WHAT DO I NEED TO SUCCEED: THE CASE OF ARAB ENGINEERING GRADUATE STUDENTS' SELF-PERCEPTIONS OF WRITING

A Dissertation Presented in Partial Fulfillment of the Requirements for the

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by

Katherine Hellmann

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Major Professor: Emily Duvall, Ph.D.

AUTHORIZATION TO SUBMIT DISSERTATION

This dissertation of Katherine Hellmann, submitted for the degree of PhD with a major in Education and titled "WHAT DO I NEED TO SUCCEED: THE CASE OF ARAB ENGINEERING GRADUATE STUDENTS' SELF-PERCEPTIONS OF WRITING," has been reviewed in final form. Permission, as indicated by the signatures and dates given below, is now granted to submit final copies to the College of Graduate Studies for approval.

Major Professor _____ Date_____
Emily Duvall

Committee Members _____ Date_____
Paul Gathercoal

_____ Date_____
Rodney McConnell

_____ Date_____
Steve Chandler

_____ Date_____
Caroline Payant

Department Administrator _____ Date_____
Paul Gathercoal

Discipline's College Dean _____ Date_____
Corinne Mantle-Bromley

Final Approval and Acceptance by the College of Graduate Studies

_____ Date_____
Jie Chen

Abstract

Through a sociocultural lens, this study examines five Saudi Arabian engineering graduate students' valuation of English writing, their self-perceptions of writing, what promoted the development of those self-perceptions and how their self-perceptions compare with engineering industry writing standards. The data collected for this qualitative case study triangulates interviews, focus groups, field notes, syllabi and instructional materials. The findings of this study enhance our understanding of how Saudi graduate students are immersed into literacy practices in engineering at institutions of higher education in the United States. The results reveal that Saudis perceive English writing as important, yet they have varying understandings of their English writing based on a variety of sociocultural factors. Generally speaking, the discoveries suggest the need for a closer examination of how institutions of higher education support writing and specifically communities of practice that enable writing mastery in Intensive English Programs and in graduate coursework.

Keywords: literacy, second language writing, Arab, engineering, international, sociocultural, English as a second language (ESL), qualitative case study, Intensive English Program (IEP)

Curriculum Vitae

Katherine M. Hellmann

hell3340@vandals.uidaho.edu http://khellman.weebly.com

EDUCATION

University of Idaho, Moscow, ID

2013

Ph.D. in Education

Dissertation: What Do I Need to Succeed: the Case of Arab Engineering Graduate Students

2007

Iowa State University, Ames, IA

M.A. in Teaching English as a Second Language/Applied Linguistics

Specialization: Literacy

Thesis: Using Error Gravity Research to Inform the Tutoring of ESL Students in Writing and Media Help Center

2005

University of Idaho, Moscow, ID

B.A. Spanish, B.A. English Literature, Minor: American Studies, Honors Certificate

Semester abroad: Universidad del País, Bilbao, Spain *Fluent Spanish speaker

ADMINISTRATIVE EXPERIENCE

Associate Director

2012-Present

Washington State University's Office of International Programs

Provided vision and guidance for international student center services for 2,000 international students. Supervised staff of fifteen, and co-advised International Students' Council. Increased participation in three support programs by 25 % in six months. Programs included Campus, Friends and Family, and Engage the World. Found and utilized external funding to market and improve program quality. Developed program and event learning outcomes and campus-wide assessment for global competencies. Co-taught Global Leadership Certificate courses. Ran all events and programming to integrate international and domestic students.

2006-2008

ESL Consultant, ESL and Spanish Instructor

Des Moines Area Community College

Coordinated the non-credit ESL program. Orchestrated marketing and recruitment efforts. Participated in interviewing and hiring of faculty and staff. Updated and developed ESL website. Acted as content expert for ESL program and Lab. Orchestrated and assisted in the ESL registration and recruitment process. Used Banner to facilitate standardized testing for all ESL sites. Instructed non-credit and credit ESL from low-beginning to advanced levels. Developed online ESL writing course using WebCT. Assisted in implementation of credit/bridge ESL course development. Instructed Elementary Spanish II, an integrated skills course.

TEACHING EXPERIENCE

Master Teacher, Academic Faculty

2008-2012

University of Idaho's American Language and Culture Program

As head teacher, assisted in curriculum and program development, strategic planning and

collaboration with other departments. Coordinated with other instructors and taught beginning to advanced level courses using content-based teaching in intensive English for academically-bound students. Led sixteen standards for CEA program accreditation, facilitated professional development seminars, mentored new faculty, facilitated placement testing, participated in hiring procedures, materials selection and book orders.

2008-2009 *ESL Instructor*

Washington State University's Intensive American Language Center

Coordinated with other instructors and taught various levels of intensive English courses using content-based teaching for an accredited intensive English program.

2005-2008 *ESL Instructor, Intensive English Program Instructor, Intensive English and Orientation Program*

Iowa State University

Planned and instructed courses whose goals were to increase the TOEFL scores for academically bound students in an accredited IEP. Made use of dedicated language computer lab for students.

English Instructor

2007-2008 Grand View College

Instructed the following courses: Writing for Business, ESL Developmental Writing and sections of Freshman Composition. Used an electronic portfolio grading system that heavily emphasized both process and product writing in both traditional and computer classrooms.

2005-2007 *Teaching Assistant, Cross-Cultural English 104/105*

Iowa State University

Instructed cross-cultural freshman composition courses that comprised of both international (ESL) students as well as native Iowans. The course emphasized written, oral, visual and electronic communication alongside cross-cultural literature to provide students with models of academic writing and to discuss culture as it relates to English and academic writing. The course also featured a web-based teaching component.

2006-2007 *Assistant, International Teaching Assistance Program*

Iowa State University

Assisted in the planning and evaluation of the SPEAK/TEACH test for international TAs. Evaluated lectures and pronunciation skill levels of all new international TAs and assisted with classroom instruction of ITAs.

2005-2007 *Graduate Writing Consultant, Writing and Media Help Center*

Iowa State University

Tutored undergraduate and graduate students in composition. Focused on helping students develop as writers and work on individual projects and papers. Responsibilities also

included administrative duties such as grant-writing, coordinating and providing professional development workshops and interviewing new tutors.

2003-2004

EFL Assistant Teacher

J.M. Barandiaran Junior High School, Leioa, Spain

Assisted the head teacher in planning and implementation of bilingual (English and Spanish) lessons. Conducted cultural studies between the United States and the Basque Country of Spain. Planned and executed a two-hour a week intensive English conversation class that focused on authentic tasks in speaking and pronunciation to help prepare junior high students for a study abroad program in England.

