive, with a direct ability of social context to "hardwire" the brain to respond in certain ways. It is complemented by the second perspective of *situated cognition*, which stresses the essential roles of community and context as mediating and interactive elements in learning, defining knowledge as simultaneously shared and uniquely personal (Whitfield, Klug, & Whitney, 2007; Zinchenko, 1995). Situated cognition accounts for learning that may modify hardwired patterns of thought, countering rigid perspectives of the information processing model of individual cognition in that it recognizes socially shared distributions of thought (Roth, 1998) and the uniquely human assignment of meaning (Bruner, 1990).

The literature review will proceed from a broad survey of the recently renewed field of culture-cognition studies to an examination of cultural intersections within academic tasks. The remaining chapters will carefully outline methodology, discuss key findings, and outline implications of this study, concluding with a brief review of limitations.



## Definition of Terms

*Argumentative writing* is a form of rhetorical discourse that requires the writer to take a position and logically defend it. Argumentative writing is a central feature of new writing goals outlined by the *Common Core State Standards*, which require “the ability to write logical arguments based on substantive claims, sound reasoning, and relevant evidence...” (*Common Core State Standards Initiative*, 2013). Opinion writing is subsumed within this genre, particularly at the K-5 level.

*Cognition* is the general term for the psychological/neurological component that deals with thought and learning, including “the acquisition, storage, transformation, and use of knowledge” (Matlin, 2009, p. 2).

*Common Core State Standards* (CCSS) is the title of a new set of K-12 educational benchmarks and practices regarding what students should “know and be able to do,” is a national evolution of the decades-long standards movement. The standards were developed and released by the *Common Core State Standards Initiative* (CCSSI), a group spearheaded by the National Governors Association Center for Best Practices and the Council of Chief State School Officers (*Common Core State Standards Initiative*, 2011; Ivey, 2011; Porter et al., 2011).

*Culture* may be generally defined as a flexible construct referencing a collective system of beliefs, practices, and values.

*Direct/indirect language* represent polar terms denoting the use of language that is explicit and relatively independent of context (direct), or deliberately vague and enmeshed with social context (indirect). Frajzyngier & Jirsa (2006, p. 515) describe direct language as including function that is synchronous with language form, whereas “an indirect speech act is an act that

purports to have one goal but actually aims to achieve another goal. Thus, a negotiation in bad faith whose aim is to provoke the adversary is an indirect speech act....”

*English Language Learner/ELL, English Language Developing/ELD and Limited English Proficient/LEP* may be construed as interchangeable terms denoting formally qualified second language learners in the U.S. K-12 environment. English Language Learner/ELL is the current official term included in current federal law that specifies qualifying characteristics of a student whose original language background is one other than English.

*English Language Development/ELD* is a generic term for a curricular program designed to specify, support and extend the language learning of ELL students. All states are required to have a set of ELD standards in place, and to assess the language level of each ELL student.

*Hispanic/Latino* are interchangeably used to denote a U.S. ethnic category defined as follows by the federal government: “A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. The term, ‘Spanish origin,’ can be used in addition to ‘Hispanic or Latino’ ” (Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity, 1997).

*L1* refers to a native speaker of a given language.

*L2* refers to a second language learner.

*Language proficiency.* The Oregon Department of Education provides the following description of proficiency for this study: “Students...are able to consistently listen to, read and demonstrate comprehension of an extensive range of complex and abstract grade-level information. They are able to speak and write using an extensive range of complex language with a level of accuracy and fluency that resembles native English speakers” (CTB/McGraw-Hill, 2007, p. 7).

## CHAPTER 2

### Review of the Literature

#### Introduction

As educators seek to adequately address the instructional and sociocultural needs of an increasingly diverse population of students, some important insights may be mined from investigations into points of intersection of culture and cognition. Such research can inform an understanding of relationships between those of varied backgrounds (N. Ross, 2004; Wong & Hong, 2005; Zunshine, 2010), and address such timely issues as equity (Avila & Moore, 2012; Matusov, 2008; Nagel, 1994). Relative to instruction, findings may help shape both the development and implementation of standards and curriculum (Matusov, 2008; Zipin, 2009), as well as the selection and adaptation of pedagogical frameworks and instructional strategies (Baptiste, 2001; Billings, 2009). Embedded within this conversation are scattered but promising investigations stemming from situativity<sup>2</sup> frameworks, which provide percipient perspectives regarding ethnic and contextual elements of individual classroom cultures (e.g., Maynard & Greenfield, 2003; Voigt, 1994).

Despite a broad spectrum of topics sharing the umbrella of culture-cognition studies, few studies specifically address instructional interactions, particularly at the elementary school level. Instead, much cross-cultural literature within educational research is limited to analyses of the

---

<sup>2</sup> *Situativity* is a categorical term encompassing related theories/perspectives that articulate knowledge as inextricably linked with the learner's context and social milieu (Durning & Artino, 2011). Examples include *situated cognition*, *situated learning*, *ecological psychology*, *distributed learning*, *cognitive apprenticeship*, and variations of *authentic learning* (Kaplan, 2000).

relationship of background variables to achievement (Acherman-Chor, Aladro, & Gupta, 2003; Cerna, Pérez, & Sáenz, 2009; Lopez, 2010; Pong, Strickland, Wise, & Mid-Atlantic Regional Educational Laboratory, 2012; Reardon & Galindo, 2009) and inequities within institutionally-embedded sociocultural relationships (Buriel, 1983; Cammarota, 2007; Plata & Masten, 1998; Steele & Aronson, 1995). This is extremely important research for “big picture” policy and design on a macrosystems level. However, it is also necessary to undertake specific investigations into the nature of learning at the interactive level of specific cognitive tasks, because this focused work relates immediately to instructional practices that have great influence on achievement. Such strategic studies include examinations into topics of learning such as family literacy practices (Saracho, 2007), ability grouping (Lleras & Rangel, 2009), oral language in young children (Gonzalez & Uhing, 2008), and affective dimensions of math performance (Stevens, Olivárez, & Hamman, 2006). However, to augment our understanding, we must look to various other disciplines for experiments and explorations into where culture and cognition may meet.

### **The Culture-Cognition Link**

Early culture-cognition investigations focused unsuccessfully on a search for *psychic unity*, a nebulous term that referenced a general cord of commonality that might be traced throughout all human beings, irrespective of race or cultural systems (Adams, 1904; Boas, 1921; J. M. Donovan & Rundle, 1997). Today, the meaning of psychic unity has contracted to a biological emphasis at its most elemental level: the brain and nervous system (Shore, 1996; Stigler, Shweder, & Herdt, 1990), the neurological substrate from which human cognition springs (Shore, 1996).

Human beings seem primed for connective social interaction, with the vast majority of brain maturation occurring after birth (Shore, 1996). The biological frame that initiates thought (Fosnot, 2005; Jonassen, 2009) supports a complex, malleable interchange with the individual's social environment. Pathways of neurological transactions, creative and difficult to link, have been vigorously investigated in both the biological and behavioral sciences (Adolphs, 2006). The complex patterns of activity generated by the brain result from layers of connectivity that interact in ways akin to the workings of numerous networks, with highly sophisticated effects that are not easily traced to individual components (Sporns, 2010). Thus, it is not always easy to clarify intersections of culture and cognition. Further, while all humans possess these basic processes, each culture customizes them for purposes specific to their needs (Geary, 1996).

Most current theories of culture acknowledge a highly interactive and robust system of meaning-making that responds continually to a multi-layered environment (DiMaggio, 1997), leading to a cumulative process described by Nagel (1994) as "the creation of collective meaning." Keesing (1974) sorted wide-ranging cultural theory into two main categories, *adaptive* and *ideational*. Adaptive cultural theories are rooted in corresponding evolutionary understandings in the physical world, constituting culture as an adaptation to the surrounding environment. Human beings share the same biologically based neural systems, but divergence occurs based on constraints in the environment. Such constraints establish mental borders (Keil, 1981) that may lead to efficiency with organization of new information (Hirschfeld & Gelman, 1994). In contrast, ideational systems are oriented toward the genesis and sustenance of communal thought. However, fulcrums of power, truth, and capital are noticeably absent from these definitions, despite their fundamental role in human relationships (Darder, 1991).

Recently, diverse disciplines have seen a renewed interest in the topic of the mutual, dynamic shaping between culture and cognition (e.g., J. S. Brown, Collins, & Duguid, 1989; Cicourel, 2006; DiMaggio, 1997; DiMaggio & Markus, 2010; Nisbett & Norenzayan, 2002). Studies of cognitive processes such as attention, perception, and memory (e.g., Dong & Lee, 2008; Nisbett & Miyamoto, 2005; Wang et al., 2007) and language (Lieberman, 2006), as well as emotion (Buck, 1985, April)—emerging as highly connected to cognition (Lench, Flores, & Bench, 2011)—illustrate emerging intersections with culture. The modern tool of neuroimaging is increasingly offering physiological evidence of specific brain regions that appear to respond to cultural cues, underscoring findings from more traditional sources of observational data (Cheon et al., 2011; Han & Northoff, 2008).

One broad area of discussion concerns the role of empathy as it is utilized for negotiating cultural boundaries. Empathy is an inclusive emotion that allows individuals to respond with compassion to another's discomfort or pain. The response system of empathy is distributed across multiple brain regions but forms two distinct networks, one affective and the other cognitive, that allow humans to literally feel the pain of others (Gutsell & Inzlicht, 2012), as well as to mentally infer another's state or position (Cheon et al., 2011; Hein & Singer, 2008). The social structure of a culture allocates roles for its own members, and also determines its response toward outgroup members. Evidence indicates there is a demonstrable neural response that heightens empathetic responses toward members of one's ethnic or racial group (Chiao & Mathur, 2010; Gutsell & Inzlicht, 2012; Xu, Zuo, Wang, & Han, 2009) that may become more pronounced among cultures that are primarily hierarchical as compared to those which are egalitarian in orientation (Cheon et al., 2011). Evidence from neuroimaging and EEGs indicate that prejudice arising from culturally defined ingroups and outgroups moderates biologically

based empathetic responses (Chiao & Mathur, 2010; Gutsell & Inzlicht, 2012). However, cognitive assumptions regarding out-groups appear malleable, and may thus contribute toward generating greater empathetic responses when negative associations are reversed.

In-group behavior is fostered by what Dijksterhuis and Bargh (2001) describe as *the perception-behavior link*, the propensity for humans to mimic the behavior of others through observation, underscoring the idea that culturally-rooted choices spring from highly contextualized environments (Stolte & Fender, 2007; van Dijk, 2006; Voigt, 1994). Individual agency appears to play an active role in the negotiation of subtle cultural dissonance through a discerning deployment of appropriate tools within social situations. In this regard, there appears to be an influential interaction of priming and perception, hinting at the existence of a degree of permeability that allows for flexible interchange between cultural and cognitive cues (Oyserman & Lee, 2008; Wong & Hong, 2005).

### **Cognitive Orientations of Individualistic and Collectivist Cultures**

A significant portion of culture-cognition research explores potential differences between individualistic and collectivist cultures.<sup>3</sup> An emerging theme of the results of these studies is the tendency for members of individualistic cultures to gather and process information by isolating attributes of a given scenario, while members of collectivist cultures prefer an integrative approach that incorporates contextual or interconnected aspects.

This tendency appears initially reflected within language, wherein clues to a culture's conception of personhood and relational distance are reflected in pronoun usage (Kashima &

---

<sup>3</sup> Cultures that are individualistic in nature are alternately referred to as *independent* in orientation, whereas collectivist cultures are also referred to as *interconnected*. Various terms are used here to reflect researchers' preference.

Kashima, 1998). For example, use of specific personal pronouns such as *we* and *I* in writing has been demonstrated to be an illuminating measure of connection with a specific group (Íñigo-Mora, 2004; Rass, 2011; Sherblom, 1990). Cross-cultural analysis of pronoun usage has associated those linguistic systems that drop the usage of specific pronouns with a greater collectivist orientation (Kashima & Kashima, 1998). This includes the Spanish language, which consistently contextualizes interpersonal distance through inflections. Koreans have been shown to prefer the use of possessive plural pronouns more than Americans (Na & Choi, 2009). However, priming introduces a fluid aspect to studies of cross-cultural usage of pronouns since specific context can induce favorability toward either collectivist or individualistic mindsets (Oyserman & Lee, 2008).

This tendency to either segregate or connect appears to interact with interpersonal assessments. Perceived reasons for individual behaviors by members of individualistic cultures are more likely to result from judgments based on ascribed attributes or traits, while those made by members of interdependent cultures are more apt to incorporate contextual or situational elements (Church et al., 2006; Na & Kitayama, 2011). Perhaps one of the clearest examples of this dichotomy exists in Western academic traditions, which continue to be subject to European notions of separateness that have produced what Gusa (2010) describes as an “encapsulated brain,” a term that denotes the divorce of emotive elements from strict reason and data. Pervasive among higher education institutions with predominantly White enrollments, this mindset ultimately discourages a full integration of student experiences and results in a screening of talent reminiscent of an academic version of the Darwinian concept of *survival of the fittest*.

**Affective differences.** A distillation of individualism and objectivity to the exclusion of affective elements may impact facts, concepts, or pedagogy in a deficit manner, particular given



modern understandings of brain and learning research. Emotional development is intertwined with broader cognitive growth (DiMaggio, 1997; Jahoda, 1986). For example, it is likely that cognitive structures dealing with mathematical understandings include an affective element to promote engagement with activities necessary for further successful development (Geary, 1996; Greenough, Black, & Wallace, 1987; Marzano, 2007).

Although emotion appears to universally play a critical role in prioritizing the recall of memories, emotional experiences are filtered through a cultural lens which continually determines and shapes the development of autobiographical memories (M. Ross & Wang, 2010; Wang & Fivush, 2005), the earliest personal memories recalled by an individual. Research exists that suggests that the content of such memories differs between individualistic and collectivist cultures. In individualist cultures, autobiographical memory is distinctly centered upon the individual, whereas in collectivist cultures, memories feature themes of interconnectedness and social ties (Jobson & O'Kearney, 2008; Peterson, 2009; Wang, 2004; Wang & Fivush, 2005). One qualitative study featured a significantly higher amount of written elaboration by Australian undergraduates in comparison to a similar group of multi-ethnic Asian undergraduates (Jobson & O'Kearney, 2008). Some evidence indicates European-Americans accumulate a larger quantity of positive memories than do Asians (M. Ross & Wang, 2010). However, there was no difference in preference in this regard for older American and Korean adults, suggesting the aging process may represent a sensitive variable to consider in culture-cognition research (Kwon, Scheibe, Samanez-Larkin, Tsai, & Carstensen, 2009; D. C. Park & Huang, 2010).

Some research highlights distinct emotive differences between Asian and Western cultures regarding other elements of interpersonal communication, with frequent comparisons

made between Americans and Japanese, who utilize language and silence to structure social boundaries, have lower rates of verbal animation in comparison to Americans, and have higher rates of shyness (Keaten, Kelly, & Pribyl, 1997). Culturally-generated patterns of communication on the part of Japanese may provoke misunderstandings with Western populations and hinder growth in L2<sup>4</sup> development of English language proficiency (Akazaki, 2010). Yuki, Maddux, & Masuda (2007) used emoticons to demonstrate that inherent differences between Japanese and Americans populations regarding attention to features of facial expressions occur based on the level of emotional restraint typically present within a culture, while other studies have indicated variation in Asian and Western responses to expressions in photographs selected by researchers to represent fear (Komaki, Moriguchi, Ohnishi, & Maeda, 2006; Russell, Suzuki, & Ishida, 1993). Chinese and American children have been shown to manifest differences in expressions of disappointment (Garrett-Peters & Fox, 2007). A brief comparative analysis of American and Japanese comic books (Feng & O'Halloran, 2012) found clear preferences regarding settings of characters' emotional expression, with solitary settings typical of Japanese characters.