PRESENTATIONS & IN-SERVICE TRAINING FACILITATION

- Mapping Campus Resources, (American Council on Education), Washington DC, 2013)
- Dollars and Sense: International Student Support Services are Worth It (National Association of International Educators Conference, Spokane, WA, 2013)
- Literate Enough to Succeed: the Case of Arab Engineering Graduate Students (Globalization, Diversity and International Education Conference, Washington State University, Vancouver, WA, 2013)
- Local Globalization in the Washington State University Office of International Programs International Center (Multicultural Student Services, Pullman, WA, 2013)
- Communication Across Cultures Across Campus (Learn, Empower, Achieve, Progress Conference, Moscow, ID, 2013)
- Breaking the Rules: ESL Classroom Management Solutions (Spokane Regional ESL Conference, Spokane, WA, 2012)
- Advanced Academic Literacy and International Graduate Students: Institutional and Instructional Applications (Tri-TESOL, Highline Community College, Des Moines, WA, 2011)
- Selling Your Students on Writing: Using Advertising to Teach EAP (WAESOL Conference, Highline Community College, 2010)
- Be Careful What You Wish For: Student Affective Issues and Faculty Collaboration in Content-Based English for Academic Purposes (Spokane Regional ESL Conference, Gonzaga University, Spokane, WA, 2010)
- In-Service Workshop for ESL Teachers: Best Practices in Writing: Pedagogy and Application (University of Idaho, Moscow, ID, 2008)
- In-Service Training for ESL Instructors: Using CALL in the Classroom (Des Moines Area Community College, Des Moines, IA, 2006)

MEMBERSHIPS & AWARDS

- National Association of International Educators (attended 2012 Houston Conference)
- Teachers of English to Speakers of Other Languages (attended 2011 Intensive English Program Accreditation Workshop in New Orleans and 2008 New York City conference)
- Phi Beta Kappa (University of Idaho, 2004-Present)
- Phi Kappa Phi (Iowa State University, 2005-Present)
- Sigma Tau Delta (University of Idaho, attended 2005 conference)
- Leishman Award for Outstanding English major (University of Idaho, 2005)
- Grace Nixon Award in English (University of Idaho, 2004)

COMPUTER SKILLS

Microsoft Word, Excel, Power Point, Bblearn, Prezi, Elluminate, Front Page, Hot Potatoes, Macromedia Dreamweaver, Flash using XHTML and CSS, Adobe Photoshop, InDesign, web-based corpus linguistics software.

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I would also like to thank the other members of my dissertation committee: Dr. Paul Gathercoal, Dr. Rodney McConnell, Dr. Steve Chandler and Dr. Caroline Payant. Dr. Gathercoal helped me refine my research objectives and supported my desire to do qualitative research. Dr. McConnell challenged me to think about the use of terms in my work and expanded my own understanding of content area literacy and international graduate students. Dr. Chandler patiently answered every question I ever asked and always made time to talk with me about his experiences teaching Arab students. Dr. Payant's assistance with methodology and literature moved me forward faster than I could have imagined. I am deeply thankful for the expertise of each person on this committee and the strengths they brought to my research topic. Together, you were the best committee I could have asked for.

I am also grateful to all my friends and colleagues at the University of Idaho. Without your help and support, I would have been lost. For your kind words, your late night phone calls, your long lunches and our moments of celebration together along the path to the Ph.D., I deeply thank you. Finally, I want to thank my family and my friends who stood beside me while I plowed through this degree program with excitement and vigor. I especially thank my daughter who patiently gave up so much time with me so that I could work on my Ph.D.

and whose very presence kept me going ‘til the very end. May the written words of your mother follow you in your own academic journey. Thank you all!

Dedication

To Lizzie

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CHAPTER 1

Introduction

1.1 Background of the Problem

I have been working with international students, specifically with English as a Second Language (ESL) students in Intensive English Programs (IEPs), for nearly a decade at both the university and community-college levels. I have always been particularly interested in ESL students' writing and the unique challenges these students face in order to develop sufficient English proficiency to succeed in their degree programs. And I am especially intrigued by how writing proficiency impacts success at the graduate student level.

As a teacher for an IEP, I taught an academic skills research writing course for international graduate students eleven times over a span of five years. On the very first day of class the first time I taught the course, a young Saudi Arabian student approached me about the syllabus. I can still remember the student's words, "Teacher Kate, I don't need to write. I am engineering. I do math." Clearly, he was referring to the one major assignment in the course: to develop an argumentative research paper specific to each student's field that incorporated academic sources. In response, I gave what I perceived as a thoughtful explanation to the student: that engineers write technical reports and that he, as a graduate student, would also write a thesis or dissertation. I added that if he was looking to obtain employment in the field of engineering in the United States, he would likely be required to write a great deal. I was pretty confident that I had ensured both the student and myself of the necessity for learning to write well in English. His reply: "Teacher, engineering is not needing writing. Learning writing is for writers."

Over the years, I had similar interactions every time I taught the course and these encounters were specifically with engineering students from Saudi Arabia. This fueled my interest in what happens to Saudi engineering graduate students after they finish their degrees. It left me concerned as to whether engineering coursework and master's thesis requirements at U.S. universities were not being perceived as industry relevant because students might not be required to write with this type of rigor as engineers in their home countries. Eventually, my initial concern and frustration grew into a question: Why was it that Saudi engineering students were saying this, and what was it about their culture, their previous educational experiences, their social relationships and maybe even the field of engineering that might have led them to believe that their ability to construct the written word was not relevant to their future?

1.2 Purpose of the Study

As a result of my experiences, I decided to pursue a line of inquiry involving Saudi Arabian engineering graduate students and English writing. I felt that I needed to understand their self-perceptions of the English language writing process, but even more so that there needed to be an investigation into their expectations of their writing versus my expectations of their writing.

Thus, the purpose of this qualitative case-study of five Saudi Arabian engineering graduate students is to understand their self-perceptions of English writing and how they value writing. In terms of this study, self-perception is defined as a person's belief about himself or herself, including attributes about who and what self means (Baumeister, 1999). In other words, self-perceptions are how we think about and evaluate ourselves based on social, cultural and educational experiences in different contexts (Lewis, 1990). With respect to

writing, self-perceptions become important to this study since it aims to understand how students see themselves as writers of English. That is, by examining students' self-perceptions of their English writing and how these developed, we can begin to understand the experiences they have had in different contexts and how those experiences may have impacted their valuation of their English writing. As a result, the goal of this study is to understand how Saudi engineering graduate students' self-perceptions emerged based on their experiences in Saudi Arabia and their experiences at a small, public land-grant university in the western United States.

1.3 Research Questions

In applying the goal of the study to more pragmatic concerns, the focus of the study has become to understand why Saudi engineering graduate students might be questioning the value of their learning to write well in English, how this perspective came to be and whether it is legitimate with regard to writing expectations in the field of engineering. The overarching research question asks:

> How do Saudi engineering graduate students' self-perceptions of their English writing impact their value of learning to write in the academy and reflect their expectations for writing in the engineering industry?

In order to answer the overarching question, it is important to tease out the sub-questions that can be directly addressed.

1. What self-perceptions of English writing do Saudi engineering graduate students report?

It is through the responses to this question that I believe I can discover whether students understand their English writing as proficient enough to succeed at the university. To answer

this question, I interviewed students with regard to how they felt about their experiences with regard to English writing; it was important to find out how they felt rather than to have them report a score.

2. What has fostered the development of these self- perceptions of English writing?

Here, I wanted to be able to understand where these self-perceptions of English writing came from. And, since self-perceptions, according to Lewis (1990) arise from educational, social, cultural and experiences, I chose to break down the development of self-perceptions to address two sub-questions.

a. What role has prior education played in mediating English writing?
b. What role have social and cultural relationships played in mediating English writing?

For the first question, I narrowed the investigation into prior education by focusing on students' experiences in Saudi Arabia learning to write in both their first language, Arabic, and in their second language, English. As such, I interviewed them to find out about their first and second language writing histories. I asked students to tell me about their writing experiences in Saudi Arabia and at the participating university in the IEP, and during graduate engineering coursework. During the interviews, I also asked students to tell me about their writing experiences at any English-speaking institution of higher education that they had previously attended.

The second sub-question, together with prior education, was aimed at complementing the picture of the ways that students' self-perceptions of English writing developed. To answer this second sub-question, I needed to get more specific with regard to social and

cultural relationships in Saudi Arabia and in the United States. As a result, during interviews, I asked students about their families and friends in Saudi Arabia and in the United States with regards to English as well as how they learned to write in Arabic. I also asked them about their experiences interacting with IEP faculty and engineering faculty, as well as their major professors.

Finally, the third question directly addressed the aspect of the overarching question of the study concerning how students' self-perceptions of their English writing reflect their expectations for writing in the engineering industry.

3. How do Saudi engineering graduate students' self-perceptions of their English writing align with the engineering industry's writing standards?

My approach to data collection in order to address these questions involved gathering information from the top ten employers of engineering graduates from the participating university. I also searched for jobs along with their descriptions offered by these companies in Saudi Arabia and in the United States to find out what kind of writing was required. To build on the information I was gathering in the field, I also conducted focus groups with engineering faculty and IEP faculty. In addition, I observed two IEP courses and a graduate engineering course and I collected syllabi and instructional materials from the IEP and graduate engineering programs. Overall, through the responses to these focus groups and interviews and the other data collected including observations, job descriptions, syllabi and instructional materials, I aimed to better understand Saudi engineering graduate students' experiences with regard to writing.

1.4 Importance and Relevance of the Study

Based on the research questions, sub-questions and the data collected to answer them, what follows are the most valuable potential contributions of the study:

1. To learn about Arab education with regard to how it impacts Saudi students' L2 English writing
2. To understand Saudi engineering graduate students' apparent pattern of disinterest in the development of their writing skills
3. To understand Saudi engineering graduate students' personal and professional needs with regards to future employment given the increasing number of this demographic of students across institutions of higher education in the United States
4. To understand how graduate degree programs, IEPs and writing centers address Saudi students' L2 English writing
5. To build on existing literature that connects L1-L2 literacy development and specifically writing

An investigation into Saudi Arabian graduate students and English writing, one so tightly linked to sociocultural histories, is necessarily bound by contexts.

1.5 The Importance of Context to the Study

Since context is so important to the study, the context of international students in higher education in the United States becomes the focus of Chapter 2 to provide the reader with an understanding of international student trends, demographics, and how the research site fits in with those. Building on that, sociocultural theory as attributed to Vygotsky (1978) situates the contexts of students' prior social, cultural and educational experiences in which their self-perceptions of English writing developed in Chapter 3. To help the reader

understand the context of valuation of English writing and how that connects with industry writing standards, Chapter 3 also includes a review of literature with regard to Arabic writers of English, education and the engineering industry. In order to purposefully bring together these contexts, I discuss how a qualitative case study design can merge the contexts of the engineering industry's writing standards, university-level writing preparation and students' experiences in Chapter 4. What follows are the findings, analysis and conclusions in Chapters 5 and 6.

CHAPTER 2

Context of the Study: International Students in Higher Education

2.1 Introduction

The focus of this chapter is on building context for the research to better understand how Saudi Arabian engineering graduate students at the participating university fit in to trends of international student numbers and demographics across all U.S. colleges and universities. In addition, this chapter offers an understanding of why international students who enter a university through an English placement exam and matriculate directly into degree programs with those who enter an IEP may have different experiences. Finally, it situates the support services international students receive at the participating university in the IEP, in graduate engineering degree programs and in the writing center within national trends for support services for international students.

2.2 The Growth of International Students in Higher Education

Universities and colleges in the United States widely recognize the benefits of admitting international students, which includes revenue generation, diversity and intercultural learning among other things (Andrade, 2011). *The Chronicle of Higher Education*, for example, reported that the number of international students enrolling in American colleges and universities grew more in 2010 than in the previous year, reaching a total of 723,277 students ("Chronicle", 2012). And *Business Insider* noted that the number of international students coming to the United States for graduate school has jumped by nearly 7% since 2006 (Rogers, 2011). It's not surprising then, according to a 2010 National Science Foundation Report, that the total number of international graduate students at American universities is projected to continue to increase, and that international "graduate students

[will] far outweigh [international] undergraduates" (Burrelli, 2010). Already, by 2007, 19% of all graduate students in the U.S. were international students (Bhandari & Chow, 2007). With this data in mind, we need to consider what it means to be successful as an international graduate student at an American university.

One possible predictor of degree program success is a high score on the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS). Indeed, the vast majority of institutions of higher education in the United States require evidence of English proficiency for admittance as measured by the TOEFL or IELTS (Andrade, 2009). Yet students may still arrive unprepared for the differences in dialect and speed of discourse much less the extensive reading and writing in an academia where English is the medium of instruction (Cheng, Myles & Curtis, 2004; Holmes, 2004; Huang, 2004; Schutz & Richards, 2003). Cultural differences can also impact student adjustment, leading to homesickness, isolation or detachment from the target culture and impacting achievement (Hechanova-Alampay, Beehr, Christiansen, & Van Horn, 2002; Lacina, 2002; Meyer, 2001). As a result, we need to consider how well international students are being supported at institutions of higher education in the United States. And while universities and colleges have developed strategies and support programs for international students, including immigration, cultural adjustment and settling in, they do not specifically address the immersion into implicit academic expectations that may differ significantly from students' previous educational experiences in their home countries (Andrade & Evans, 2009). The usual response to the perceived needs of international students at institutions of higher education in the United States is to provide Intensive English Programs (IEPs), but they are typically non-

credit and rarely offer graduate-level academic English language preparation (Andrade, 2011).

2.3 Situating the Research Site

The participating university is a typical research-one institution, fits the national demographics of growth of international students in higher education in the United States and, like many such institutions, it has an Intensive English Program. Specifically, it is a land grant university in a small college town and it is home to approximately 9,000 undergraduates and 2,000 graduate students (R. Harder, personal communication, April 17, 2012). Of this population, approximately 700 are international students and 250 of these are international graduate students (R. Harder, personal communication, April 17, 2012). In other words, at the university where this research was conducted, just over 2% of the university is comprised of international graduate students (T. Johnson, personal communication, March 29, 2013). Still, this university is a good example of the increasing number of international graduate students as these percentages are actually slightly higher than national trends of international graduate student populations at U.S. institutions of higher education (NAFSA, 2006).

It's interesting to note that overall international student enrollment has been steadily increasing at institutions of higher education in the U.S. despite a lagging global economy (Burrelli, 2009). And as economic conditions improve, international student enrollment is projected to increase dramatically at land-grant institutions such as the one where this research was conducted. As one of the institutions experiencing 6% growth over the 2010-2011 academic year, the participating university fits into the category of "Other Institutions" in the table below (Burelli, 2009).

Table 1: Growth in international student enrollment in U.S. Universities, 2010

	10 Largest Institutions	25 Largest Institutions	50 Largest Institutions	100 Largest Institutions	All Other Institutions
International Total	11%	9%	10%	10%	6%
Country/Region of Origin					
China	27%	23%	24%	23%	13%
India	-8%	-4%	1%	2%	4%
South Korea	-9%	-5%	-4%	-2%	-1%
Middle East & Turkey *	18%	10%	13%	14%	20%
Field of Study					
Arts & Humanities	9%	6%	9%	5%	3%
Business	15%	5%	13%	12%	7%
Education	44%	10%	12%	12%	-2%
Engineering	14%	11%	10%	9%	7%
Life Sciences	4%	3%	7%	8%	5%
Physical & Earth Sciences	3%	4%	8%	11%	11%
Social Sciences & Psychology	0%	1%	4%	2%	3%
Other Fields	14%	21%	18%	16%	6%

The international programs office at the university expects to see a large increase in total international student enrollment in the next 3-5 years and they anticipate that Saudi Arabian students will be one of the top three countries represented (R. Harder, personal communication, April 17, 2012). In the United States in general, one of the fastest-growing populations of international graduate students at U.S. universities is from Saudi Arabia (NAFSA, 2006). It's also important to note that, at the participating university, three of the top majors for international graduate students are in the discipline of engineering. The IEP at the participating university has already seen a 22% increase between 2008 and 2013 in students from Saudi Arabia who plan to study engineering (K. Schiffelbein, personal communication, May 7, 2013).