Even when individuals are far removed from the country of their primary culture, they may retain its original emotive characteristics. Analysis of a sample of Americans descendents of Scandinavian and Irish immigrants methodically pared away other factors to determine that emotive styles were resonant of cultures of origin, with Scandinavian-Americans maintaining more reserved reactions and Irish-Americans more expressive reactions (Tsai & Chentsova-Dutton, 2003).

---

<sup>4</sup> L2 is an abbreviated term for an individual using a language other than his or her native language. Similarly, L1 references an individual's use of his or her native language.

**Visual perception.** Evidence suggests the existence of a cultural sculpting of neural pathways of visual perceptual processes, accomplished through the accumulation of preferred tasks that share similar routines (Han & Northoff, 2008; D. C. Park & Huang, 2010). Here, too, a theme of polar cultural orientations is emerging. Results are tentative, but they seem to point toward the same tendency for individualistic cultures to segregate information and collectivist cultures to interconnect it (Chua, Boland, & Nisbett, 2005; Goh et al., 2007).

An experiment focusing upon cultural differences in attention found that Japanese and American undergraduates focused attention differently when viewing a picture of a line framed by a square, known as a framed-line test, with Japanese participants better able to incorporate contextual factors and Americans demonstrating greater ability with replicating an isolated segment of the drawing (Kitayama, Duffy, Kawamura, & Larsen, 2003). Various findings concur with this tendency (Boduroglu, Shah, & Nisbett, 2009; Chua et al., 2005; Masuda & Nisbett, 2006), while other studies have failed to elicit this distinction (Evans, Rotello, Li, & Rayner, 2009; Mielle, Zhou, He, Rodger, & Caldara, 2010). In one study that used modified versions of Kitayama et al.'s framed-line test, Japanese and American children did not display this difference as a whole until they were at least six years old, suggesting a determinate role of culture (Duffy, Toriyama, Itakura, & Kitayama, 2009). Interestingly, individuals living in a culture other than their own have been found to respond to such tasks in ways similar to their host culture (Kitayama et al., 2003). This suggests the potential of a flexible aspect to culturally influenced visual perception.

Emerging evidence also indicates that Asian and Western populations have varied responses regarding engagement of neural regions for specific visual tasks. An experiment that combined a picture task with neuroimaging of American and Chinese young adults found

pronounced differences in object processing, which Americans engaged in more frequently independent of context (Gutchess, Welsh, Boduroğlu, & Park, 2006). Neural areas associated with object processing and emotional response were activated at higher levels among Americans, while areas associated with discernment of contextual differences were similarly activated across both groups.

Similarly, another study (Hedden, Ketay, Aron, Markus, & Gabrieli, 2008) combined results from questionnaires and MRI imaging to measure correlation between cultural influences and neural regions activated in response to tasks requiring culturally unfamiliar approaches to solutions. They provided young adults of East Asians backgrounds who were recent U.S. arrivals and Americans of European ancestry a simple geometric motif with salient and contextual elements in order to study their responses during viewing. Both groups employed identical neural processes to approach all tasks, regardless of the degree of cultural consistency or inconsistency. However, when specific neural regions associated with attention were activated during task engagement, the groups differed regarding response to task type, with greater activation occurring when respondents were engaged in a culturally unfamiliar task. Thus, for East Asians, less familiar tasks were those that were segregated from context, while for Americans, less familiar tasks were dependent on context. These results extend an influential role of culture to higher—rather than solely initial—levels of visual processing.

**Direct and indirect language.** Discussions of individualist/collectivist orientations link to cultural preferences for the use of *direct* and *indirect* language. Broadly defined, *direct* language is that which is explicit about the function for which it is intended, while *indirect* language carries meaning that must be inferred because of a more oblique presentation (Frajzyngier & Jirsa, 2006). Levels of direct or indirect language may vary between cultures.

This is especially true when framed with inherent differences between individualistic and collectivist cultures (Holtgraves, 1997), although some caution is warranted regarding sweeping generalizations. In this vein, Wu & Rubin (2000) point out the rapidly increasing ease with which cultures may now interact may easily lead to infusions of various styles that further blur individual cultural distinctiveness.

Much literature related to direct and indirect speech examines its use relative to interpersonal relationships and the mediating influences of courtesy and face-saving (Frajzyngier & Jirsa, 2006). Such sociocultural modes lead to an overall preference that is imprinted upon language and communication. Generally, a direct style of discourse is more preferred by individualistic cultures, while indirect language is characteristic of collectivist cultures (Triandis, 1995). For example, some cross-cultural research indicates Americans manifest a more confrontational approach to conflict than do people from various Asian cultures (Holtgraves, 1997; Ting-Toomey et al., 1991), with a corresponding directness observed in American discourse (Holtgraves, 1997; Wu & Rubin, 2000). However, the use of English in American culture also has a place for indirect language, highlighting the inextricable element of contextual knowledge as key to understanding implicit messages of indirect language in writing (Hinkel, 1997).

Alternately, the language of the Mexican people, who may be characterized as members of a collectivist culture, has accrued an arcane element that allows it to deflect controversy and animosity (Riding, 1989). Mexican Spanish is replete with the use of indirect language, from politicians who carefully camouflage communications with both the people they represent and foreign officials abroad, to the common people who tuck various meanings into the pockets of

formalized language. There is a general belief embedded within these interactions that direct language is equivalent to rudeness.

### **Culture-Cognition Interactions within Academic Tasks**

The inherent challenge of the identification of cultural intersections within responses to academic tasks is to accurately differentiate these from the effects of formal schooling, which effectively acts as an additional layering of culture (Geary, 1996). In balance, it appears that a routine of formal academic tasks introduces a shaping that supersedes prior influences. Pontius' (1997) study of two Ethiopian tribes, the unschooled Kara and the literate Hamar, and research with Nigerian 4<sup>th</sup> graders' drawing skills (Mshelua & Lapidus, 1990) indicate that the influence of formal education and practice may mitigate differences originating from culture. Similarly, Huntsinger, Jose, Krieg, and Luo's (2011) longitudinal comparison of the drawing skills of Chinese and American children found a correlation between explicit guidance in basic drawing skills of Chinese students to their ability to produce more technically proficient illustrations. Differences in mathematics curriculum was suggested to influence the outcome of a comparison of German and Cambodian students aged 15 to 44, with an overreliance on analytic approaches by the Cambodian school system likely to have negatively impacted math scores (Janssen & Geiser, 2012).

Formal education also appears to exert a greater influence on working memory capacity than does culture (Lan, Legare, Ponitz, Li, & Morrison, 2011). The interaction of executive function and achievement was explored in one study by administering simple, memory-related tasks to 258 preschoolers, of whom 119 were Chinese and 139 American (Lan et al., 2011). But while finding no differences in results of tasks that summoned working memory, it was possible to discern differences that favored Chinese students in the areas of attention and inhibition, two

processes necessary for effective use of working memory. Lan and his colleagues suggested that increased achievement on the part of Chinese students with inhibition-related tasks reflects a strongly held value of self-control inherent in broader Chinese culture.

**Language.** A clear example of culture-cognition interaction language includes the orchestration of various neural functions that are highly responsive to cultural cues and shaping (Lee, Chiang, & Hung, 2008). Cumulative enactment of everyday language produces a systematic and predictable grammar among a particular cultural group (González-García, 2009). Geography may reinforce differences, even between groups who share a language. New Zealanders' use of English, for example, is marked by a specific use of greater animacy, subsequently provoking subtle changes in language that differentiate it from American English (Bresnan & Hay, 2008).

Events may intervene to significantly shape language expression. The cultural collision of Spanish Europeans with Andean peoples propelled the development of hybrid languages, producing a patchwork across this region that includes the linkage of Andalusian to the languages of present-day Hispanic populations (Coronel-Molina & Rodríguez-Mondoñedo, 2012). Additionally, the orthography of a language may impact the cognitive demand inherent in reading tasks. The intricate and complex Chinese picture system, replete with a myriad of tiny variations of details, may by necessity summon greater amounts of working memory and attention on the part of young Chinese students (Hoosain, 1986; Lan et al., 2011). By contrast, the simplified English phonetic system may streamline reading task performance on the part of American children (Lan et al., 2011).

Studies that address the question of whether or not language interacts robustly with directional orientation have drawn mixed results. A quantitative analysis of spatial task

responses of Dutch and Namibian children and adults found native language consistent with preferred directional orientation, with preference maintained steadily across both age groups and increasing task complexity (Haun, Rapold, Janzen, & Levinson, 2011). However, quantitative analysis of the results of a series of spatial reasoning experiments with Mexican Mayan populations produced inconsistent results (P. Li, Abarbanell, Gleitman, & Papafragou, 2011). For Central American populations on the whole, there does not appear to be a consistent preference for a specific frame of reference (O'Meara & Pérez Báez, 2011). There is likely some flexibility involved in this area, in which more complex tasks resist routine linguistic expression, and are thus less likely to be bound to a particular lexicon of directionality (P. Li et al., 2011).

Although language is an innate human ability, reading does not spontaneously arise in all cultures (Geary, 1996). Evidence suggests dyslexic issues may be tied to culture: Chinese dyslexic readers, for example, exhibit deficit processing in different brain regions than do American dyslexics (Wai Ting, Perfetti, Zhen, & Li Hai, 2004). A quantitative examination of cultural differences between Chinese and American undergraduates revealed a limited but important correlation within both cultures that linked false recall of words on a list to lexical associations, which stem from culture, lending some evidence to the position that culturally-rooted experiences influence language and memory interactions that, while universal as a process across cultures, differ in specifics (Lee, Chiang, & Hung, 2008).

L2 learners must negotiate various neural byways that are culturally shaped as they seek to understand and express a new language. The phenomenon of cross-linguistic inference (CLI) is a complex, integrative process that occurs as second language learners prioritize the use of familiar linguistic structures while expressing a new language (Jarvis & Pavlenko, 2007). CLI taps numerous factors that may impact the use of these structures within the less familiar



language, including language development stage, affective elements, and intellection, making it a more sophisticated interaction than the act of transfer. Written responses offer a way to capture some of these prioritizations.

Along these lines, a small but significant group of studies has extended qualitative focus to Middle Eastern writing by seeking comparisons to the writing of native English speakers. All find a strong influence of the Qur'an relative to content and style upon the work of Arab writers. Jordanians interweave Qur'anic references when seeking to persuade, both to underscore authority within a debate and to instill an emotional connectivity (Al-Khatib, 1994). This reflects Sa'adeddin's (1989) distinction between the aural connectivity that Arab authors strive for, and the quiet and composed linearity that English authors exhibit. Others have noted a reflection of broad elements of Qur'anic style in Arabic writing (Al-Khatib, 2001; Rass, 2011), including an elaborative approach (Derrick-Mescua & Gmuca, 1985).

These features are also apparent in the English writing of native Arabic speakers (Rass, 2011; Sa'adeddin, 1989). A study of 18 female students engaged in teacher preparation at an Arab college based in Israel examined the influence of Arabic culture on the English writing process (Rass, 2011). All participants were L1 speakers learning how to effectively write arguments in English. An analysis of their English writing assignments revealed features of repetition, communality, and religious belief that are attributable to Arabic culture.

Vasquez-Ayora's 1977 (as cited in Montaña-Harmon, 1991) work commenting on professional translation noted that the Spanish language possesses a natural flexibility that spills over from sentences into the framework of paragraphs, and that flatness is induced when formal Spanish written discourse adopts a highly structured framework for ideas. Similarly, Connor's

1996 synthesis of research on Spanish writing highlights a uniform characteristic of ornate expression, manifested with longer sentences, flowery lexicality, and relaxed structure.

Montaño-Harmon (1991) analyzed 100 expository texts from Mexican and Anglo-American high school students. Findings indicated that Mexican writers clearly evidenced a repetitive strategy that used rephrasing of the same idea to heighten emphasis, employing an additive strategy both within sentences and throughout the paper to elaborate further on the original main idea. Conversely, Anglo-American students employed enumeration and linearity, using shorter, direct sentences to convey meaning. A pattern of breaking deliberately from the original topic, with a subsequent return using a signaling word or phrase, was especially exhibited by Mexican writers in a style dubbed "conscious deviations" by Montaño-Harmon (p. 422). Further, the researcher cites Domínguez' (1976) work that surveyed Mexican writing textbooks, all of which stressed eloquence as a necessary attribute of ideal writing, thus requiring—among several practices—“elaborating a given idea in writing in various ways as one attempts to develop the theme in greater depth...” (Montaño-Harmon, 1991, p. 418). However, only two out of the 25 textbooks devoted explicit attention to the structuring of paragraphs. In both of these books, chronology, narrative and other generalized forms were used as exemplars for organization.

**Argumentative Writing.** Greek philosophy and logic construed by Aristotle and Euclid provided the foundation for Western rhetoric, which influenced the modern structure of the essay, one that is highly sequential and economical as an assembly of meaning that spares no digression from a single idea articulated within each paragraph (Hinkel, 1997; Lloyd, 1990; Mercier, 2011; Rocci, 2006). This, of course, does not preclude the development and historical implementation of other systems of logic throughout the world. For example, while Chinese and

American writers share essential beliefs about structuring an argumentative essay, they differ distinctively in style in ways that may be traced to historical Greek and Chinese philosophies (Liu, 2005; Mercier, 2011).

Kaplan (1966) offered that logical expression is captured differently depending on culture, with Western cultures displaying a very linear<sup>5</sup> approach, Middle Eastern cultures a parallel technique, Chinese a spiral form, and speakers of Romance Languages such as Spanish a meandering, digressive style. Cultural reflections appear in the structuring of English writing of native Chinese and Spanish speakers (Norment, 1984). Silva (1992) developed a meta-analysis of 72 studies that examined features of multiple genres of writing by L1 and L2 learners from various cultural backgrounds, synthesizing evidence of important stylistic and structural differences between the groups. This led him to suggest an exploration of culture as one of several potential sources for these differences. Reppen and Grabe's 1993 (as cited by Connor, 1996) comparative study of 545 texts written by elementary school L1 Spanish and L1 English students in the U.S were found the former to utilize an elaborate approach in English writing similar to that of their native language.

---

<sup>5</sup> In later work, Kaplan (2006) acknowledges an ethnocentrism inherent in assigning a linear metaphor to Western expression, noting those from other cultures who reminded him that they perceived their own culture as linear, and others non-linear. Rocci (2006) notes a contradiction regarding the ascription of linearity to English essays, which are typically deductive regarding logical expression in that they essentially begin with a conclusion that is followed by support. We will use the metaphor of linearity to refer to the organization of discourse that proceeds from one idea to a new one, with corresponding details clustered immediately with each idea.

Sorting out cultural effects inherent within argumentative writing<sup>6</sup>—a major emphasis of the *Common Core State Standards*—is rarely a clearly cut endeavor, but some influences seem to have emerged. An exploratory study of the essays of Hungarian and North American university freshmen displayed differences in thesis placement and overall structure ascribed to respective influences of Classical Humanism and Progressivism (Godó, 2008). The argumentative writing of American college students was found to be more direct than that of Taiwanese students, with this difference persisting within Taiwanese writing expressed in English (Wu & Rubin, 2000).

On the other hand, differences in thesis placement between Chinese and American students' writing was noted as reflective of varied curriculum sources (Lhiu, 2009). Similarly, Kamimura's (2011) study of 640 argumentative and expository essays of first and second language learners—primarily Japanese undergraduates learning English—found differences in organization of the responses to be based on prompt type and phrasing. However, Mercier (2011) argues differences in argumentative style should not be treated superficially, and that such variations are rooted in both context and the way reason is utilized by a people, both areas influenced by culture.

Studies that exclusively compare the argumentative discourse of native English and native Spanish speakers of Mexican descent are rare and hampered by small or ineffectual samples. Nevertheless, two investigations hint at important contrasts. Zhu's (2001) interviews

---

<sup>6</sup> The genre of *argumentative writing* includes the logical establishment of claims, and may include expressions of opinion if supported factually. The *Common Core State Standards* include a new curricular emphasis upon argumentative writing, which is addressed K-5 at the level of expression of opinion.

and subsequent examinations of the English argumentative essays of 14 Mexican undergraduates revealed a conscious recognition of the challenge of the more direct rhetorical style of English. However, Zhu also found that several essays displayed anemic development of paragraphs and a lapse into a different genre, which the writers did not appear to recognize as inappropriate for argumentative writing.