2.4 The Intensive English Program

The purpose of the IEP is to teach English as a Second Language (ESL) to international students ("IEP Manual," 2012). The Mission of the IEP is

To provide non-native speakers of English with the linguistic, academic, social, and

> cultural skills necessary to successfully navigate university environments in the United States. (IEP Manual, 2012, p. xi)

The IEP at the participating university received a five-year initial accreditation from the Commission for English Language Program Accreditation in 2013. This is important because it demonstrates the quality of the IEP as accreditation is the gold standard of excellence for an IEP.

In addition, it is extremely unusual for an IEP to receive a 5-year initial accreditation. Thus, the participating university could be considered exemplary with regards to its IEP. Generally speaking, IEP levels range from 1-5 at most universities. At the participating university, the IEP levels range from 1-6. Levels 1-5 represent beginning to advanced proficiency and level 6 is the graduate preparatory level. The IEP level 6, graduate preparation curriculum has two courses that are specifically aimed at improving students' writing: a reading composition and the other and an academic skills course (IEP Manual, 2012). These courses contain learning outcomes that require students to produce academic-level writing (IEP Manual, 2012).

Yet it is also important to know that less than 1% of international graduate students at the participating university go through this IEP level 6 curriculum and its "linguistic, academic, social and cultural preparation" (T. Johnson, personal communication, Jan. 11, 2013). The other 99% take the TOEFL or IELTS exam, pass it and directly enter their degree programs at the university with no additional assistance with language or anything else (T. Johnson, personal communication, Jan. 11, 2013). In fact, in fall 2012, the IEP at the participating university had approximately 130 international undergraduate students and only two conditionally admitted international graduate students (T. Johnson, personal communication, January 11, 2013).

The latter number varies from session to session, fluctuating between 1-5 students (T. Johnson, personal communication, June 23, 2013). This means that the IEP primarily serves international undergraduate students and only a very, very small amount of international graduate students. In other words, few international graduate students attend the IEP and enter the university through the IEP conditional admission process. Conditional admission means students are allowed to enter an IEP and then a university degree program once it has been determined that their English language proficiency is sufficient to enter the university or college.

According to the office of graduate admissions at the participating university, students who do enter the university through the IEP receive additional English language training before they enter graduate degree programs (P. Beutler, personal communication, February 22, 2013). The office of graduate admissions at the university where this research was conducted reports that international graduate students who take IEP courses typically have a higher grade point average and are more likely to be retained in their degree programs than students who enter the university directly via the TOEFL or IELTS (P. Beutler, personal communication, February 22, 2013).

Thus, at the university where this research was conducted, support services for international graduate students do exist and they are in-line with national trends (Andrade, 2011). However, according to national trends for support services, the fact that the IEP has a graduate-level curriculum is very unusual (Andrade, 2011). Of interest, approximately half of all of the very small number of international graduate students who enter the participating university plan to enter a graduate engineering degree program at the university and 80% of those are Arabic-speaking males (T. Johnson, personal communication, January 11, 2013).

2.4.1 The Role of English Placement Exams and Intensive English Programs

The office of graduate admissions at the participating university has found that very few students enter graduate programs after attending the IEP because the majority of the graduate programs at the university do not accept conditional admission (P. Beutler, personal communication, February 22, 2012). Due to this lack of conditional admissions, the majority of applicants must be prepared to begin their graduate program, which includes having sufficient English writing proficiency to succeed at the graduate level, without entering the IEP (P. Beutler, personal communication, February 22, 2013). For example, of all of international graduate applicants in fall 2012 at the university, just 8% were offered conditional admission and less than 1% chose to accept conditional admission and enter the IEP before their graduate programs (P. Beutler, personal communication, February 22, 2013).

It is important to compare students who may take a graduate level curriculum in an IEP to those who directly enter a university via the TOEFL or IELTs. Brinton, Snow & Wesche (2003) found that, for the most part, international students who take the TOEFL or IELTS, and receive a score high enough to enter a university have lower retention rates than students who take a course or matriculate into the university from an IEP that uses a content-based English for Academic Purposes (EAP) curriculum. An EAP program is "an instructional approach in which non-linguistic academic content, including subject matter such as social studies or mathematics, is taught to students through the medium of a language that is not their first, so that while they are learning curricular content they are also learning an additional language" (Lyster, 2011, p. 611). The IEP at the participating university is an example of a program that uses a content-based EAP curriculum, but very few IEPs currently use this type of curriculum (Andrade, 2011). Indeed, content-based instruction has been

found to be effective for students who need advanced academic literacy and specifically need assistance with writing (Anderson, 1990, 1993). While many international graduate students receive TOEFL or IELTS scores high enough to matriculate directly into graduate degree programs without attending an IEP, one has to wonder what that score represents.

In summary, the number of international graduate students is predicted to increase in the United States in general and at the participating university. One of the top countries predicted to enroll at the participating university in the next 3-5 years are Saudi Arabians and engineering is currently one of the most popular disciplines. And, while the IEP at the university offers a content-based EAP curriculum for graduate students, only 1% of graduate students enter the university conditionally this way which means the other 99% enter the university directly by taking an English placement exam.

CHAPTER 3

Literature Review

3.1 Introduction

One way to understand Saudi Arabian engineering graduate students' writing development is through sociocultural theory (SCT), as attributed to Vygotsky (1978). Sociocultural theory is a social and cognitive theory of development that allows us to understand human development as emerging from a given society and culture (Vygotsky, 1978). Sociocultural theory offers us the opportunity to understand Saudi engineering graduate students' writing development in both Saudi Arabia and in the United States in light of their social, cultural and educational experiences. Specifically, Vygotsky's (1978) genetic method provides an approach to understanding human development given these experiences. That is, by using the genetic method we can understand students' trajectories of writing development as a part of a common cultural heritage and also in terms of unique individuals as they develop higher mental functions that enable writing.

Higher mental functions are "the mediated, internalized result of social interaction" (Wertsch, 2006, p. 32). In order to comprehend the ways that students develop higher mental functions and English writing proficiency through a SCT lens, we look to mediation and internalization. Mediation and internalization allow us to consider how this on-going process of writing development happens. One way to understand mediation is through communities of practice. In communities of practice, we begin to understand how Saudi engineering graduate students are socialized into English writing. With respect to understanding socialization and writing development, it is also important to contextualize graduate-level writing within the term academic literacy which, for graduate students, encompasses far more

than the act of writing. That is, it also becomes relevant to consider how graduate coursework, the role of IEPs and major professors impact writing development.

In terms of students' first language writing development, we can look to the literacy practices in the Arab world as well as leading activities in the educational system of Saudi Arabia. The concept of leading activity is used to refer to "activities during which most new cognitive and social development occurs" ("Tools," 2013). A discussion of leading activities follows later. We can also situate second language development, in this case, English writing development with regard to first language mastery in order to understand how leading activities influence development. Further, it is important to consider how writing is taught in the field of engineering and how it is used in the engineering industry. In other words, understanding the relevant aspects of sociocultural theory allows us to understand Saudi engineering graduate students' English writing development.

3.2 Cultural-Historical Perspective: Sociocultural Theory

Sociocultural theory is one of the theories that has emerged from Vygotsky's (1978) cultural-historical theoretical framework. It is based on the understanding that human activities take place in a given cultural context, mediated by language and other symbol systems and understood from the perspective of their historical development (Vygotsky, 1978). Sociocultural theory offers a lens through which one can understand the social and educational experiences that mediate second language (L2) writing in different cultural contexts. In this study, I use sociocultural theory to guide my examination of the ways in which five Saudi Arabian engineering graduate students have come to understand English writing in the cultural context of an American university. That is, using a sociocultural lens offers both an orientation to the investigation and a method for understanding participants'

self-perceptions of their English writing. It facilitates this by allowing us to consider the developmental perspective with regard to how writing is value and simultaneously contextualizing this with regard to how self-perceptions of writing can be compared to writing standards in the engineering industry. To unravel participants' self-perceptions of English writing from a sociocultural lens, we need to understand the contexts in which individuals develop higher mental functions from which writing develops.

3.3 The Genetic Method: An Approach to Understanding Human Development

To understand human development from this perspective, we begin with Vygotsky's (1978) genetic method wherein higher mental functions have their source in cultural history. In other words, the genetic method allows us to see how developmental changes occur given that the emergence and development of higher mental functions takes place in socially and culturally embedded contexts. That is, higher mental functions can only be understood from the perspective of how and where they occur in growth (Wertsch, 1991). Vygotsky defined the genetic method using four domains whereby mental functioning and its development can be understood: phylogenesis of modern humans as a species, sociocultural history of human cultures over time, ontogenesis of individuals over the life span and microgenesis, the development of mental functions and processes over shorter periods of time (1978). He made it clear that the domains of the genetic method are intertwined and that we can use these four domains to comprehend and more deeply understand development as a process of change on different levels (Vygotsky, 1978). For the purposes of this study, we will not look at phylogenetic development since, as Vygotsky noted, there is no overlap between phylogenetic change and the emergence of culture (1978). In addition, this study will not

consider microgenesis as we are interested in development over time. Rather, the focus will be on the sociocultural and ontogenetic domains.

In this study, both the sociocultural and ontogenetic domains of Vygotsky's genetic method are used to understand the developmental trajectory of the individual within the context of their educational, social and cultural systems in both Saudi Arabia and in the U.S. Consideration of the sociocultural domain allows us to understand the development of Saudi engineering graduate students' self-perceptions of English writing in terms of the overall development with regard to their writing in their first language. The ontogenetic domain offers us insight into the development of each individual's writing during their lifetime given their unique experiences (Vygotsky, 1978).

3.4 Sociocultural Theory and Higher Mental Functions

According to Vygotsky (1978), an individual's development is socially mediated through the use of cultural tools in dialectical processes involving interactions with others in given cultural contexts. Vygotsky understood that it is through this on-going dialectical process and mediation that an individual develops higher mental functions such as memory, metacognition, self-reflection, focused attention and verbal thinking (1978). These higher mental functions differ from lower mental functions, which are biological in origin and can be understood as innate, natural behavior (Vygotsky, 1978). In contrast, higher mental functions, which are sociocultural in origin, are conscious and develop through social and cultural interactions (Vygotsky, 1978). These social, cultural interactions most often involve language, which acts as a tool in the development of higher mental functions. That is, psychological tools such as language enables us to bridge the gap between lower and higher mental functions enabling the development of other tools such as writing. Vygotsky (1978)

proposed that, as a result of using these tools–first through imitation, then in cooperation with others and later independently–individuals develop higher mental functions that are intentional, self-regulated, and mediated by language and other sign systems.

The type of interdependence between social processes and the construction of higher mental functioning can be best be understood by examining mediation, tools and results and internalization.

3.5 Mediation, Tools and Results

Mediation, a central component of sociocultural theory, underlies the genetic method and is important to understanding the development of higher mental functions (Lantolf, 2006). That is, humans do not act directly on the world but instead their activities are mediated by symbolic artifacts like language (Lantolf, 2006). It is through mediation that these settings shape and provide the cultural tools that are mastered by individuals whose human mental functioning is tied to cultural, institutional, and historical settings. In other words, mediation in given cultural contexts allows us to share sociocultural patterns and knowledge.

For instance, in a given cultural context, when learners begin an activity, they depend on others with more experience and knowledge. In this way, others provide external mediation to an individual who is given assistance by a more expert peer, or through an artifact to perform a task. Gradually, over time, an individual takes on increasing responsibility for their own learning and participation in a joint activity (Lave & Wenger, 1991).

As learners participate in a variety of joint activities, an individual's way of understanding and participation changes as they move from imitation, to learning, to

cooperation; they develop higher mental functions that allow them to self-mediate (Vygotsky, 1978). In other words, if we consider that, initially, a child's thoughts are nonverbal and that through joint activities in given cultural contexts, they begin to self-mediate, the specific knowledge gained through these joint activities represents the shared knowledge of a given culture (Vygotsky, 1978).

Cultures pass on higher mental functions through social interaction that enable individuals to make sense of the world and act in it. Yet the development of higher mental functions does not occur in a linear fashion. It is mediated through a dialogical and dialectical process with others. Here, language, a culturally constructed psychological tool, becomes central to mediation and the development of higher mental functions.

3.5.1 Appropriation and Mastery

Two of the most important concepts in terms of higher mental functions and the use of a tool or symbol system are appropriation and mastery. To learn a language, we appropriate and then master or attain a high proficiency of language. However, in sociocultural theory, mastery comes first and then appropriation. As Salomon (1991) explained, higher mental functions that are called upon by the use of a tool or symbol system are slowly appropriated and then approach near mastery after more and more cultivation. In other words, mastery is knowing how to do something (Wertsch, 1998). Mastery is followed by appropriation which is making that something one's own (Wertsch, 1998). That is, by appropriation, or taking something that belongs to others and making it one's own, we become agents of language (Wertsch, 1998). Agency can be defined as a relationship that is continuously co-constructed and renegotiated with those around the individual and others (Lantolf, 2006). As human agents, individuals have the ability to determine how the words of

others will be appropriated and can then embrace those words or resist them (Lantolf, 2006). Vygotsky (1978) observed that active human agents could make choices to transform knowledge as they actively participate in social practices (1978).

3.6 Internalization

According to Vygotsky (1978), an individual begins by using tools to organize the activity of other people and ends up making use of these tools as signs to restructure his or her own mental activity. As a result, transformations in higher mental functions occur which become voluntary, internalized. That is, internalization is the process by which humans bring mediating artifacts like language into their activity in order to gain control over mental functions (Lantolf, 2006). Vygotsky (1978) described internalization as the forum through which control of natural mental ability is established. As Winegar (1997) wrote, internalization is "a negotiated process of development that is co-constructed" so that it becomes a process of "reorganization of the person-environment relationship" which impacts future organization (p. 31). Ways of being are mastered and appropriated as both a social and an individual process. In working with, through and beyond what they have appropriated in social participation and then internalized, COPs co-construct new knowledge in three stages.

Gal'perin, a student of Vygotsky, explained the three stages of the internalization process: "i) making an external action maximally explicit, ii) transference of its representation to audible speech, iii) transference of its representation to inner speech" (Wertsch, 1985, p. 66). In other words, what originates as mediation or social speech aimed at influencing or regulating others, develops into psychological speech, aimed at regulating higher mental functions and physical activity (Lantolf, 2006).