Incorporating qualitative elements within a quantitative methodology, Spicer-Escalante (2005) compared the argumentative writing of three small groups of undergraduates: five native Spanish speakers born in Mexico, ten U.S. Spanish heritage speakers almost exclusively of Mexican descent, and eight U.S. Spanish second language learners who were White. Her rhetorical analysis of both English and Spanish texts from all groups found characterizing patterns, including the propensity for both native Spanish speakers and Spanish heritage speakers to incorporate broad knowledge that included personal experiences, a tendency on the part of White students to aggregate facts without connective reflection, and a unique approach of Spanish heritage speakers that combined features of the other two groups.

### **Summary**

The emerging field of culture-cognition research is building from studies across many disciplines that seek to identify points at which social influences intersect with individual thought processes. The modern technological tool of neuroimaging has provided recent evidence and fresh insight germane to this task. With human brain maturation continuing for two decades following birth, culture likely plays a prominent role in molding cognitive operations.

Much recent culture-cognition research has examined potential differences between individualistic and collectivist cultures. A common theme, surfacing across the domains of memory, emotion, interpersonal communication, visual attention, and judgment, depicts

individualistic cultures as likely to focus on attributes, and collectivist cultures as likely to employ a contextual or holistic perspective. Relative to this, individual cultures may exhibit a preference for the use of either direct or indirect language within discourse.

Formal academic tasks may exert a moderating influence on cultural elements that influence responses to tasks that are academic in nature. Further, a specialized set of skills may arise in one culture but not another, based on a need for adaptation and to meet certain goals. The human ability for language is a combined cultural-cognitive capacity for expression, which in turn affects other cognitive processes. Writing may effectively capture both cognitive and cultural influences, although disentangling these influences is often a complex task. Thus, there exists some limited evidence suggesting there may be distinctly cultural variations in argumentative and other modes of writing.

### **Gaps in the Literature**

There are a number of key gaps in the literature this study addresses. First, it is broadly apparent that most cross-cultural studies include participants who are Asian and/or White of European descent, while few studies address culture-cognition interactions among Latin American populations. Concerning this limited research, topics are scattered across a spectrum, warranting more depth. A second note, again regarding participants, is that most are adults—typically undergraduates—with little research available regarding elementary school children in particular, especially in the area of argumentative writing and other academic domains. Third, much culture-cognition literature is related to highly experimental research that, while often insightful, does not directly connect with ecologically valid tasks likely to be implemented within the classroom. This is especially true of tasks that are oriented toward the *Common Core State Standards*, which are only just beginning to be implemented in many locales.

## CHAPTER 3

### **Methods**

The purpose of this exploratory study was to glean fresh insights into ways in which culture interacts with cognitive processes inherent in learning, with specific reference to argumentative writing tasks grounded in the new *Common Core State Standards*. In doing so, it addresses current gaps in the literature regarding Hispanic/Latino populations, elementary school students and argumentative writing, and culturally related interactions that surface during engagement with ecologically valid academic tasks and assessments, particularly those related to the CCSS. To recall, the research questions are:

1. What cognitive patterns are evident in the written argumentative discourse of fourth and fifth grade Hispanic/Latino and European-origin White students?
2. Are there differences between the two groups regarding these cognitive patterns?
3. If there are differences, do they appear to be influenced by culture?

The choice of an exploratory approach was appropriate for several reasons, beginning with the topic itself. Cross-cultural cognition studies represent a relatively new and wide-ranging field, with little extant literature specifically related to Hispanic/Latino culture. Additionally, the design of the present study highlights practical discovery framed within a context that will be highly relevant to this population. Finally, this research represents an infusion of work with scholarship in the spirit of Mills' (1980) "intellectual craftsmanship" in that it situates the practitioner within a problem that is both immediate and important, building on previous literature in ways that illuminate rather than overpower a timely solution.

## Curricular Setting

Academic work samples represent a local component of Oregon's formal assessment process, and are a complement to the Oregon Assessment of Knowledge and Skills, a statewide summative instrument. Oregon law requires public schools to administer and collect work samples yearly from students in grades 3-8 as part of a local assessment plan.<sup>7</sup>

In this eastern Oregon school district, this requirement is enacted at the building level, with many schools choosing to implement a more frequent routine of quarterly or monthly collection, as well as extending collection in some form to the primary grades. This includes adherence to a protocol that is defined in Oregon's 2011-12 Test Administration Manual, including the stipulation that "(a)lthough individual student work samples may grow out of preliminary group work, students must complete their work samples independently with no inappropriate feedback, coaching, or editing suggestions from anyone, including teachers, parents, or peers" (Oregon Department of Education, 2012, pp. M-6). Students complete separate tasks for writing, speaking, mathematics problem solving, and scientific inquiry. Instruction preceding work samples should address specific Oregon standards that support successful completion of a task. In all assessment cases, ideal student responses will reflect the integration of a wide range of knowledge and skills and exhibit thoughtful applications of these.

The 2014 implementation of the *Common Core State Standards (CCSS)* has initiated important shifts that will impact instructional and work sample content. Some of these shifts are likely to summon more vigorous applications of synthesis and analysis from students. To explore these changes, this school district during 2012 to capitalize on a unique opportunity to draw work sample tasks from *CCSS* resources, rather than from typical Oregon prompts.

---

<sup>7</sup> OAR 581-022-0615



To satisfy Oregon Essential Skills requirements, work samples must be scored with the use of an official, state-approved scoring guide. Student responses are scored across a number of traits using a rubric that addresses both quantitative and qualitative dimensions that are ultimately translated into numerical scores. Although classroom teachers often undertake the responsibility of scoring their students' work, this protocol is sometimes organized as a shared responsibility across grade levels, and may be completed by any certified staff member with appropriate training.

### **Participants**

Student responses for this study were collected from a rural eastern Oregon school district that serves a town with a population of approximately 11,000. The 2011-2012 enrollment of the district included 60.7% Hispanic/Latino students and 34.2% White students. The average percentage of students qualifying for free/reduced lunches at four of its five elementary schools was 85%. Data from the current 2012-2013 academic year indicated that overall district participation included 48.9% Hispanic/Latino students and 26.3% White students. Student participation in the district's English Language Learners (ELL) program was 14.8%, compared to 8.9% statewide.

The sample was drawn from a district set of K-5 student work samples that included responses collected from all five elementary schools. The study's participants included 74 students total, of whom 37 were Hispanic/Latino ELLs and 37 were European-origin White students. There were 39 female students and 35 male students. Only fourth and fifth grade Hispanic/Latino ELLs who had scored a proficiency level of 4 or 5 on the latest ELPA exam, or who had exited the district ELL program within the year prior to the study, were initially included for analysis. However, ELL status for one class was not designated, so it is possible

that responses from several students were overlooked for this analysis. From 38 original responses, one response was discarded for demonstrating a level of writing skill deemed not proficient based on original work sample scores (a “2” for each of six scorable traits using the official six-point Oregon scoring guide). The remaining samples included a mixture of scores (from “2” to “5”). This set represented approximately 97% of available responses from the original eligible district population. Responses were included from each elementary school, with 14 as the greatest individual number (from a town school) and five the least number (from two schools, each a smaller, rural school).

After collecting Hispanic/Latino ELL responses, 37 White student responses were then selected from a pool of 131 (28.2%) based on the following criteria:

1. In order to equalize the level of writing proficiency demonstrated for this task, samples were chosen that matched Hispanic/Latino ELL samples by grade level regarding the original scoring on a six-point scale for the six traits delineated by Oregon, or were within one point in any trait. Scores were not included for six Hispanic/Latino ELL responses, so these responses were assigned a generalized skill level based on the researcher’s knowledge of writing skills at this grade level and experience as a trained writing scorer. A similar routine was applied to eight White responses that did not include scores.
2. To minimize effects of different instructional approaches and to broadly simulate diversity across the district, responses were included from all elementary schools. The greatest individual building amount was 11 (from a town school), and the least amount was six (from two schools: one town school and one smaller, rural school).

Additional information about participants is displayed in Tables 2 and 3.

Table 2  
*Additional Demographic Characteristics of Participants as a Percentage of the Sample*

Birthplace	<i>n</i>	U.S.: District Town	U.S.: Elsewhere	U.S.: Total	International
Hispanic/Latino	37	46.0	32.4	78.4	21.6 <sup>a</sup>
White	37	56.8	43.2	100	0.0
Contiguous Years in District Prior to Task Completion	<i>n</i>	Five or more years	Average years <sup>b</sup>	Range of years <sup>b</sup>	
Hispanic/Latino	37	46.0	3.8	0.33 - 7	
White	37	67.6	4.4	0.33 - 6	
Home or Priority Language <sup>c</sup>	<i>n</i>	Spanish	English		
Hispanic/Latino	37	100	0.0		
White	37	0.0	100		

<sup>a</sup>All international births occurred in Mexico. <sup>b</sup>Expressed as counts of years. <sup>c</sup>Determined by the district's *Home Language Survey*, completed at registration by the child's parent/guardian.

Table 3

*Additional Background Characteristics of ELL Students: Participation in District English Language Development (ELD) Program as a Percentage of the Sample (n = 37)*

Woodcock-Muñoz composite score <sup>a</sup>	1	2	3	4
	8.1	13.5	73.0	5.4
Date of initial identification prior to task	< 1 year	1-2 years	3-4 years	5-6 years <sup>b</sup>
	5.4	13.5	18.9	62.2

*Note.* The district's ELD plan requires all students to be screened and placed within the ELD program within the first 30 days of the school year. For students who arrive after the beginning of school, this timeline is compressed to ten days.

<sup>a</sup>The *Woodcock-Muñoz Language Survey*, the district's initial ELD program screening tool, identifies a student's *Cognitive Academic Language Proficiency (CALP)*. The version used for screening incorporates this information into five levels, expressed within a composite score of 1-5, with a score of 5 designated as the most advanced level of English proficiency. A score that is less than 4 generates automatic consideration for placement in the ELD program. Additional data may also be included within team discussion, particularly for students who score higher than a 3. No ELD students in this sample scored a 5 at their initial screening, so only data for levels 1-4 are included.

<sup>b</sup>While this data may appear to conflict with that presented in Table 1 regarding contiguous years in the district, it in fact represents the reality that students have moved out of the district and returned within this time frame

## Data Collection

Writing prompts were administered by K-5 classroom teachers using standard, district-approved routines for work sample collection at various times during April and May 2012.

Demographical data was compiled for each response during this period. Samples were scored according to standard building routines. In late May, responses were utilized by instructional coaches from the district for analysis of program strengths and weaknesses. Data was reanalyzed for this study with the district's permission.

## Role of the Researcher

The researcher currently holds a K-8 district instructional coaching position within this school district. This role includes both professional development and curricular responsibilities. Within the course of these duties, the researcher organized and communicated specific *Common Core* shifts that would be introduced as part of Spring 2012 work sample collection, and led a review of student responses by district instructional coaches.

The researcher has over ten years of experience with the work sample process across the K-5 grade levels, primarily as an elementary classroom teacher and a building and district writing coach (she was not involved in the original scoring of these student responses). This experience includes responsibility for designing and implementing instruction that is foundational to successful student work samples, training experiences, scoring, and organizing professional development for other teachers. As a public school educator for over 20 years, she has taught all grades K-5 and will draw on an experienced knowledge of writing instruction for this study.

### **Task Design**

Tasks were originally compiled by the researcher for district purposes to reflect impending *Common Core State Standards* curricular shifts. Each task consisted of at least one prompt that students responded to. All fourth and fifth grade students responded to a single prompt that required writers to construct an argument for a particular position. Only one prompt was made available so as to increase both instructional dialogue and the pool of responses that might be similarly compared. This “field trip” prompt was from a compilation designed for persuasive work samples, and was selected based on its resemblance to a *CCSS* exemplar response for fourth grade (also designed to express support for a field trip), its ability to activate background knowledge for the majority of its students, and its motivating potential:

Write a letter to the school principal or PTO in support of a field trip to learn more about a topic you have been studying (any topic, any place). Be sure to thoroughly answer the question of why your field trip should be funded.

The *CCSS* shift toward a major emphasis upon writing to support an opinion represented a new and often difficult curricular focus for most elementary teachers. Teachers were provided a

selection of resources designed to support their instruction in these areas, including a traditional persuasive essay template, but were not required to use these. However, it was not acceptable for teachers to require students to use templates during the window of actual work sample collection.

### **Design and Procedures**

This was primarily a quantitative study that began with isolating variables through successively refined process of coding, continued with additional quantitative analysis using statistical tools, and concluded by providing augmented understanding of context through the inclusion of student excerpts drawn from response data.

**Coding process.** Open coding was initially used to identify divergent responses of Hispanic/Latino ELL and European-origin White students. Extended experience with the curriculum content, developmental range, and work produced by this age group were important assets for this initial stage of discernment. Areas of initial differentiation included aspects of structure, language, experiences, and other potentially cultural features that have been suggested to interact with cognitive tasks. These were organized into proposed categories for the broader study. Eventually, these categories were pared to represent variables that had the capacity to authentically evidence cultural influences. The initial variable structured for this early foray was *elaboration*.

**Procedures for collection of initial writing data.** Guidelines for data collection relative to *elaboration* were informed by Jobson and O’Kierney’s (2008) cross-cultural study of autobiographical memories, in which they included a description of counts of elaboration.<sup>8</sup>

---

<sup>8</sup> Jobson and O’Kierney (2008, p. 77) specify for their study that “elaboration was scored as the number of unique, nonredundant units of information referencing person, place, feeling,

Thus, elaboration was analyzed by counting the number of units (words/phrases) that added new information to an initial reason cited by the writer. For example, the first sentence of a paragraph might read *one good reason for going to the zoo is that there are new kinds of animals to see*. The sentence following this, *we could see **lions***, counted as one elaboration. However, if the sentence read, *We could see **lions, tigers, and elephants***, three units are counted because of the addition of two additional, individual nouns: *tigers* and *elephants*.

**Pilot study.** Following the open coding process, a pilot study was employed to establish viability for analysis of these tentative variables. Procedures used for coding during the pilot study were then refined and extended to include all cases. The pilot study utilized a sample set that included five cases each from Hispanic/Latino and European-origin White students. Student responses from the pilot study were incorporated into the final overall sample.

**Reliability.** The researcher and a second rater coded all ten responses of the pilot study, representing 13.5% of the total writing responses for the study. The second rater is a K-5 building instructional coach who was formerly a fourth-grade teacher and an experienced work sample scorer. Responses for the first two cases were coded one at a time, followed by discussion and calibration. The remaining items were rated independently. Most differences were resolved through brief discussion.

Reliability was calculated using Pearson's coefficient. Reliability for *elaboration* was initially not good ( $r = .503$ ). However, with the removal of a single outlier related to a particularly opaque passage in the fourth sample, reliability increased to an acceptable level ( $r = .899$ ). Discussion following this difference resulted in some minor clarification and refinement of the coding procedure for elaboration.

---

descriptor, personal evaluation, dialogue, and so on.”

**Procedures for collection of final writing data.** Closer inspection of elaborative elements revealed inconsistencies regarding organization of the body and paragraphs of responses, repetitive features, and non-argumentative genre elements. Thus, the observation of elaborative differences in student writing proved to be the foothold from which more specific variables were analyzed. These variables included *organization*, *direct/indirect language*, and *genre elements*.

**Organization.** To evaluate the structure of written responses, the researcher applied fourth and fifth grade elements of the *Common Core State Standards* for argumentative writing (see Appendix). Written responses that conformed to the strict language of the standards were coded as *CCSS*, while those that did not were coded as *non-CCSS*.