Developmental changes are defined in terms of mediation, and mediation provides the key to formulating the link between interpsychological and intrapsychological functioning (Wertsch, 2007).That is, for Vygotsky, every psychological function in development appears twice, first on the social, interpsychological, level between people and then on the individual, intrapsychological level (1978, p. 57). Wertsch (1985) warns against adopting the transfer model of internalization, however (p. 62). He argues that functions are not simply copied from the external, interpsychological plane to the internal, intrapsychological plane. Instead, internalization transforms the process itself and transforms its structures and functions (Wertsch, 1985). The connection between external and internal activity is generative and the main issue is how internal higher mental processes are created as a result of exposure to external activity. That is, internalization can be understood in terms of knowing how to do something so that as mediation occurs, tools orient a person externally and signs do the same internally (Lantolf, 2006).

3.6.1 Imitation

Imitation also figures heavily into the discussion of internalization and mediation. Vygotsky's (1978) view on imitation is that it is a key contributing factor for the development of higher mental functions. Imitation occurs in settings in which a learner is able to collaborate in social interaction with an expert. That is, imitation is the bridge for internalization, an idea brought forth in Vygotksy's distinction between learning and development. To understand this distinction, we can look to Baldwin who defined two types of imitation: simple and persistent (1906). Simple imitation is the best the individual can do without attempts to improve the imitation. Persistent imitation means the activity is intentional and goal-directed, it involves cognition, and it is cyclic and reproductive so that

the individual may modify the original. In other words, imitation is focused on the creation of a faithful originality rather than on reproduction. It is important to understand that this notion of imitation is not the traditional one of copying.

As Lantolf (2006) explained, selective attention through imitation may lead to reduction, expansion and repetition of social models. In other words, while education may refine or improve higher mental functions, it builds on those capacities that children have already developed as a result of social interaction with members of their culture before they ever enter school (Vygotsky, 1978). Vygotsky (1978) applied the term imitation in a descriptive way to account for the constructive work that occurs in the zone of proximal development between a learner and an expert.

3.6.2 Zone of Proximal Development

Vygotsky's view of development and education is an extension of his approach to the development of higher mental functions. He concluded that through internalization individuals develop the capacity to use higher mental functions with increasingly less reliance on externally provided mediation (Vygotsky, 1978). However, the process of internalization varies from individual to individual, and indeed, across time periods for individuals (Lantolf, 2006). In order to explain this variation, Vygotsky (1978) developed the idea of the zone of proximal development (ZPD). To understand the acquisition process with regard to development and the ZPD, Vygotsky proposed that children are, at first, under the direct influence of their biological inheritance but are later impacted by cultural forces that begin to exert influence and control from the outside over their natural mental ability (1978). Members of social and cultural circles including parents, siblings or playmates enable the individual to develop control over tools that facilitate their ability to perform tasks

(Vygotsky, 1978) Later, over time, this control becomes internalized by the individual when the meaning and use of tools shifts from the external social plane to the internal plane as signs that can be used to self-mediate (Bakhtin, 1981).

3.7 Understanding Literacy in Context

From a sociocultural perspective, the development of higher mental functions which enable writing occurs through guided practice in joint activities where writing knowledge is distributed, practiced and shaped through interactive and collaborative discourse by novices and experts (Rogoff, 1990). This can also mean employing the ZPD so that effective writing apprenticeship moves from teacher modeling to collaborative planning and then independent writing.

It is through this type of guided social practice that the higher mental functions necessary for writing can be fostered through the provision of tools such as writing symbols, instruments, diagrams, mnemonics or spell checkers (Rogoff, 1990). Indeed, it is through these tools in a social environment that the process of knowledge transformation occurs. These tools can cue and support the psychological and physical acts of writing such that writing is both the tool and the result within a community of writers (Vygotsky, 1978). In other words, sociocultural theory, as attributed to Vygotsky (1978) is a way to understand how individuals are mediated into writing practices and thus how they come to understand and appropriate knowledge to craft writing in a first and a second language.

3.7.1 Learning a Second Language

Lantolf (2006) explained that in the process of learning to write in a first language, we become aware of the features of writing including the letters that represent the sounds, the letters together which represent words and then sentences. Awareness occurs involuntarily

and unconsciously in a first language, but not in the second language. As Vygotsky wrote, writing "is the algebra of speech" (1987, p. 204-5). For example, drawing and play function as preparatory stages in the development of a first written language (Vygotsky, 1978). This means we acquire a first language as "a symbolic artifact that is used to regulate other members of the community as well as they own mental activity" (Lantolf, 2008, p. 294).

Lantolf (2006) explained that learning to write in a second language is far more voluntary and conscious than learning to write in a first language. Vygotsky described learning a second language as a unified process similar to how children learn from gestures, drawing and then writing (1978).

Vygotsky observed the process of learning written language as one where first-order symbols become second-order symbols only later to become first-order at a higher level of mental functioning:

> [The] higher form . . . involves the reversion of written language from second-order symbolism. As second-order symbolism, written symbols function as designations for verbal ones. Understanding of written language is first affected through spoken language, but gradually this path is curtailed and spoken language disappears as the intermediate link. To judge from all available evidence, written language becomes direct symbolism that is perceived in the same way as spoken language. We need only try to imagine the enormous changes in the cultural development of children that occur as a result of mastery of written language and the ability to read-and of thus becoming aware of everything that human genius has created in the realm of the written word (Vygotsky, 1978, p. 116).

Social interaction is not just the foundation for development; the mechanism underlying higher mental functions is social interaction in a given cultural context. In other words, the means used in social interaction, including speech, are taken over by an individual and internalized. For instance, as a child learns to write in their first language, his or her mental functions change and neurological pathways in the brain are restructured as writing becomes both a tool and a result. This is supported by the findings of Arbib (2002) who

observed that imitation in the adult ESL classroom impacts the way that neurological connections are made and how an individual learns a second language in a given sociocultural context (Arbib, 2002). As a result of acquiring sign systems and the restructuring of neurological pathways in the brain, the process of memory, for example, becomes more powerful in the cultural context in which it is called upon to operate (Wertsch, 1991).

And we can also observe the connection of the written word in the second language based on first language mastery of the same skill. For instance, Kotik-Friedgut (2006) explained how the development of specific language functions in a first language impacts the mastery of those same functions in a second language. This trajectory of development also impacts neurology. That is, if two languages are acquired over a lifetime, then differences in neurological organization occur in the brain (Kotik-Friedgut, 2006). She clarified that

> At the time of acquisition of each respective language, the brain is at a different state of maturation, resulting in differences in cognitive development. In new language learners, the involvement of established systems of the first language is unavoidable. There is a clear transfer of skills and correlation between levels of development in two languages in bilingual individuals. Underdevelopment of a specific function in the native language may be reflected in a similar deficiency in the second language (Kotik-Freidgut, 2006, p. 48).

In this way, learning to write in a second language makes visible letters, words and systems. Yet individuals may have no prior social, cultural or historical understanding of these letters, words and systems. Indeed, second language acquisition is an ongoing process that can manifest in differing levels of mastery with respect to different skills. For instance, an individual can be fluent in speaking in a second language, but may struggle to write in a second language based on a lack of writing experience in their first language (Kotik-Freidgut, 2006). As such, if an individual does not master a skill such as writing in their first language,

this makes mastering the same skill in a second language even more challenging since neurological pathways for that skill may not exist (Kotik-Friedgut, 2006).