**Direct/indirect language.** To evaluate important use of either direct or indirect language, all 74 responses were analyzed individually for evidence of repetition of themes, main ideas, or phrases, a feature of indirect language (Hinkel, 1997). Writing with no evidence of repetition was coded as *direct*, while writing that evidenced repetition of a key idea or theme was coded as *indirect*.

**Genre elements.** The 44 *non-CCSS* responses were also analyzed for evidence of the inclusion of elements that strayed from the argumentative genre into another mode. There were 16 responses that were written either entirely or in part using language appropriate for either narrative or expository writing. These last responses were coded accordingly regarding genre.

**Statistical analysis.** Following the coding process, descriptive results were expressed as counts and percentages. Further statistical analysis using Fisher's exact test was conducted with each variable by ethnicity. In all cases, the alpha level of significance was set at .1 to accommodate the relatively small sample size. These approaches are similar to those used in



other cross-cultural studies of cognition (Darwish & Huber, 2003; Garrett-Peters & Fox, 2007; P. Li et al., 2011).

**Qualitative elements.** After quantitative analysis of all variables, excerpts from student responses were collected to lend texture to statistical findings. The combination of these illustrative examples with inferential statistical analysis and an explicit description of coding methods created a balance that constituted adequate triangulation for this study.

### **Research Ethics**

Data collection procedures for this study are in accordance with Standard 8.05(1)(a) of the Ethical Principles of Psychologists and Code of Conduct. This standard allows for exemption from informed consent because this is a district-approved reanalysis of data originally collected by schools according to conditions inherent within normal educational settings. Identifiable data such as names will not be included in the study. Data will be retained in both original and digital format according to school district procedures.

## CHAPTER 4

### Findings

#### Introduction

How were organizational and elaborative differences manifested in student writing? Before examining this additional context, it will be helpful to recall that the primary focus of this study requires a rather messy sorting of *cultural* (characteristic belief patterns or practices of a particular group) and *instructional* (resulting from formal academic experiences) influences, requiring some careful consideration. Thus, findings relative to the use of academic vocabulary, for example, are not included in these results because acquisition of such language is linked to the instructional setting. Likewise, choices regarding destinations are highly susceptible to socioeconomic experiences rather than culture as a molding influence.

Less arbitrary are systems for presenting ideas that reveal patterns of expression and communication. Along these lines, the writing of these groups clearly diverged in the area of *organizational structure*, in which White students seemed to more comfortably default to a traditional Western essay structure of direct language within a linear, expository framework. Hispanic/Latino students, on the other hand, displayed a more indirect, circuitous style that at times incorporated narrative elements. Differences will be described in the following three sections according to three categories: linear and non-linear organization, use of direct/indirect language, and inclusion of either narrative or expository elements.

#### Linear and Non-Linear Organization

The sequential style of a traditional persuasive template seemed to appeal more readily to White students, who tended to organize their writing with reasons and subsequent clusters of supporting details presented hierarchically. The tendency to structure an argumentative response

that conformed to the CCSS standards descriptors was manifested by 64.9% of White students, but only 16.2% of Hispanic/Latino students. Fisher's Exact Test results found this difference to be statistically significant with a large effect size,  $p < .01$ ,  $\Phi = 0.5$ .

The following excerpts from responses of White students illustrate this strong tendency to move ideas along within argumentative expression in a lean, linear fashion<sup>9</sup>. Examples and details are grouped immediately following main ideas:

I think 5<sup>th</sup> graders should go to Sea World because it would be educational. It would be fun. It would get us wet. First, it would be educational because we would learn about sea creatures. One example is that we could learn about dolphins and stingrays. Another is we could feed a lot of sea creatures like sharks, sea lions, stingrays, dolphins and walruses. Next, it would be fun because there are rides and shows. One ride is called Wild Arctic....

(White male, fifth grade)

This writer summarizes reasons during the introduction, and then begins to deconstruct each reason with more detailed discussion.

The fourth graders at --- Elementary deserve a great fieldtrip. The Boise Zoo is a sensational place for kids to go on a fieldtrip. Kids can learn how animals live, they

---

<sup>9</sup> Regarding excerpts of student responses displayed in this study, it may assist the reader to "downshift" expectations to those which are appropriate for middle childhood learners. Minor spelling and grammatical errors have been corrected to improve readability, as this does not detract from the variables considered. Paragraph breaks have been eliminated because of the short length of the texts. Unfortunately, any excerpt loses some degree of overall context.

However, space prohibited the inclusion of the entirety of one- to two-page responses.

could see new animals, and the bus driver wouldn't have to go far. It would be amazing for us to go and learn about all the animals. We could learn about their territories and what they eat. Kids in our class are constantly reading about animals. They would love to go and explore the miraculous animals at the zoo. There are also animals at the zoo that we have never seen before. For example, giant lizards. Kids in our class have read about them and now know some of their features, like their scales....

(White female, fourth grade)

In contrast to these, Hispanic/Latino responses often exhibited a more diffuse, flexible structure. This writer lists a reason to travel to the zoo—*there are a lot of interesting things there*—then includes a series of questions and observations about zoo animals:

I would like to go to Boise Zoo because there [are] a lot of interesting thing[s] there like how do they feed the animals? Or what do they do when the animals are sick. In Boise Zoo we could learn about the animals' habitat or where do the animals come from?  
There [are] a lot of thing we could learn [at the] Boise Zoo.

(H/L female, fifth grade)

Similarly, this writer notes the importance of the U.S. Mint as a destination, and then lists many loosely connected statements about what he wishes to learn and see:

The place I think is the most important to go is the U.S. Mint. I want to learn how they made money. I also want to learn what kind of material they used. I want to see how the machine works. Also you can see the place it is in. Going to the U.S. Mint should be a good idea because if they're teaching you it in school you can learn more.

(H/L male, fourth grade)

The conclusion of argumentative rhetoric is traditionally placed at the end, expressed as a summary of reasons listed during the introduction. It is an essential organizational element of the template outlined in the *Common Core State Standards* for these two grade levels. However, White students (83.8%) were much more likely to include an adequate conclusion compared to Hispanic/Latino students (56.8%). Fisher's Exact Test results found this difference to be statistically significant with a moderate effect size,  $p = .01$ ,  $\Phi = -.3$ .

White students were more apt to use a conclusion in traditional Western fashion, that is, to succinctly restate an opinion: "That's why we should go to Crater Lake" (female, fourth grade), "...now you know why I think 5<sup>th</sup> grade should go to Sea World" (male, fifth grade), and "In conclusion, we think it is a good idea that we should take field trips on people we learned about" (male, fifth grade).

In contrast, Hispanic/Latino writers often ended their responses abruptly with the trailing sentence of the final paragraph and with little to no reference to their original opinions. For example, each of the following excerpts constitute the essence of the final statement for a Hispanic/Latino response: "If we have enough money we might be able to let 4<sup>th</sup> grade come with us" (male, fifth grade), "If we learn all this we might get good grades at a quiz," (male, fifth grade), and "...he told me that he has a lot of fun in his classes" (female, fourth grade).

### **Direct and Indirect Language**

For all 74 students, 91.9% of White students manifested the prevalent use of direct language in their responses, while 56.8% of Hispanic/Latino students manifested use of indirect language as constituted by repetition of a key idea or theme. Fisher's Exact Test results found this difference to be statistically significant with a large effect size,  $p < .01$ ,  $\Phi = 0.5$ .

The following two excerpts are paragraphs that offer clear evidence of the use of direct language through development of a single important idea in one instance:

Another reason it is a good idea is because the trip will be educational. The students will get to learn science and social studies. We will not only see it in a book or in a picture we will get to see in real life. We will get to see antiques, old pictures, and we will get to see the date and time when stuff happened. Also we will get to hear stories about stuff that has happened in the past.

(White female, fifth grade)

One reason [to go is] that it is safe for little kids. Well, here [is] one reason it's safe for little kids. On the bumper cars, they have seatbelts so you won't fall out. When you go on the slide, they give you lifejackets. After you get on you have to get on with an adult so you can stay safe when you go down the slide.

(H/L female, fifth grade)

Instances of direct language strongly coincided with use of an organizational structure consistent with the *Common Core State Standards*. To understand how use of language may be distinguished from structure, it is helpful to think of repetition as a roundabout way to create emphasis or highlights. In this way, it is easier to realize how a structure aligned with the standards would also scaffold the use of direct language and discourage the use of indirect language.

To underscore this difference further, it is helpful to examine the 44 responses of those students who failed to meet the standards criteria. The written ideas of most of the 31 Hispanic/Latino students (64.5%) in this group were linked in a more circuitous and indirect fashion that typically folded a main idea as a returning thread throughout a passage, at times

using narrative as a way of illustrating the potential appeal of a given destination. In contrast, the writing of 76.9% of the 13 White students who did not attain standards was still found to be direct in the sense that the writing was sequential and very rarely repetitious. Fisher's Exact Test results found this difference to be statistically significant with a moderate effect size,  $p = .01$ ,  $\Phi = 0.4$ .

Excerpts from students' responses illustrate these differences. For example, the writing of Hispanic/Latino students often began with an idea that linked to additional ideas, with an abrupt return to the original main point further on. This sometimes occurred within one or two paragraphs, as in the writing of this fifth grade male, who continually returns to a learning theme without the distinct expression of a main idea (phrases within this theme are bolded).

I thought we could go to Wahooz...We could play lazertag, bumpercars. **We can learn how to be more creative in a way.** I never went there. I think some of the kids in our class might like it. **It might be educational on some of the games. On some of the games you need to know math.** You could give us a chance to go. **There might be interesting things there.** It's almost graduation day.

(H/L male, fifth grade)

Similarly, this student interweaves an important theme of the value of trying new things:

I think we should go ice-skating. **I have never done it before.** It sounds like a lot of fun. I'm not just talking about 4<sup>th</sup> grade; I am talking about the whole school. Of course in different days and months. It is only if the PTO can afford it. **It's something new for some people.** If the PTO can also do it in different years, if they have to. A bunch of kids haven't went ice-skating before. Especially if it's a hot day. What a way to cool off and relax. Also to have a bunch of fun and **to try new things.** To hang with friends and

**try this new thing.** Play...in a cold relaxing place. Surrounded by snow. **Also to keep trying new things.** No quitting cause you knew that you can do it if you try.

(H/L female, fourth grade)

Repetition figured prominently in these responses, with writers re-expressing key ideas or themes with successively slightly different language or details. In fact, many of these strands might well have constituted a successful paragraph as defined by standards if they had been grouped together. For example, the three reasons (in bold) cited by this writer are actually variations on the main reason, which is a desire to learn more about animals:

There are many reasons why I want to go to the Boise Zoo. I want to go to the Boise Zoo because **I want to learn more about animals.** I want to learn more about animals because someone might tell me to write information....The third reason why I want to go to the Boise Zoo is because **there are some educational things about animals**....The last reason why I want to go to the Boise Zoo is because **I want to learn more things about the most interesting animals** in the zoo. I obviously do want to go to the Boise Zoo.

(H/L male, fifth grade)

Another writer wrote two paragraphs that had the same essential meaning, each ending with the same phrase that seemed to serve as an anchor (bolded):

The field trip I would like to go to is the Oregon Trail Museum because it will be better than reading a book or looking at the Internet. If you read a book it will take forever because you have to read and read and read. Some books take days to read. Sometimes the Internet doesn't work. Also, the Internet shows **a note that says this is not available, please try again.** When you go on a field trip you would like to be there in



person and not read a book or look in the Internet...It is fun when you look at the exhibit than look at pictures in [a] book or in the Internet. Also, if you go to a museum in person you won't have to see **the note that says this is not available, please try again** because you will see it in person and not in a computer or in a book.

(H/L female, fourth grade)

This student uses a roundabout, almost conversational discussion about tornadoes to underscore her enthusiasm for her destination choice:

I think we should go to L.A. for a field trip in one of these days. **I want to go really bad because we used to study things about that and I just thought that if we would actually see one in real life it would be pretty cool**, also it would be our first time seeing one because there's no tornados here. We should go even though sometimes it dangerous because we could be a couple miles away from it and still see how tornados form, or just hear about them in the news or on the radio. I think it would be very interesting for kids and even for teachers to see a tornado because we could only hear about them but not see it, which I think everyone would like to do...**Once again, like I told you before, it would be pretty awesome to go.**

(H/L female, fifth grade)

The above writer appears to use the phrase, *once again, like I told you before*, to bring the discussion back to her point that a field trip to L.A. would be "awesome." Transitional phrases that appeared designed to refocus the reader's attention surfaced in the writing of other Hispanic/Latino writers, including those whose writing conformed to the CCSS standards. Examples include: *as I was saying*, *you already know*, *let me just say again*, *obviously*, and *I hope by now*.

Another example of a transition phrase is found in this excerpt, in which the writer uses the phrase *like I said before*, to draw the reader's attention to a repeated theme of fun (in bold):

I think we should go to the Discovery Center [a science museum] as a field trip. **Well, like I said before, we should go so we can have some fun.** And we also can discover some stuff. This is a great opportunity for me to find other important stuff... **we can have a lot of fun.** And **we also can enjoy our field trip.** And last but not least do some **fun stuff**...I want to learn some cool and important information.

(H/L female, fourth grade)

The opposite trend was true of White students. Even among White writers whose responses fell short of all the required *CCSS* structural elements, language was consistently direct and succinct. The following two examples illustrates a tendency to develop a main idea in a single instance:

We can even learn about the artifacts. Like, we can learn where it came from, what it's made out of, or who owns it. It can be any kind of artifact, like a diary, a picture, or even clothes.

(White male, fifth grade)

We should go to Alaska. We could climb, ski, snowboard and snowmobile.... When climbing we could look for rocks and other things.... When skiing and snowboarding we would just have fun.... When snowmobiling we could learn how to operate engines.

(White male, fifth grade)

These two writers display a typical linearity to concisely develop a simple argument:

I would like you to fund us to go to the YMCA in Boise. We have been learning about salmon. Salmon swim in water. So our field trip is water-related.

(White male, fourth grade)

I think that the fifth grade classes should get to go on a field trip to an all about space museum, because we have been learning about that, and to know some of us had only studied 1 or 2 things about space and there are millions and millions of things to study in space. That is not including spaceships and space satellites. So really, more like billions and billions of things in space.

(White female, fifth grade)

### **Narrative and Expository Elements**

Of the 44 student responses that did not meet *CCSS* criteria, 16 included at least partial response portions in another genre. Similar proportions from each group exhibited this type of response (35.5% Hispanic/Latino and 38.5% White students). However, when the 16 responses were analyzed separately for differences, an interesting dichotomy emerged. Regarding Hispanic/Latino writers, six out of 11 (54.5%) wrote in a narrative genre, while the remaining five (45.5%) wrote an essentially expository response. The five White writers (100%) all wrote a primarily expository response. Fisher's Exact Test results found this difference to be statistically significant with a moderate effect size,  $p = .058$ ,  $\Phi = -0.4$ .

Narrative elements incorporated by Hispanic/Latino students focused on prior or potential experiences that related to their choice of a destination for the class field trip:

I think Mrs. --- should be able to say [yes] for this fun field trip. First, we [went] there and it was fun because we went through some slides with some rails down the slide when you get close to the end, you drop. There is a mini waterfall. It is cool because you could swim if you wanted to but you don't have to. Then we got something to eat and when we finished eating we went back in groups and went swimming. Next we swam for

a long time and what was fun was it has waves. After that....

(H/L male, fifth grade)

I want to go to the mountains. We can go there and learn about mountain habitats. We can also camp there and learn about camping.... At night we could build a campfire. We can also roast marshmallows under the stars. Then, when they are hot and ready we could eat them. We can also sing campfire songs. Then, we could go to sleep in our camping tents. We can wake up early to see animals. We can feed the animals plants and meat. Then, they will know we are friendly. We could also pet the deer. The animals will feel so happy.