The development of higher mental functions is important since how we learn to write in our first language impacts the way we understand writing in a second language. Specifically, an individual's mental functions are based on earlier stages of development. For instance, tracing letters to learn how to write in a first language requires a lower mental function, but crafting a piece of writing in a first and especially in a second language requires higher mental functioning (Wertsch, 1991). The development of higher mental functions and thus writing development does not occur in isolation (Vygotsky, 1978). Writing, which calls upon higher mental functions, develops through social interaction in a given cultural context. According to Vygotsky, this cultural context is "an objective force that infuses social relationships and the historically developed uses of artifacts in concrete activity" to foster the development of higher mental functions that enable writing (Lantolf, 2006, p. 1). Writing and rhetoric in a given culture are socially constructed. As Berlin (1996) points out, "rhetoric is a cultural social event" and a "social intervention" which arises "out of a time and place and in a peculiar social context" (p. 1). As writing is consciously learned through schooling designed to fit a certain society's needs, expectations and desires, the carry-over is that the unique writing conventions of a first language may influence writing in a second language. As such, Vygotsky (1978) argued that second language appropriation and mastery is mediated by the first language.

An example of this is Luria's (1982) study of the peasants of Uzbekistan where Vygotsky and Luria tested the theory that transformation in material circumstances impacts higher mental functions. As Luria (1982) explained, the high rates of illiteracy in Uzbekistan

led the Soviet government to establish schools. Uzbeks who had been to school and those who had not were both presented with a series of syllogisms to ascertain their ability to reason deductively (Luria, 1982). In Luria's study, those who had been to school showed "a willingness and ability to operate within linguistic objects and a linguistically created reality" but those who had not been to school "invoked nonlinguistic, practical experience in their reasoning" (Wertsch, 1985, p. 35). In other words, the results showed that the illiterate individuals thought in concrete terms, rather than in abstractions. That is, the introduction of schooling impacts processes such as perception, categorization, imagination and self-analysis, which are products of the cultural environment. In turn, these processes impact development.

That means that precursors to literacy introduced in formal schooling such as gestures, drawing and written language directly influence development and higher mental functions (Vygotsky, 1978). Vygotsky observed children who wrote separate phrases or words on separate sheets of paper. These phrases or word patterns parallel speech, the model for writing. He claimed that speech dominates writing in children's earliest drawing and writing and children learn to write through discovering that they can draw (Vygotsky, 1978). This dialectical relationship cannot occur, however, without an understanding of written language. Vygotsky pointed out that "it is necessary to bring the child to an understanding of writing and to arrange that writing will be organized development rather than learning" (1978, p. 118). In other words, according to Vygotsky, drawing and play are preparatory stages in the development of written language for all learners (1978).

Scribner and Cole (1981) analyzed the development of written language. They focused on the connection between language as tool and result with respect to cognitive

development and literacy. In Liberia, Scribner and Cole (1981) replicated Luria's study. They found that three types of literacy were present: Vai script literacy, acquired outside of school, Arabic literacy, learned in religious settings and used for reading the Qur'an, and English literacy, acquired in formal schooling, used for public and government purposes. Some individuals acquired one form of literacy and others acquired more, so the findings specific to English-schooled literacy were multifaceted (Scribner & Cole, 1981). They found that literacy can be acquired independently of schooling and that literacy practices in different contexts have specific effects on cognitive competencies (Scribner & Cole, 1981). Even though the findings did not replicate Luria's, those with English literacy did not outperform those without. However, those who read and wrote Vai script had better communication skills than those who did not suggesting that schooling does have an impact on the development and operationalization of higher mental functions (Scribner & Cole, 1981).

3.7.3 Leading Activities

Tulviste (1991) replicated Scribner and Cole's (1981) study in Kirgizia in Soviet Central Asia and found a significant correlation between level of education and type of response. He found that, as level of education increased, participants gave a more abstract rather than empirical response (Tulviste, 1991). In the cultures investigated by Luria, Scribner, Cole and Tulviste, and in cultures where schooling is highly valued, any activity that is strongly encouraged by a community, especially in the education system, can become a "leading activity" that strongly influences development (Tulviste, 1991).

An example of this is Collignon's (1994) study of Hmong women in ESL classrooms in the U.S, where the connection between education among the women when they were in

Laos and their attempts to learn to write English in the U.S was examined. The study revealed that the women's developing English writing was connected to a "pre-existing [mental] function [as] they wanted to learn to write in the way that in their youth they had learned to sew" (Collignon, 1994, p. 332). The reason the activity of sewing was so connected to writing is because it was a leading activity (Tulviste, 1991). According to Collignon, the women wanted to learn to write similar to the way they had learned to sew (1994).

From a sociocultural perspective, learning, which acts as a catalyst to develop a mixture of culturally organized and mediated activity, leads developmental processes. In turn, social interaction informs the developmental and character of higher mental functions that support writing (Vygotsky, 1978). That is, for adult learners, it is worth asking which "leading activities" as Tulviste (1991) defines them, might act as a catalyst to restructure, psychological functions related to literacy in a second language. This question is worth asking because, as Bourdieu (1990) pointed out, the way we learn in childhood is strongly connected to the way we learn as adults. Indeed, it may be that students transfer their ways of coming to be writers from first language to their second language (Hudelson, 1986; Peyton & Seyoum, 1989).

3.8 Participation in Communities of Practice

To more deeply understand the first to second language transfer, we can look to Haneda (2006) who explained that "individuals do not simply receive, internalize, and construct knowledge in their minds but enact it as persons-in-the-world participating in the practices of a sociocultural community" (p. 808). In other words, knowledge is situated within cultural and historical practices in communities of practice (COPs). COPs can be defined as a group

of people who engage in social practice in a joint enterprise not limited by physical actions (Wenger, 1998). From a sociocultural perspective, the collective understanding of the COP is a legitimate site for problem solving and collaboration and can gradually move novices into experts. This is because each utterance from the COP is influenced and shaped by prior understanding.

This understanding of participating in a COP allows us to understand learning as an emerging property of an individual's legitimate peripheral participation in communities of practice through which " mind, culture, history and the social world [are] interrelated processes that constitute each other, and intentionally . . . demonstrate how learning is embroiled in identity" (Resnick, 1991, p. 64-65). According to Resnick, knowledge and participation in communities of practice increase potential for sustained development of identities of appropriation (1991). In other words, more active involvement in a community of practice fosters not only greater appropriation, but also changes an individual's identity. Resnick (1991) maintained that learning is a process that eventually results in the internalization of knowledge by individuals as part of a process of becoming a member in a community of practice. Since learning can be described as a process of social participation in a community of practice, it's crucial to understand that developing an identity as a member of the community is part of the same process (Wenger, 1998). As Lave (1996) explained, learning entails "becoming kinds of persons," and that "crafting identities in practice becomes the fundamental project subjects engage in" (p. 157).

In this way, learning is socially situated and grounded in the type of social processes in which small groups of individuals engage in concrete social interaction (Wenger, 1998). According to Wenger (1998) empowerment and agency fostered through a community of

practice create the most powerful learning environments. Empowerment occurs for a novice through the knowledge of a COP's "tacit conventions," "specific perceptions," "underlying assumptions," and "shared world views" (Wenger, 1998, p. 47). Bakhtin (1986) argued that agency occurs when individuals use prior experience to understand the expectations from "tacit conventions," underlying assumptions," and "shared world views" to respond to utterances within the COP as experts. That is, learning in the COP can be conceived of as, "a set of conceptual interdependencies among person, activity, knowledge and world . . . so that learning is legitimate peripheral participation in communities of practice" (Resnick, 1991).