(H/L female, fourth grade)

We should go to Wahooz for our end-of-the-school field trip. Next day we can stay there for three days. For the second day we can bring a tent and maybe sleep there. On the second day we can also ride all the rides.... Then ride 20 rides and eat dessert and go to sleep in any tent.... Third day: on the third day we can get up and eat breakfast. Then ride, ride, ride till we can't ride no more. Then eat lunch at 11:35....

(H/L male, fifth grade)

Conversely, the White writers who strayed from the argumentative genre were exclusively preoccupied with factual details:

If I were to go on a road trip I would choose Colorado. You can learn so many facts about Colorado.... If you study you would know that Colorado's state bird is the Lark Bunting.... Colorado's state tree is the Colorado Blue Spruce. Pike's Peak is America's most famous mountain...The population in Colorado was 2,619,000.

(White female, fifth grade)

I would like to go to the YMCA. The reason I want to go to the YMCA is because they have a water slide. A lazy river. A diving board. And it is completely safe. The YMCA has lifeguards everywhere. And they have a game room. The game room has two ping-pong tables. And [a] Foosball game. The YMCA also has Legos. And a huge, huge basketball court. And pizza. They have any kind you like. And any pop you like....

(White male, fourth grade)

Similarly, this writer elaborates on her idea for a trip to the beach by listing a series of activities:

I think we should go to the Coast because you can get a souvenir from the gift shop. We can see cool starfish on the rocks. You can try to rip a starfish off a rock. You can go to play in the ocean. You can see sea lions. You can see a dolphin. You can actually see a shark! You can relax at the coast. We can eat seafood. If you look really close you can see an island. We can make sand castles. Play in the sand. We can get ice cream from the ice cream shop. We can float in the water. I think it would be a really fun trip....

(White female, fourth grade)

### **Summary**

Clear statistical and textual differences were evident between Hispanic/Latino and White students' responses in three areas: organizational structure, language use, and types of nonargumentative genre elements. These differences were highly counter to one another, with White students more apt to utilize a linear structure with direct language and occasional expository elements, as opposed to the tendency of Hispanic/Latino students to write more diffusely, incorporating more indirect language and narrative elements.

## CHAPTER 5

### Discussion

Quantitative analysis using inferential statistics elicited three major findings with respect to potential cultural differences between the argumentative responses of these White and Hispanic/Latino fourth and fifth grade writers:

1. **Organization:** White students aligned with a traditional, linear argumentative template, while Hispanic/Latino students manifested a more flexible style that incorporated repeating elements. An accompanying, important finding related to organization was the stronger tendency for White students to include a conclusion in accordance with standards.
2. **Language:** White students consistently used direct language that explicitly conveyed meaning, while Hispanic/Latino students were more apt to use an indirect style of language, a recursive fashion that introduced subtle variations of a single theme. This finding was consistent when standards-aligned responses were excluded from subsequent analysis.
3. **Genre:** Of students who did not meet the standards criteria for argumentative writing, White students were more likely to incorporate expository elements, while Hispanic/Latino students were more likely to utilize narrative elements.

As we seek to situate these findings within existing literature and understand their implications for instruction, it is key to remind ourselves that the language of the *Common Core State Standards* regarding writing for argument is clear about required elements of argumentative writing from students by the fifth grade: a rigidly-structured response marked by a logical

sequence of well-supported reasons (Kellogg, 1999; Oldfather, 2007).<sup>10</sup>

First, a clear difference emerged regarding organization of ideas for the opinion task, with White and Hispanic/Latino student responses diverging with respect to linearity. The act of translating one's thoughts into a coherent, written format requires considerable use of the cognitive processes of attention, planning and evaluation (Matlin, 2009; Rocci, 2006), and decisions regarding organization may potentially facilitate knowledge recall (Kellogg, 1994). In order to moderate the inevitable cognitive load required by these processes, instructional decisions tend to scaffold the writing experience as a series of draft phases, requiring the author to periodically reflect and refine to achieve clarity in presentation. Flowers and Hayes (1981) articulate a classic theory of writing whereby, following the initial generation of ideas, the cognitively complex process of organization summons multiple tiers of operations, including categorization, use of hierarchy, patterning, textual discrimination, and goal-setting, and may usher in creative elements as the writer endeavors to shape meaning.

As we have seen from a review of the literature, culture interacts with many of these areas. In the present study, the written responses of White students reflected a tendency toward deconstruction of main reasons, using specific details and concrete examples to build increasing focus into the discourse. This type of linearity is consonant with acknowledged traits of Western argumentation (Bock, 2006). This trait has also been documented as well-represented within White mainstream expression, including traditional stories with significant structure (Holtgraves,

---

<sup>10</sup> CCSS ELA-Literacy W.5.1a: "Introduce a topic...clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose," and W.5.1b: "Provide logically ordered reasons that are supported by facts and details."

1997; Kim, Sharkey, & Singelis, 1994; Y. S. Park & Kim, 2008), assertive and clear communication (Buchtel & Norenzayan, 2008; Norenzayan, Smith, Kim, & Nisbett, 2002), and the use of logic embedded in categorization strategies guided by rules, notably independent of context (Kim & Kim, 1997; Y. S. Park & Kim, 2008). This may also be a glimpse at an early stage of increasing emphasis upon clarity (2010) and reason rather than relationships, reminiscent of Gusa's (Connor, 1996; Montaña-Harmon, 1991; Spicer-Escalante, 2005; Zhu, 2001) "encapsulated brain." The new writing standards provide comfortable scaffolding for these tendencies.

The writing task responses of Hispanic/Latino students characteristically employed a more flexible and recursive structure that allowed for the diffusion of particular themes or ideas. This is consistent with the findings of other studies of the writing of Hispanic-Latino students of Mexican descent (Fort, 1971; Newell et al., 2011; Yeh, 1998). This structure was less aligned to the argumentative writing standards template outlined within the *Common Core State Standards (CCSS)*. Most did not organize their response with individual main ideas with immediate support specific to each of these reasons in a manner the standards refer to as *logically grouped*.<sup>11</sup> This is crucial to note, because while effective argumentative writing may be manifested within a variety of forms (Yeh, 1998), it is most consistently evaluated based on the strength of support for claims (Hinkel, 1997) and presentation (Hinkel, 1997).

Second, the recursive and repetitive style of writing used by many Hispanic/Latino students may be considered a form of indirect language (Connor, 1996; Kaplan, 1966; Riding, 1989), one that contrasts with the syntactical and semantic development that is relatively

---

<sup>11</sup> Although the CCSS do not specify the cultural nature of the phrase *logically grouped*, the clear inference is that this is a reference to the traditional Western structure of argumentative essays.



independent of context that is evidenced in the responses of White students. It is not entirely surprising that this trait should persist, given both the indirect attributes of the Spanish language as a whole, and Mexican Spanish in particular (Berman, 1994; Jarvis & Pavlenko, 2007) and that L2 writers transfer at least some L1 learnings into expression using the second language (Gee, 2007; Lave, 1997; Robertson, 2001; Seifert, 1999).

Cognitively speaking, learners draw upon prior context to make sense of new conventions of discourse, logic and problem solving appropriate for a particular task or domain (Frajzyngier & Jirsa, 2006; Holtgraves, 1986). Because the use of direct and indirect language is rooted in interpersonal perspectives and goals that permeate a culture (Gee, 2007), requiring sophisticated levels of discernment to ascertain the proper situations for employing them (Gee, 2007; Spiro & DeSchryver, 2009), the process of learning new cultural patterns of communication is often an ill-structured task replete with layers of implicit meaning (Atkinson, as cited by Hinkel, 1997; Gee, 2007). This is further complicated by the fact that routines of discourse may be highly variable even within a given culture or geographical area, making translation an ongoing, challenging matter of situation-specific interpretation by L2s (Gee, 2007; Kaplan, 1966).

Within rhetorical discourse, choices regarding the use of either direct or indirect language have accrued and formalized because of particular philosophical and social goals (P. Brown & Levinson, 1987; Hinkel, 1997; Matalene, 1985). Thus, repetition in discourse for some collectivist cultures represents an indirect means of emphasis and politeness that is typically expressed in other ways in English writing (2008). Its clarity depends upon an understanding of context, and because of this, choice of language calls into play cognitive processes such as

perception and attention that are attuned to specific environmental, affective, and motivational cues.

As to the third major finding, the small but instructive dichotomy between White responses that exclusively veered toward the inclusion of expository elements and Hispanic/Latino responses that incorporated narrative adds additional dimension to a cultural intersection with this writing task. Genre is essentially a culture-cognition construct, as it is an internalized schema of social origins. Bruce (2008) relates several theories of genre construction that emphasize a central role for cognitive processes involving categorization. Simultaneously, as with direct and indirect language, genre may be molded to suit the purposes of a particular culture, thus requiring some deciphering on the part of newcomers (Martínez-Roldán & López-Robertson, 1999; Reese, 2012).

Constructing narrative in a variety of forms serves a central and connective role within the communication patterns of Hispanic/Latino students and their families, serving to induce both cohesion within the family (Delgado-Gaitan, 2005; Espinosa & Ochoa, 1986; Mercado, 2005) and scaffolding into the educational environment (Reese, 2012). Its elevation as an oral literacy is likely due to an historic suppression of Spanish writing among indigenous peoples in colonial Latin America (2012, p. 289). Various ethnographic accounts have detailed ways in which Hispanics/Latinos use the device of narrative both intuitively and intentionally to construct understandings related to their everyday lives. Reese (Duke & Kays, 1998; Zecker, 1999) noted that Hispanic/Latino family experiences are frequently replicated as narrative stories in which “the style is conversational and intimate, with a focus on the sequence of events.”

From a pedagogical perspective, children are able to discriminate between genres from early childhood (C. A. Donovan & Smolkin, 2006), and by third grade exhibit a comfortable use

of basic forms of both narrative and informational texts from which they might ideally build toward expression of more sophisticated variants of these modes (Devitt, 2008). This knowledge also gives students a conceptual framework from which to draw on to explore new tasks (Tardy, 2006), particularly if it is amplified with synergistic use of textual models (Englert, Mariage, & Dunsmore, 2006) and explicit practice that develops the understanding and use of cognitive tools and metacognitive strategies that support writing growth (Bruce, 2008; Tardy, 2006). Further, because the development of genre knowledge is an integrative process that rests heavily upon experiential knowledge, it is key to bridge—rather than discard—students’ use of genres that appear inconsistent with the intent of a specific task (Graff, 2003). Thus, the incorporation of narrative elements by those who are still making sense of the current task may be seen as a natural way to begin to explore task-related ideas through written language, and is not necessarily incompatible with argumentative presentation (Contreras & Stritikus, 2008).

Still, it is reasonable for us to wonder to some degree why discrepancies exist between these two groups regarding responses to the same argumentative writing task, given they were closely matched according to overall scores of writing ability.<sup>12</sup> In addition, they shared the same classroom instruction with peers from the other ethnic group. Further, the standards shift required many elementary teachers to include argumentative writing for the first time that year. Ostensibly, all students would have begun from the same general baseline of academic knowledge and instruction.

Partial explanation may reside in language status. By definition, ELL Hispanic/Latino students generally possess a limited repertoire of academic vocabulary in comparison to their

---

<sup>12</sup> State scoring procedures allow off-topic and alternate genre responses at these grade levels to be scored generically to meet Oregon work sample requirements .

native English-speaking peers, and require extended time to develop this capacity (Nippold & Ward-Lonergan, 2010). If we look to more advanced features of language, there is some evidence which indicates that higher verbal reasoning ability as measured by success with analogies is linked to more skilled argumentative writing (Chambliss & Murphy, 2002). Finally, there is vigorous interaction between reading and writing (Moore & MacArthur, 2012), and it appears that engaging with texts that are structured specifically for argument leads to improved argumentative writing (Newell et al., 2011). Thus, we may perhaps surmise that without this opportunity—perhaps in Spanish and English—Hispanic/Latino students will have difficulty apprehending the inherent goals and process necessary for constructing an argument that conforms to the requirements of the new standards.

It is particularly this last point that we might wish to consider within the context of the acquisition of a *habit of mind* toward the type of argumentative writing that is traditional in Western academic circles, one that takes an extended period of time for an individual or culture to develop (J. Li, 2012). In fact, argumentative discourse is an ancient and finely honed European tradition, remarkably consistent in its adherence to a basic structure developed and employed by orators of classical times. It has been continually sustained through core European values of autonomy and individualism that have been reinvigorated with the advent of democracy. The Western conception of education places great premium on self-expression, sensory exploration of the material world, and extrication of knowledge in a series of logical steps independent of interpersonal or emotional textures (Fulgini, 1998; Yamamoto & Li, 2012).

There is little doubt that these are culturally differentiating values at a level as basic as the family unit (Kitayama & Uskul, 2011). As it is reasonable to expect many Hispanic/Latino students to revert to a style of discourse that is characteristic of both formal and informal

expressions from their experiences, it is equally reasonable to assume that many European-origin White students have been immersed in a cultural outlook regarding knowledge and its expression that they have become habituated to: an efficient, logic-based expression that may be organized and categorized within a formulaic structure.

### **Conclusion and Implications**

This study began as a search for potential cultural differences captured within cognitive snapshots of students' written responses. We now see results that indicate several differences *do* exist between this particular group of Hispanic/Latino students and their White peers, but are these differences rooted in culture? In fact, this is where the most delicate task begins: to look carefully at evidence of thought in an effort to parse what may not be entirely parsable.

If one accepts that the development of a distinct cultural outlook is a timebound, cumulative process (1973) within which many fine layers settle like stream sediment, then are alternately mingled, cemented and eroded as the elements come and go, one must also accept that its original, evanescent layers may be undiscoverable. This uncertain core of culture has been noted by others using different metaphors. Geertz (1980) compared culture to an octopus, which manages somehow to direct its many semi-independent legs to carry itself along. To convey the sense that culture may only be studied from a periphery, Schneider (Howard, 2010) described his subjects as “informants.”

Therefore, when we are discussing points of interaction between culture and cognition in regard to children in American schools, we are plunging into some turbidity (Newell et al., 2011). We must take into account—and accept—the potential for continual interactions between the dominant and minority cultures, pedagogical and instructional influences, home and economic forces. But we should try to do some sorting, even if it is a ragged process, for there is

much at stake in the way of understanding. For this study, we worked first from the outside inward, observing for points of differentiation during the coding process—for the archaeologist, notable shards embedded in the streambed. Discerning some patterns, we next worked from the inside outward, comparing these patterns between groups. We now must also keep in mind that we are trying to draw a line to the present, namely, differences relative to new demands brought about by the *Common Core State Standards*, and how knowledge of those differences may inform instruction.

In view of the evidence in combination with the literature, we may conclude that it is quite possible that elements of culture likely influenced the cognitive perceptions and patterns of argumentative writing among these elementary school students. This insight may be both useful and timely, as changes stemming from the new standards will soon strongly impact writing instruction in Oregon and the rest of the nation. Writing throughout the curriculum will soon require a new K-5 emphasis upon argumentative writing that demonstrates the marshalling of adequate evidence to support the writer's claims, and a strict form for expression of this discourse.

In this regard, findings from this study suggest that White students have an advantage of being steeped in culture that prioritizes individual debate and expression, with an ancient, traditional form of discourse that efficiently crystallizes ideas and opinions. These students tended to acclimate quickly to a traditional writing form that prioritizes a rigidly lean and linear presentation, as well as the use of direct language and deconstruction of reasons. The *CCSS* standards align uniformly with this tradition.

The standards may be less advantageous for students in our schools who are from other cultures. The collective values and tradition of subjugation in Latin American history have

provided less fertile ground for this style of argumentative discourse. For immigrants, it may sometimes be difficult to adjust to the formulation and bold articulation of opinion and argument that occurs on many levels in the U.S. Indeed, the adjectives *milquetoast*, *submissive*, *spineless*, and *mousy* are all pejoratives used in our society to deride someone who does not appear to hold, let alone defend, opinions. It is easy for many Americans to take for granted that our expressed opinions and proposals for change usually engender little more than disagreement from those who hear them. This is not the case in much of the rest of the world, and in many areas a moment of careless expression may cost one his or her life. It is not that logical discourse does not occur. Rather, it is funneled and shaped by political and cultural forces (Darder, 1991; Howard, 2010; Kaplan, 1966), and must often become more discreet.

At this point, it is important to recall that *many* valid forms of logical expression have been practiced historically throughout the world (Avila & Moore, 2012). Western rhetoric is neither superior nor inferior to these other forms *per se*. While the *Common Core State Standards* will require instruction of this historically European template, the standards' writing framework does not necessarily exclude appreciation for and instruction in other forms (Hillocks, 2010; Yeh, 1998). Such flexibility will likely enhance a writing program while allowing students to gain confidence. Yet, proficiency with the traditional Western argumentative discourse form, with an emphasis upon the development of claims and warrants, is important for success in both college and other arenas (Darder, 1991). With this tension, we walk a fine line and must be conscious of the need to resist the unethical assumption that the standards epitomize the only learning students ought to encounter, or that they are somehow at fault if they fail to gain proficiency as easily as those that are more attuned to its cultural intonations (Gutierrez, 1992).

Schools require cognizance of the difficulty that may exist for some families in fully comprehending the skill of free and logical expression as it is conceived in broader U.S. culture. Our teaching requires sustained attention toward helping students understand and practice the proper, peaceful expression of ideas. The strength of our democracy depends upon the free expression of ideas, defining our commonality as a people more than any other value. In preparing students to assume and enjoy full responsibilities as citizens, American schools have a corresponding responsibility to prepare students to critically examine and thoughtfully participate in shaping their communities and nation.

This complex goal cannot be obtained simply through teaching a formatted template for expression. In fact, overemphasis upon recitation within may hinder Hispanic/Latino students writing progress (Yeh, 1998). Vibrant habits of oral and written discourse must be woven throughout the fabric of school routines to instill a habit of mind over time that demonstrates both acquisition and ease with argumentative writing (D'Angelo, 1974; Larson, 1987). Such a disposition would extend beyond replication of writing according to a single template to encompass an engagement with ideas that is reflected by intentional structure on the part of the writer (De La Paz, 2005). Helping students acquire writing strategies specific to this genre while scaffolding its use within multiple, genuine explorations can combine to produce successful writers (2011).

The *neuro-interaction model* of Kitayama and Uskul (J. S. Brown et al., 1989; Lave & Wenger, 1991) provides us with a macro-level perspective that demonstrates the need for adequate time and practice to enable an individual's neural framework to adjust to the demands of new practices. At a micro level, *situated learning* (Yeh, 1998) may provide the requirement of social learning through community interaction about relevant, genuine argumentative



discourse that especially appeals to the cultural values of Hispanics/Latinos and extends the overall perspective to a practical interpretation for instruction (Newell et al., 2011). This is fertile ground for future research (Martínez-Roldán & López-Robertson, 1999).

This process should begin by building on existing strengths of Hispanic/Latino students in the area of language. It is clear that for a number of these Hispanic/Latino students, narrative and personal experience is a powerful and familiar structure that they easily reference to organize thought (Espinoza-Herold, 2007; Moll, Armanti, Neff, & Gonzalez, 1992; Saracho, 2007). It is therefore crucial that schools be aware of and nourish the oral, written, cultural, and experiential literacies among Hispanic/Latino families that constitute funds of knowledge from which students may draw in order to create bridges to understanding new concepts (Martínez-Roldán & López-Robertson, 1999). Experiences should include everyday opportunities (Durning & Artino, 2011; Greeno, 1997; Matlin, 2009; Schunk, 2012), from which examples of opinion and argument may be elicited. These should first be subjects for discussion, and then potentially extended toward written projects that help students develop effective support for claims while developing meaning within particular forms.

Thus, schools have a determinate role in valuing and augmenting students' experiences. To amplify this potential, reflective practice should attend to an understanding of the discourse practices and patterns of various cultures, the preservation of rich experiences that stimulate and connect oral and written language, the establishment of effective vocabulary instruction to increase all students' toolset, and practices that warmly welcome and integrate the experiences of students from all cultural backgrounds.

**Limitations**

This was a study of a specific population of fourth and fifth grade Hispanic/Latino ELL and White students within a single school district. Despite differences relative to ethnicity, these students are shaped by mutual geographic, socioeconomic, and community circumstances. As such, the study offers a high degree of internal validity, but findings may not be generalizable to other groups. For example, students in urban areas may manifest a different set of responses than these students, who reside in an agricultural community.

Additionally, it is important to acknowledge the difficulty of making definitive statements about what is and is not related to one's home or ethnic culture. Culture is a dynamic, interactive phenomenon that is formed as a result of a multitude of social exchanges that provide influence on a variety of levels. In organic, ecologically valid contexts such as examinations of student assignments, it is impossible to trace every potential influence that may have shaped responses. The best that can be done is to capture hints and insights that can be explored further using a variety of methodologies, and that may encourage educators to think more deeply about their students' backgrounds as a means of informing their instructional practice.

## References

- Acherman-Chor, D., Aladro, G., & Gupta, S. D. (2003). Looking at both sides of the equation: Do student background variables explain math performance? *Journal of Hispanic Higher Education, 2*(2), 129-145.
- ACT Inc. (2010). A first look at the Common Core and college and career readiness: ACT, Inc.
- Adams, R. (1904). The nature of the social unity. An examination of the theory that society is a psychic unity. *American Journal of Sociology, 10*(2), 208-227.
- Adolphs, R. (2006). How do we know the minds of others? Domain-specificity, simulation, and enactive social cognition. *Brain Research, 1079*(1), 25-35.
- Akazaki, M. (2010). Negotiating different assumptions: The experience of mature Japanese students in British universities. *Journal of Studies in International Education, 14*(4), 355-370.
- Al-Khatib, M. A. (1994). A sociolinguistic view of the language of persuasion in Jordanian society. *Language, culture and curriculum, 7*(2).
- Al-Khatib, M. A. (2001). The pragmatics of letter-writing. *World Englishes, 20*(2), 179.
- Atkinson, D. (1990). Discourse analysis and written discourse conventions. *Annual Review of Applied Linguistics, 11*, 57-76.
- Aud, S., Fox, M. A., KewalRamani, A., & National Center for Education Statistics. (2010). Status and trends in the education of racial and ethnic groups. NCES 2010-015: National Center for Education Statistics.
- Avila, J., & Moore, M. (2012). Critical literacy, digital literacies, and Common Core State Standards: A workable union? *Theory Into Practice, 51*(1), 27-33.

- Azmitia, M., Cooper, C. R., & Brown, J. R. (2009). Support and guidance from families, friends, and teachers in Latino early adolescents' math pathways. *Journal of Early Adolescence*, 29(1), 142-169.
- Baptiste, I. (2001). Educating lone wolves: Pedagogical implications of human capital theory. *Adult Education Quarterly*, 51(3), 184-201.
- Berman, R. (1994). Learners' transfer of writing skills between languages. *TESL Canada Journal*, 12(1), 29-46.
- Billings, E. S. (2009). El alfabetismo y las familias latinas: A critical perspective on the literacy values and practices of Latino families with young children. *Journal of Latinos and Education*, 8(4), 252-269.
- Bliss, L. B., & Sandiford, J. R. (2004). Linking study behaviors and student culture to academic success among Hispanic students. *Community College Journal of Research and Practice*, 28(3), 281-295.
- Boas, F. (1921). *The mind of primitive man*. New York: Macmillan.
- Bock, T. (2006). A consideration of culture in moral theme comprehension: Comparing native and European American students. *Journal of Moral Education*, 35(1), 71-87.
- Boduroglu, A., Shah, P., & Nisbett, R. E. (2009). Cultural differences in allocation of attention in visual information processing. *Journal of Cross-Cultural Psychology*, 40(3), 349-360.
- Bol, L., & Berry, R. Q. (2005). Secondary mathematics teachers' perceptions of the achievement gap. *High School Journal*, 88(4), 32-45.
- Bresnan, J., & Hay, J. (2008). Gradient grammar: An effect of animacy on the syntax of *give* in New Zealand and American English. *Lingua*, 118(2), 245-259.

- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42.
- Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. Cambridge, U.K.: Cambridge University Press.
- Bruce, I. (2008). *Academic writing and genre: A systematic analysis*. London: Continuum International Publishing Group, Limited.
- Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Buchtel, E. E., & Norenzayan, A. (2008). Which should you use, intuition or logic? Cultural differences in injunctive norms about reasoning. *Asian Journal of Social Psychology*, 11(4), 264-273.
- Buck, R. (1985, April). *Emotion and cognition: A developmental-interactionist perspective*. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Toronto, Ontario, Canada.
- Buriel, R. (1983). Teacher–student interactions and their relationship to student achievement: A comparison of Mexican-American and Anglo-American children. *Journal of Educational Psychology*, 75(6), 889-897.
- Cammarota, J. (2007). A social justice approach to achievement: Guiding Latina/o students toward educational attainment with a challenging, socially relevant curriculum. *Equity & Excellence in Education*, 40(1), 87-96.
- Cerna, O. S., Pérez, P. A., & Sáenz, V. (2009). Examining the precollege attributes and values of Latina/o bachelor's degree attainers. *Journal of Hispanic Higher Education*, 8(2), 130-157.

- Chambliss, M. J., & Murphy, P. K. (2002). Fourth and fifth graders representing the argument structure in written texts. *Discourse Processes*, 34(1), 91-115.
- Cheon, B. K., Im, D., Harada, T., Kim, J.-S., Mathur, V. A., Scimeca, J. M., . . . Chiao, J. Y. (2011). Cultural influences on neural basis of intergroup empathy. *NeuroImage*, 57(2), 642-650.
- Chiao, J. Y., & Mathur, V. A. (2010). Intergroup empathy: How does race affect empathic neural responses? *Current Biology: CB*, 20(11), R478-R480.
- Chua, H. F., Boland, J. E., & Nisbett, R. E. (2005). Cultural variation in eye movements during scene perception. *Proceedings of the National Academy of Sciences of the United States of America*, 102(35), 12629-12633.
- Church, A. T., Katigbak, M. S., Del Prado, A. M., Ortiz, F. A., Mastor, K. A., Harumi, Y., . . . Cabrera, H. F. (2006). Implicit theories and self-perceptions of traitedness across cultures. *Journal of Cross-Cultural Psychology*, 37(6), 694-716.
- Cicourel, A. V. (2006). The interaction of discourse, cognition and culture. *Discourse Studies*, 8(1), 25-29.
- Civil, M., & Quintos, B. (2009). Latina mothers' perceptions about mathematics teaching and learning. In B. Greer, S. Mukhopadhyay, A. B. Powell & S. Nelson-Barber (Eds.), *Culturally responsive mathematics education* (pp. 321-343). New York: Routledge.
- Common Core State Standards Initiative. (2011). *Common Core State Standards Initiative: About the standards*. Retrieved from <http://www.corestandards.org/about-the-standards>
- Common Core State Standards Initiative. (2013). *Key points in English language arts*. Retrieved from <http://www.corestandards.org/resources/key-points-in-english-language-arts>

- Connor, U. M. (1996). *Contrastive rhetoric: Cross-cultural aspects of second-language writing*. Cambridge, UK: Cambridge University Press.
- Contreras, F., & Stritikus, T. (2008). Understanding opportunities to learn for Latino students in Washington: Report submitted to the Washington state commission on Hispanic affairs (College of Education, Trans.): University of Washington.
- Coronel-Molina, S. M., & Rodríguez-Mondoñedo, M. (2012). Introduction: Language contact in the Andes and universal grammar. *Lingua*, 122(5), 447-460.
- CTB/McGraw-Hill. (2007). *Oregon English Language Proficiency Assessment (ELPA): Proficiency Level Descriptors (PLDs)*. Retrieved from <http://www.ode.state.or.us/search/page/?id=1224>
- D'Angelo, F. J. (1974). A generative rhetoric of the essay. *College Composition and Communication*, 25(5), 388-396.
- Darder, A. (1991). *Culture and power in the classroom: A critical foundation for bicultural education*. Westport, CT: Bergin & Garvey.
- Darwish, A.-F. E., & Huber, G. L. (2003). Individualism vs collectivism in different cultures: A cross-cultural study. *Intercultural Education*, 14(1).
- De La Paz, S. (2005). Effects of historical reasoning instruction and writing strategy mastery in culturally and academically diverse middle school classrooms. *Journal of Educational Psychology*, 97(2), 139-156.
- Delgado-Gaitan, C. (2005). Family narratives in multiple literacies. *Anthropology & Education Quarterly*, 36(3), 265-272.

- Derrick-Mescua, M., & Gmuca, J. L. (1985). *Concepts of unity and sentence structure in Arabic, Spanish, and Malay*. Paper presented at the 36th Conference on College Composition and Communication, Minneapolis, MN, Minneapolis, MN.
- Devitt, A. J. (2008). *Writing genres*. Carbondale, IL: Southern Illinois University Press.
- Dijksterhuis, A., & Bargh, J. A. (2001). The perception-behavior expressway: Automatic effects of social perception on social behavior. *Advances in Experimental Social Psychology*, (33), 1-40.
- DiMaggio, P. (1997). Culture and cognition. *Annual Review of Sociology*, 23(1), 263.
- DiMaggio, P., & Markus, H. R. (2010). Culture and social psychology. *Social Psychology Quarterly*, 73(4), 347-352.
- Dolan, S. L. (2009). Missing out: Latino students in America's schools *Statistical Brief*. Washington, D.C.: National Council of La Raza
- Domínguez, L. A. (1976). *Redacción uno*. Tlacoquemécatl, Mexico: Editorial Diana.
- Dong, Y., & Lee, K. (2008). A cross-cultural comparative study of users' perceptions of a webpage: With a focus on the cognitive styles of Chinese, Koreans and Americans. *International Journal of Design*, 2(2). Retrieved from <http://www.ijdesign.org/ojs/index.php/IJDesign/article/view/267/163>
- Donovan, C. A., & Smolkin, L. B. (2006). Children's understanding of genre and writing development. In C. A. MacArthur, S. Graham & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 131-143). New York: Guilford Press.
- Donovan, J. M., & Rundle, B. A. (1997). Psychic unity constraints upon successful intercultural communication. *Language & Communication*, 17(3), 219-235.



- Duffy, S., Toriyama, R., Itakura, S., & Kitayama, S. (2009). Development of cultural strategies of attention in North American and Japanese children. *Journal of Experimental Child Psychology, 102*(3), 351-359.
- Duke, N. K., & Kays, J. (1998). "Can I say 'once upon a time'?: Kindergarten children developing knowledge of information book language. *Early Childhood Research Quarterly, 13*(2), 295-318.
- Durning, S. J., & Artino, A. R. (2011). Situativity theory: A perspective on how participants and the environment can interact: AMEE guide no. 52. *Medical Teacher, 33*(3), 188-199.
- Englert, C. S., Mariage, T. V., & Dunsmore, K. (2006). Tenets of sociocultural theory in writing instruction research. In C. A. MacArthur, S. Graham & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 208-221). New York: Guilford Press.
- Espinosa, R., & Ochoa, A. (1986). Concentration of California Hispanic students in schools with low achievement: A research note. *American Journal of Education, 95*(1), 77-95.
- Espinoza-Herold, M. (2007). Stepping beyond *sí se puede*: Dichos as a cultural resource in mother-daughter interaction in a Latino family. *Anthropology & Education Quarterly, 38*(3), 260-277.
- Evans, K., Rotello, C. M., Li, X., & Rayner, K. (2009). Scene perception and memory revealed by eye movements and receiver-operating characteristic analyses: Does a cultural difference truly exist? *The Quarterly Journal of Experimental Psychology, 62*(2), 276-285.
- Feng, D., & O'Halloran, K. L. (2012). Representing emotive meaning in visual images: A social semiotic approach. *Journal of Pragmatics*.

- Fletcher, T. V., & Navarrete, L. A. (2011). Learning disabilities or difference: A critical look at issues associated with the misidentification and placement of Hispanic students in special education programs. *Rural Special Education Quarterly*, 30(1), 30-38.
- Flores, A. (2007). Examining disparities in mathematics education: Achievement gap or opportunity gap? *High School Journal*, 91(1), 29-42.
- Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College composition and communication*, 32(4), 365-387.
- Fort, K. (1971). Form, authority, and the critical essay. *College English*, 32(6), 629-639.
- Fosnot, C. T. (2005). Constructivism revisited: Implications and reflections. In C. T. Fosnot (Ed.), *Constructivism: Theory, perspectives and practice* (pp. 276-291). New York: Teachers College Press.
- Frajzyngier, Z., & Jirsa, B. (2006). The principle of indirect means in language use and language structure. *Journal of Pragmatics*, 38(4), 513-542.
- Fuligni, A. J. (1998). Authority, autonomy, and parent-adolescent conflict and cohesion: A study of adolescents from Mexican, Chinese, Filipino, and European backgrounds. *Developmental Psychology*, 34(4), 782-792.
- Fuligni, A. J. (2001). Family obligation and the academic motivation of adolescents from Asian, Latin American, and European backgrounds. *New Directions for Child and Adolescent Development*, 2001(94), 61-75.
- Gaitan, C. D. (2004). *Involving Latino families in schools: Raising student achievement through home-school partnerships*. Thousand Oaks, CA: Corwin Press.
- Garcia, E. E., & Jensen, B. (2007). Advancing school readiness for young Hispanic children through universal prekindergarten. *Harvard Journal of Hispanic Policy*, 20, 25+.

- García, E. E., & Náñez, J. E. (2011). *Bilingualism and cognition: Informing research, pedagogy, and policy*. Washington D.C.: American Psychological Association.
- Garrett-Peters, P. T., & Fox, N. A. (2007). Cross-cultural differences in children's emotional reactions to a disappointing situation. *International Journal of Behavioral Development, 31*(2), 161-169.
- Geary, D. C. (1996). Biology, culture, and cross-national differences in mathematical ability. In R. J. Sternberg & T. Ben-Zeev (Eds.), *The nature of mathematical thinking* (pp. 145-171). New York: Routledge.
- Gee, J. P. (2007). *Social linguistics and literacies: Ideology in discourses*. Retrieved from <http://books.google.com/books?id=xqFNjA8e6rkC>
- Geertz, C. (1973). *The interpretation of cultures : Selected essays* (2000 ed.). New York: Basic Books.
- Gimbel, S. (2012). *Einstein's Jewish Science: Physics at the intersection of politics and religion*. Baltimore, MD: The Johns Hopkins University Press.
- Godó, Á. M. (2008). Cross-cultural aspects of academic writing: A study of Hungarian and North American college students L1 argumentative essays. *International Journal of English Studies, 8*(2), 65-111.
- Goh, J., Chee, M., Tan, J., Venkatraman, V., Hebrank, A., Leshikar, E., . . . Park, D. (2007). Age and culture modulate object processing and object—scene binding in the ventral visual area. *Cognitive, Affective, & Behavioral Neuroscience, 7*(1), 44-52.
- Gonzalez, J. E., & Uhing, B. M. (2008). Home literacy environments and young Hispanic children's English and Spanish oral language: A communality analysis. *Journal of Early Intervention, 30*(2), 116-139.

- González-García, F. (2009). The family of object-related depictives in English and Spanish: Towards a usage-based constructionist analysis. *Language Sciences*, 31(5), 663-723.
- Graff, G. (2003). *Clueless in academe: How schooling obscures the life of the mind*. New Haven, CT: Yale University Press.
- Greeno, J. G. (1997). On claims that answer the wrong questions. *Educational Researcher*, 26(1), 5-17.
- Greenough, W. T., Black, J. E., & Wallace, C. S. (1987). Experience and brain development. *Child Development*, 58(3), 539-559.
- Gusa, D. L. (2010). White institutional presence: The impact of whiteness on campus climate. *Harvard Educational Review*, 80(4), 464-490.
- Gutchess, A., Welsh, R., Boduroğlu, A., & Park, D. (2006). Cultural differences in neural function associated with object processing. *Cognitive, Affective, & Behavioral Neuroscience*, 6(2), 102-109.
- Gutierrez, K. (1992). A comparison of instructional contexts in writing process classrooms with Latino children. *Education and Urban Society*, 24(2), 244-262.
- Gutsell, J. N., & Inzlicht, M. (2012). Intergroup differences in the sharing of emotive states: Neural evidence of an empathy gap. *Social Cognitive and Affective Neuroscience*, 7(5), 596-603.
- Han, S., & Northoff, G. (2008). Culture-sensitive neural substrates of human cognition: A transcultural neuroimaging approach. *Nature Reviews Neuroscience*, 9(8), 646-654.
- Haun, D. B. M., Rapold, C. J., Janzen, G., & Levinson, S. C. (2011). Plasticity of human spatial cognition: Spatial language and cognition covary across cultures. *Cognition*, 119(1), 70-80.

- Hedden, T., Ketay, S., Aron, A., Markus, H. R., & Gabrieli, J. D. E. (2008). Cultural influences on neural substrates of attentional control. *Psychological science, 19*(1), 12-17.
- Hein, G., & Singer, T. (2008). I feel how you feel but not always: The empathic brain and its modulation. *Current Opinion in Neurobiology, 18*(2), 153-158.
- Hemphill, F. C., Vanneman, A., & National Center for Education Statistics. (2011). *Achievement gaps: How Hispanic and White students in public schools perform in mathematics and reading on the national assessment of educational progress. Statistical analysis report.* (NCES 2011-459). Washington, D.C.: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011459>.
- Hillocks, G. (2010). Teaching argument for critical thinking and writing: An introduction. *English Journal, 99*(6), 24-32.
- Hinkel, E. (1997). Indirectness in L1 and L2 academic writing. *Journal of Pragmatics, 27*(3), 361-386.
- Hirschfeld, L. A., & Gelman, S. A. (1994). Toward a topography of mind: An introduction to domain specificity. In L. A. Hirschfeld & S. A. Gelman (Eds.), *Mapping the mind: Domain specificity in cognition and culture* (pp. 3-35). New York, NY: Cambridge University Press.
- Holtgraves, T. (1986). Language structure in social interaction: Perceptions of direct and indirect speech acts and interactants who use them. *Journal of Personality and Social Psychology, 51*(2), 305-314.
- Holtgraves, T. (1997). Styles of language use: Individual and cultural variability in conversational indirectness. *Journal of Personality and Social Psychology, 73*(3), 624-637.

- Hoosain, R. (1986). Language, orthography and cognitive processes: Chinese perspectives for the Sapir-Whorf hypothesis. *International Journal of Behavioral Development*, 9(4), 507-525.
- Howard, T. C. (2010). *Why race and culture matter in schools: Closing the achievement gap in America's classrooms*. New York: Teachers' College Press.
- Humes, K. R., Jones, N. A., & Ramirez, R. R. (2011). Overview of race and Hispanic origin, 2010 *2010 Census Briefs*.
- Huntsinger, C. S., Jose, P. E., Krieg, D. B., & Luo, Z. (2011). Cultural differences in Chinese American and European American children's drawing skills over time. *Early Childhood Research Quarterly*, 26(1), 134-145.
- Íñigo-Mora, I. (2004). On the use of the personal pronoun *we* in communities. *Journal of Language & Politics*, 3(1), 27-52.
- Ivey, G. (2011). Opening up the conversation on literacy, college, and career. *Journal of Adolescent & Adult Literacy*, 55(2), 96-99.
- Jahoda, G. (1986). A cross-cultural perspective on developmental psychology. *International Journal of Behavioral Development*, 9(4), 417-437.
- Janssen, A. B., & Geiser, C. (2012). Cross-cultural differences in spatial abilities and solution strategies--an investigation in Cambodia and Germany. *Journal of Cross-Cultural Psychology*, 43(4), 533-557.
- Jarvis, S., & Pavlenko, A. (2007). *Crosslinguistic influence in language and cognition*. New York: Taylor & Francis.
- Jiménez, R. T. (2000). Literacy and the identity development of Latina/o students. *American Educational Research Journal*, 37(4), 971-1000.

- Jobson, L., & O'Kearney, R. (2008). Cultural differences in retrieval of self-defining memories. *Journal of Cross-Cultural Psychology, 39*(1), 75-80.
- Johnson, G. (2012, August 5th). Quantum leaps [review of the book *Einstein's Jewish Science*, by Steven Gimbel]. *The New York Times Book Review*, pp. 1, 14.
- Jonassen, D. (2009). Reconciling a human cognitive architecture. In S. Tobias & T. M. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 13-33). New York: Routledge.
- Kamimura, N. (2011). A study of EFL argumentative strategies: Factors that affect the choice of organizational pattern. *Asian Englishes, 14*(2), 56-73.
- Kaplan, R. B. (1966). Cultural thought patterns in inter-cultural education. *Language Learning, 16*(1-2), 1-20.
- Kaplan, R. B. (2000). Contrastive rhetoric and discourse analysis: Who writes what to whom? When? In what circumstances? In S. Sarangi & M. Coulthard (Eds.), *Discourse and social life* (pp. 82-102). Cornwall, UK: Longman.
- Kashima, E. S., & Kashima, Y. (1998). Culture and language: The case of cultural dimensions and personal pronoun use. *Journal of Cross-Cultural Psychology, 29*(3), 461-486.
- Keaten, J., Kelly, L., & Pribyl, C. B. (1997). Communication apprehension in Japan: Grade school through secondary school. *International Journal of Intercultural Relations, 21*(3), 319-343.
- Keesing, R. M. (1974). Theories of culture. *Annual Review of Anthropology, 3*, 73-97.
- Keil, F. C. (1981). Constraints on knowledge and cognitive development. *Psychological Review, 88*(3), 197-227.
- Kellogg, R. T. (1999). *The psychology of writing*. New York: Oxford University Press.

- Kim, M.-S., & Kim, H.-J. (1997). Communication goals: Individual differences between Korean and American speakers. *Personality and Individual Differences, 23*(3), 509-517.
- Kim, M.-S., Sharkey, W. F., & Singelis, T. M. (1994). The relationship between individuals' self-construals and perceived importance of interactive constraints. *International Journal of Intercultural Relations, 18*(1), 117-140.
- Kitayama, S., Duffy, S., Kawamura, T., & Larsen, J. T. (2003). Perceiving an object and its context in different cultures: A cultural look at New Look. *Psychological science, 14*(3), 201-206.
- Kitayama, S., & Uskul, A. K. (2011). Culture, mind, and the brain: Current evidence and future directions. *Annual Review of Psychology, 62*(1), 419-449.
- Komaki, G., Moriguchi, Y., Ohnishi, T., & Maeda, M. (2006). Neuroimaging study of affect regulation and culture. *International Congress Series, 1287*(0), 135-139.
- Kwon, Y., Scheibe, S., Samanez-Larkin, G. R., Tsai, J. L., & Carstensen, L. L. (2009). Replicating the positivity effect in picture memory in Koreans: Evidence for cross-cultural generalizability. *Psychology and Aging, 24*(3), 748-754.
- Lan, X., Legare, C. H., Ponitz, C. C., Li, S., & Morrison, F. J. (2011). Investigating the links between the subcomponents of executive function and academic achievement: A cross-cultural analysis of Chinese and American preschoolers. *Journal of Experimental Child Psychology, 108*(3), 677-692.
- Larson, R. (1987). Structure and form in non-narrative prose. In G. Tate (Ed.), *Teaching composition: 12 bibliographical essays* (pp. 39-82). Fort Worth, TX: Texas Christian University Press.



- Lave, J. (1997). What's special about experiments as contexts for thinking. In M. Cole, Y. Engeström & O. Vasquez (Eds.), *Seminal papers from the laboratory of comparative human cognition* (pp. 57-69). Cambridge, U.K.: Cambridge University Press.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Lee, Y., Chiang, W., & Hung, H. (2008). Lexical association and false memory for words in two cultures. *Journal of Psycholinguistic Research*, 37(1), 49-58.
- Lench, H. C., Flores, S. A., & Bench, S. W. (2011). Discrete emotions predict changes in cognition, judgment, experience, behavior, and physiology: A meta-analysis of experimental emotion elicitation. *Psychological Bulletin*, 137(5), 834-855.
- Liu, J. J. (2009). Intercultural rhetorical pattern differences in English argumentative writing. *Journal of English as an International Language*, 4, 93-109.
- Li, J. (2012). *Cultural foundations of learning: East and West*. Cambridge, UK: Cambridge University Press.
- Li, P., Abarbanell, L., Gleitman, L., & Papafragou, A. (2011). Spatial reasoning in Tenejapan Mayans. *Cognition*, 120(1), 33-53.
- Lieberman, P. (2006). The foxp2 gene, human cognition and language. *International Congress Series*, 1296(0), 115-126.
- Liu, L. (2005). Rhetorical education through writing instruction across cultures: A comparative analysis of select online instructional materials on argumentative writing. *Journal of Second Language Writing*, 14(1), 1-18.
- Lleras, C., & Rangel, C. (2009). Ability grouping practices in elementary school and African American/Hispanic achievement. *American Journal of Education*, 115(2), 279-304.

- Lloyd, G. E. R. (1990). *Demystifying mentalities*. Cambridge, UK: Cambridge University Press.
- Lopez, F. (2010). Identity and motivation among Hispanic English language learners in disparate educational contexts. *Education Policy Analysis Archives*, 18(16).
- Madrid, E. M. (2011). The Latino achievement gap. *Multicultural Education*, 19(3), 7-12.
- Martínez-Roldán, C. M., & López-Robertson, J. M. (1999). Initiating literature circles in a first-grade bilingual classroom. *Reading Teacher*, 53(4), 270-281.
- Marzano, R. J. (2007). *The art and science of teaching*. Alexandria, VA: Association for Supervision & Curriculum Development.
- Masuda, T., & Nisbett, R. E. (2006). Culture and change blindness. *Cognitive Science*, 30(2), 381-399.
- Matalene, C. (1985). Contrastive rhetoric: An American writing teacher in China. *College English*, 47(8), 789-808.
- Matlin, M. W. (2009). *Cognition* (7th ed.). Hoboken, NJ: Wiley.
- Matusov, E. (2008). Applying a sociocultural approach to Vygotskian academia: 'our tsar isn't like yours, and yours isn't like ours'. *Culture & Psychology*, 14(1), 5-35.
- Maynard, A. E., & Greenfield, P. M. (2003). Implicit cognitive development in cultural tools and children: Lessons from Maya Mexico. *Cognitive Development*, 18(4), 489-510.
- Mercado, C. (2005). Seeing what's there: Language and literacy funds of knowledge in New York Puerto Rican homes. In A. C. Zentella (Ed.), *Building on strength: Language and literacy in Latino families and communities* (pp. 134-147). New York, NY: Teachers College Press.
- Mercier, H. (2011). On the universality of argumentative reasoning. *Journal of Cognition and Culture*, 11(1-2), 85-113.

- Miellet, S., Zhou, X., He, L., Rodger, H., & Caldara, R. (2010). Investigating cultural diversity for extrafoveal information use in visual scenes. *Journal of Vision, 10*(6).
- Mills, C. W. (1980). On intellectual craftsmanship (1952). *Society, 17*(2), 63-70.
- Moll, L. C., Armanti, C., Neff, D., & Gonzalez, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory Into Practice, 31*(2), 132.
- Montaño-Harmon, M. R. (1991). Discourse features of written Mexican Spanish: Current research in contrastive rhetoric and its implications. *Hispania, 74*(2), 417-425.
- Moore, N. S., & MacArthur, C. A. (2012). The effects of being a reader and of observing readers on fifth-grade students' argumentative writing and revising. *Reading and Writing: An Interdisciplinary Journal, 25*(6), 1449-1478.
- Mshelua, A. Y., & Lapidus, L. B. (1990). Depth picture perception in relation to cognitive style and training in non-Western children. *Journal of Cross-Cultural Psychology, 21*(4), 414-433.
- Na, J., & Choi, I. (2009). Culture and first-person pronouns. *Personality and Social Psychology Bulletin, 35*(11), 1492-1499.
- Na, J., & Kitayama, S. (2011). Spontaneous trait inference is culture-specific: Behavioral and neural evidence. *Psychological science, 22*(8), 1025-1032.
- Nagel, J. (1994). Constructing ethnicity: Creating and recreating ethnic identity and culture. *Social Problems, 41*(1). Retrieved from <http://www.itwgroup.com/bpnews/archives/Nagel%20Constructing%20ethnicity.pdf>
- National Center for Education Statistics. (2012). *Fast facts: Teacher trends*. Retrieved from <http://nces.ed.gov/fastfacts/display.asp?id=28>

- Newell, G. E., Beach, R., Smith, J., VanDerHeide, J., Kuhn, D., & Andriessen, J. (2011). Teaching and learning argumentative reading and writing: A review of research. *Reading Research Quarterly*, 46(3), 273-304.
- Nippold, M. A., & Ward-Lonergan, J. M. (2010). Argumentative writing in pre-adolescents: The role of verbal reasoning. *Child Language Teaching & Therapy*, 26(3), 238-248.
- Nisbett, R. E., & Miyamoto, Y. (2005). The influence of culture: Holistic versus analytic perception. *Trends in Cognitive Sciences*, 9(10). Retrieved from <http://scholar.google.com>
- Nisbett, R. E., & Norenzayan, A. (2002). Culture and cognition. In D. L. Medin (Ed.), *Stevens' handbook of experimental psychology* (3rd ed.). New York: John Wiley and Sons, Inc.
- Norenzayan, A., Smith, E. E., Kim, B. J., & Nisbett, R. E. (2002). Cultural preferences for formal versus intuitive reasoning. *Cognitive Science*, 26(5), 653-684.
- Norment, N. (1984). *Contrastive analyses of organizational structures and cohesive elements in native and ESL Chinese, English, and Spanish writing*, Fordham (Doctoral dissertation retrieved from <http://fordham.bepress.com/dissertations/AAI8409265/>).
- O'Meara, C., & Pérez Báez, G. (2011). Spatial frames of reference in Mesoamerican languages. *Language Sciences*, 33(6), 837-852.
- Oldfather, C. M. (2007). Writing, cognition, and the nature of the judicial function. Retrieved from <http://scholarship.law.marquette.edu/cgi/viewcontent.cgi?article=1091&context=facpub>
- Oregon Department of Education. (2012). *Test administration manual: 2011-2012 school year*. Salem, OR: State of Oregon. Retrieved from <http://www.ode.state.or.us/wma/teachlearn/testing/admin/2011-12-tam.pdf>.

- Oregon Department of Education. (2013). *FAQ topics*. Retrieved from <http://www.ode.state.or.us/apps/faqs/index.aspx?=41>
- Ortiz, C., Valerio, M. A., & Lopez, K. (2012). Trends in Hispanic academic achievement: Where do we go from here? *Journal of Hispanic Higher Education, 11*(2), 136-148.
- Ortiz, F. (2001). Using social capital in interpreting the careers of three Latina superintendents. *Educational Administration Quarterly, 37*(1), 58-85.
- Oyserman, D., & Lee, S. W. S. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin, 134*(2), 311-342.
- Park, D. C., & Huang, C.-M. (2010). Culture wires the brain: A cognitive neuroscience perspective. *Perspectives on Psychological Science, 5*(4), 391-400.
- Park, Y. S., & Kim, B. S. K. (2008). Asian and European American cultural values and communication styles among Asian American and European American college students. *Cultural Diversity and Ethnic Minority Psychology, 14*(1), 47-56.
- Pearlman, D. (1978). The cognate trap in writing by Hispanic students. *College English, 39*(7), 844-846.
- Peterson, C. Q. Y. (2009). "when I was little": Childhood recollections in Chinese and European Canadian grade school children. *Child Development, 80*(2), 506-518.
- Plata, M., & Masten, W. G. (1998). Teacher ratings of Hispanic and Anglo students on a behavior rating scale. *Roeper Review, 21*(2), 139.
- Pong, S.-I., Strickland, M., Wise, J., & Mid-Atlantic Regional Educational Laboratory. (2012). *Analyzing performance by Pennsylvania grade 8 Hispanic students on the 2007/08 state assessment. REL technical brief*. (REL 2012–No. 025). University Park, PA: Regional

- Educational Laboratory Mid-Atlantic. Retrieved from [http://ies.ed.gov/ncee/edlabs/regions/midatlantic/pdf/REL\\_2012025.pdf](http://ies.ed.gov/ncee/edlabs/regions/midatlantic/pdf/REL_2012025.pdf).
- Pontius, A. A. (1997). Impact of literacy training on spatial representation in southwest Ethiopia. *International Journal of Intercultural Relations*, 21(3), 299-304.
- Porter, A., McMaken, J., Hwang, J., & Yang, R. (2011). Common Core Standards: The new U.S. Intended curriculum. *Educational Researcher*, 40(3), 103-116.
- Rass, R. A. (2011). Cultural transfer as an obstacle for writing well in English: The case of Arabic speakers writing in English. *English Language Teaching*, 4(2). Retrieved from <http://www.ccsenet.org/journal/index.php/elt/article/viewFile/10792/7650>
- Reardon, S. F., & Galindo, C. (2009). The Hispanic-White achievement gap in math and reading in the elementary grades. *American Educational Research Journal*, 46(3), 853-891.
- Reese, L. (2012). Storytelling in Mexican homes: Connections between oral and literacy practices. *Bilingual Research Journal*, 35(3), 277-293.
- Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity, 62 Fed. Reg. 58782-58790 (30 October 1997).
- Riding, A. (1989). *Distant neighbors: A portrait of the Mexicans*. New York: Vintage Books.
- Robertson, S. I. (2001). *Problem solving*. Philadelphia, PA: Taylor & Francis.
- Rocci, A. (2006). Pragmatic inference and argumentation in intercultural communication. *Intercultural Pragmatics*, 3(4), 409-442.
- Rodriguez, M. A. (2012). "But they just can't do it": Reconciling teacher expectations of Latino students. *Journal of Cases in Educational Leadership*, 15(1), 25-31.
- Ross, M., & Wang, Q. (2010). Why we remember and what we remember. *Perspectives on Psychological Science*, 5(4), 401-409.

- Ross, N. (2004). *Culture and cognition: Implications for theory and method*. Thousand Oaks, CA: Sage Publications, Inc.
- Roth, W.-M. (1998). Situated cognition and assessment of competence in science. *Evaluation and Program Planning*, 21(2), 155-169.
- Russell, J. A., Suzuki, N., & Ishida, N. (1993). Canadian, Greek, and Japanese freely produced emotion labels for facial expressions. *Motivation and Emotion*, 17(4), 337-351.  
Retrieved from <https://www2.bc.edu/~russeljm/publications/mot%26emo1993.pdf>
- Ryan, C. L., & Siebens, J. (2012). *Educational attainment in the United States: 2009: Population characteristics*. (P20-566). Retrieved from <http://www.census.gov/prod/2012pubs/p20-566.pdf>.
- Sa'adeddin, M. A. (1989). Text development and Arabic-English negative interference. *Applied Linguistics*, 10(1).
- Sanchez, K. S., Bledsoe, L. M., Sumabat, C., & Ye, R. (2004). Hispanic students' reading situations and problems. *Journal of Hispanic Higher Education*, 3(1), 50-63.
- Saracho, O. N. (2007). Hispanic families as facilitators of their children's literacy development. *Journal of Hispanic Higher Education*, 6(2), 103-117.
- Schneider, D. M. (1980). *American kinship: A cultural account*: University of Chicago Press.
- Schunk, D. H. (2012). *Learning theories: An educational perspective* (6th ed.). Boston: Pearson.
- Seifert, C. M. (1999). Situated cognition and learning. In R. A. Wilson & F. C. Keil (Eds.), *The MIT encyclopedia of the cognitive sciences* (Vol. 134, pp. 767-769). Cambridge, MA: MIT Press.
- Sherblom, J. C. (1990). Organizational involvement expressed through pronoun use in computer mediated communication. *Communication Research Reports*, 7(1), 45-50.

- Shore, B. (1996). *Culture in mind: Cognition, culture, and the problem of meaning*. New York: Oxford University Press.
- Silva, T. (1992). L1 vs L2 writing; ESL graduate students' perceptions. *TESL Canada Journal*, 10(1), 27-47.
- Spicer-Escalante, M. (2005). Writing in two languages/living in two worlds: A rhetorical analysis of Mexican-American written discourse. In M. Farr (Ed.), *Latino language and literacy in ethnolinguistic chicago* (pp. 172-193). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Spiro, R., & DeSchryver, M. (2009). Constructivism: When it's the wrong idea and when it's the only idea. In S. Tobias & T. M. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 106-124). New York: Routledge.
- Sporns, O. (2010). *Networks of the brain*. Cambridge, MA: MIT Press.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69(5), 797-811.
- Stevens, T., Olivárez, A., & Hamman, D. (2006). The role of cognition, motivation, and emotion in explaining the mathematics achievement gap between Hispanic and White students. *Hispanic Journal of Behavioral Sciences*, 28(2), 161-186.
- Stigler, J. W., Shweder, R. A., & Herdt, G. H. (1990). *Cultural psychology: Essays on comparative human development*. New York: Cambridge University Press.
- Stolte, J. F., & Fender, S. (2007). Framing social values: An experimental study of culture and cognition. *Social Psychology Quarterly*, 70(1), 59-69.
- Tardy, C. M. (2006). Researching first and second language genre learning: A comparative review and a look ahead. *Journal of Second Language Writing*, 15(2), 79-101.



Ting-Toomey, S., Gao, G., Trubisky, P., Yang, Z., Kim, H. S., Lin, S.-L., & Nishida, T., Reg. 275-296

Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press.

Tsai, J. L., & Chentsova-Dutton, U. (2003). Variation among European Americans in emotional facial expression. *Journal of Cross-Cultural Psychology*, 34(6), 650-657.

U.S. Census Bureau. (2011, November). *Child poverty in the United States 2009 and 2010: Selected race groups and Hispanic origin* (Issue Brief No. ACSBR/10-05). Washington, D.C.: Susan Macartney.

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. (2003). *The nation's report card: State writing 2002, report for Oregon grade 4 public schools*. Retrieved from

<http://nces.ed.gov/nationsreportcard/pdf/stt2002/writing/2003532OR4.PDF>

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. (2009). *The nation's report card: State science 2009, report for Oregon grade 4 public schools*. Retrieved from

<http://nces.ed.gov/nationsreportcard/pdf/stt2009/2011453OR4.pdf>

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. (2011a). *The nation's report card: State mathematics 2011, report for Oregon grade 4 public schools*. Retrieved from

<http://nces.ed.gov/nationsreportcard/pdf/stt2011/2012451OR4.pdf>

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. (2011b). *The nation's report card: State reading 2011, report for Oregon*

grade 4 public schools. Retrieved from

<http://nces.ed.gov/nationsreportcard/pdf/stt2011/2012454OR4.pdf>

van Dijk, T. A. (2006). Discourse, context and cognition. *Discourse Studies*, 8(1), 159-177.

Vásquez-Ayora, G. (1977). *Introducción a la traductología: Curso básico de traducción*.

Washington, D.C.: Georgetown University Press.

Voigt, J. (1994). Negotiation of mathematical meaning and learning mathematics. *Educational Studies in Mathematics*, 26(2/3), 275-298.

Wai Ting, S., Perfetti, C. A., Zhen, J., & Li Hai, T. (2004). Biological abnormality of impaired reading is constrained by culture. *Nature*, 431(7004), 71-76.

Wang, Q. (2004). The emergence of cultural self-constructs: Autobiographical memory and self-description in European American and Chinese children. *Developmental Psychology*, 40(1), 3-15.

Wang, Q., Conway, M. A., & Hou, Y. (2007). Infantile amnesia: Cross-cultural investigation. In M.-K. Sun (Ed.), *New research in cognitive sciences* (pp. 95-104). New York: Nova Science Publishers, Inc.

Wang, Q., & Fivush, R. (2005). Mother-child conversations of emotionally salient events: Exploring the functions of emotional reminiscing in European-American and Chinese families. *Social Development*, 14(3), 473-495.

Whitfield, P., Klug, B. J., & Whitney, P. (2007). "Situative cognition": Barrier to teaching across cultures. *Intercultural Education*, 18(3), 259-264.

Wong, R. Y.-m., & Hong, Y.-y. (2005). Dynamic influences of culture on cooperation in the prisoner's dilemma. *Psychological science*, 16(6), 429-434.

- Wu, S.-y., & Rubin, D. L. (2000). Evaluating the impact of collectivism and individualism on argumentative writing by Chinese and North American college students. *Research in the Teaching of English, 35*(2), 148-178.
- Xu, X., Zuo, X., Wang, X., & Han, S. (2009). Do you feel my pain? Racial group membership modulates empathic neural responses. *The Journal of Neuroscience, 29*(26), 8525-8529.
- Yamamoto, Y., & Li, J. (2012). What makes a high-quality preschool? Similarities and differences between Chinese immigrant and European American parents' views. *Early Childhood Research Quarterly, 27*(2), 306-315.
- Yeh, S. S. (1998). Empowering education: Teaching argumentative writing to cultural minority middle-school students. *Research in the Teaching of English, 33*(1), 49-49.
- Yuki, M., Maddux, W. W., & Masuda, T. (2007). Are the windows to the soul the same in the East and West? Cultural differences in using the eyes and mouth as cues to recognize emotions in Japan and the United States. *Journal of Experimental Social Psychology, 43*(2), 303-311.
- Zecker, L. B. (1999). Different texts, different emergent writing forms. *Language Arts, 76*(6), 483-490.
- Zhu, W. (2001). Performing argumentative writing in English: Difficulties, processes, and strategies. *TESL Canada Journal, 19*(1), 34-50.
- Zinchenko, V. P. (1995). Cultural-historical psychology and the psychological theory of activity: Retrospect and prospect (J. V. Wertsch, Trans.). In J. V. Wertsch, P. D. Ríó & A. Alvarez (Eds.), *Sociocultural studies of mind*. Cambridge, UK: Cambridge University Press.

Zipin, L. (2009). Dark funds of knowledge, deep funds of pedagogy: Exploring boundaries between lifeworlds and schools. *Discourse: Studies in the Cultural Politics of Education*, 30(3), 317-331.

Zunshine, L. (2010). *Introduction to cognitive cultural studies*. Baltimore, MD: Johns Hopkins University Press.

## Appendix

### Common Core State Standards (CCSS) – Opinion Writing

Grade 4 (Oregon Department of Education, 2010a)

Grade 5 (Oregon Department of Education, 2010b)

#### Writing Standards

The following standards offer a focus for instruction to help ensure that students gain adequate mastery of a range of skills and applications. Each year in their writing, students should demonstrate increasing sophistication in all aspects of language use, from vocabulary and syntax to the development and organization of ideas, and they should address increasingly demanding content and sources. *Students advancing through the grades are expected to meet each year’s grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.* The expected growth in student writing ability is reflected both in the standards themselves and in the collection of annotated student writing samples in Appendix C.

#### Writing

4.W

##### *Text Types and Purposes*

- 4.W.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
- Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer’s purpose.
  - Provide reasons that are supported by facts and details.
  - Link opinion and reasons using words and phrases (e.g., *for instance, in order to, in addition*).
  - Provide a concluding statement or section related to the opinion presented.

#### Writing

5.W

##### *Text Types and Purposes*

- 5.W.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
- Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer’s purpose.
  - Provide logically ordered reasons that are supported by facts and details.
  - Link opinion and reasons using words, phrases, and clauses (e.g., *consequently, specifically*).
  - Provide a concluding statement or section related to the opinion presented.