3.8.1 Legitimate Peripheral Participation

As learners participate in communities of practice and in turn, as they master and appropriate knowledge and skills, they become fuller participants in the sociocultural practices of the community (Lave & Wenger, 1991). Lave and Wenger (1991) call this process legitimate peripheral participation (LPP). They define LPP as a process where novices or newcomers move from the periphery toward fuller membership through participation in communities consisting of members of varying expertise (Lave & Wenger, 1991). According to Lave and Wenger, "peripherality" is a positive term for viewing newcomers' possible amount of involvement in a community as open and flexible (1991). Indeed, legitimate peripheral participation provides a way to understand social relationships between newcomers and "old timers" as embedded in activities, identities, artifacts, and communities of knowledge and practice (Lave & Wenger, 1991).

An individual's intentions to learn are engaged and the way they come to understand learning is based on their socialization as they become a full participant in the COP and come to understand and appropriate its sociocultural practices. This social process includes, indeed

it subsumes, the learning of knowledgeable skills (Lave & Wenger, 1991). That is, legitimate peripheral participation describes a

> "process in which newcomers acquire the skill to perform by actually engaging in the practice in attenuated ways and move toward full participation by mastering the knowledge and skills critical for that particular COP" (Lave & Wenger, 1991, p. 29).

The concept of legitimate peripheral participation allows the discussion of active participation in social practice as a constituent of the learning process. As Lave and Wenger (1991) wrote, LPP provides a framework for bringing together theories of situated activity and production and reproduction of social order. Lave & Wenger (1991) emphasized the importance of connecting ideas of sociocultural transformation with the changing relationships between newcomers and old-timers in the context of a changing shared practice within communities of practice. In other words, individuals may develop identities of mastery as they change in how they participate in a COP through "the multiple social living relations and roles they experience" (Hadena, 2006, p. 810).

The concept of legitimate peripheral participation can be combined with Vygotsky's theories about language and learning because, like Vygotsky, Lave and Wenger (1991) also posit the learner in an active role: it is through their active participation that newcomers are socialized into disciplines and eventually become experts. According to Vygotsky (1978), at the core of sociocultural theory is mediation, which is based on situated negotiation and renegotiation of meaning in the world through social interaction (Vygotsky, 1978). According to Lave and Wenger (1991) that experience from negotiation of meaning in the world "develops knowledgeably skilled identities in practice and transforms communities of practice" based on social interaction (p. 55). It is relevant to how social interaction in

communities of practice facilitate international students' understanding of shared social and cultural norms with respect to academic literacy and, in this case, English writing.

3.9 Definition of Academic Literacy

Academic literacy has been defined by Spack (1997) as "the ability to read and write in the various texts assigned in [university]" but any academic who has worked with graduate students knows there is more to the acquisition of academic literacy than the ability to read and write proficiently in English (p. 4). Golde (1998) noted that all graduate students must attain academic literacy, learn about life as a graduate student, learn about the profession and become part of one's department (1998, p. 56). Golde (1998) wrote that it is no secret that all graduate students, domestic and international, have to cope with immediate socialization into a language and culture that requires them to become familiar with a new culture, new literacy tradition and new sociopolitical practices while under the pressure of time, financial hardship, and possibly unclear authority relationships with faculty.

Braine (2002) summarized the premise for research related to the academic literacy of graduate students by adding that a student's "field of study, research skills, and good reading and writing skills form only the foundation for the acquisition of academic literacy" (p. 60). As Braine pointed out, for academic literacy to be developed, students must understand the sociolinguistic cues of their new environments and specifically the culture of the university they have become a part of. Johns and Swales (2002) went on to say that academic literacy encompasses graduate students' fields of study as well as the complex set of skills, accomplishments and expectations inherent within the American academic system.

Paltridge (2004) stated that there are those who view academic literacy as a singular phenomenon, comprising a set of skills to be acquired and problems to be fixed, but a

different view would see the development of academic literacy as a socialization process through which we explain "university culture" to students (p. 90). Casanave (2002) pointed out that if there is no socialization process, international students may feel like they are failing until they learn the academic literacy necessary for success. Therefore, as recognized by L2 academic writing researchers, becoming literate in English can be a difficult, complicated and lengthy process (e.g., Belcher & Braine, 1995; Casanave, 2002; Leki, 2003, Shi & Beckett, 2002; Prior, 1995; Spack, 1997, 2004; Zhu, 2001).

Hawkins (2005) focused on language and literacy development as situated social processes ,which involve understanding the acquisition of languages and literacies as always occurring in and through interactions with others in various sociocultural contexts. Barton, Hamilton and Ivanic (2000) emphasized that this definition of literacy lays a foundation for understanding the context-dependent nature of literacy development and highlights how literacy is developed by linking writing activities to social contexts in which these are defined and practiced.

As Gee (1989) pointed out, there is also another development that has taken place in the L1 and L2 literacy literature: a shift from talking about "literacy" to referring to "literacies." Gee (1989) writes that together, classroom experiences across the curriculum mandate that students become proficient in multiple ways of reading and writing. Students are expected to be proficient in a variety of academic literacies (Gee, 1989). Leki (2007) further broadened the definition of academic literacy, adding that it also includes "the activity of interpretation and production of academic and discipline-based texts" (p. 3). Casanave and Li echo this definition in their book *Learning the Literacy Practices of Graduate School: Insiders Reflections on Academic Enculturation* which discusses in depth the literacy

practices for both domestic and international students at the graduate level (2008). They defined it as

> The tacit expectations and unwritten rules of participation, the interpersonal relationships between advisors and advisees and among peers and the impact of enculturation and interaction on student and faculty identity (Casanave & Li, 2008, p.2).

Casanave and Li (2008) asserted that social, educational and cultural systems are at work in the constant construction of our understanding of literacy. Literacy is defined not just as the multifaceted act of reading, writing and thinking, but as constructing meaning from printed text within a sociocultural context (Barton & Hamilton, 1998; Gee 1989; Heath, 1983; Street, 1995). For the purposes of the present study, academic literacy as defined by Paltridge (2004) can be employed. In this view, academic literacy is conceptualized as a form of social practice (Paltridge, 2004). This viewpoint on academic literacy reflects the "New Literacy Studies" orientation (Barton & Hamilton, 2000; Street, 1995), which, from a sociocultural perspective, broadens literacy and writing into more than a cognitive process by demonstrating that a more correct conceptualization of literacy and in this case, writing, takes into account social contexts and ideological orientations in which the acts of literacy are fostered and enacted (Gee, 2001).

3.9.1 Academic Literacy and International Graduate Students

Already, a number of second language literacy researchers have examined international students' literacy practices beyond the context of an IEP classroom by investigating the experiences of international undergraduate and graduate students in science, liberal arts, nursing and chemistry to name a few (e.g., Angelova & Riazantseva, 1999; Belcher, 1994, 1995; Belcher & Braine, 1995; Braine, 1995; Canseco & Byrd, 1989; Casanave, 1995, 2002; Chirkov, 2007; Gilliver-Brown & Johnson, 2009; Harklau, 1994;

Ivanic, 1998; Leki, 1995, 2003; Leki & Carson, 1997; Levis & Levis, 2009; Melles, 2009; Prior, 1991, 1995, 1998; Riazi, 1997; Spack, 1997, 2004; Stacy & Granville, 2009; Zhu, 2001). The results of these studies have increased our understanding of the types of needs, strengths, and weaknesses students bring with them to the U.S., and the challenges involved in producing academic writing in a second language. Together, these studies demonstrate that L2 academic literacy and writing are bound by context. We need to understand literacy and, in this case, writing, as a broad notion and integrate its multiple dimensions into understanding learners' experiences from a sociocultural lens, which takes into account their social and educational experiences at home and abroad.

3.9.2 L2 Academic Writing and Intensive English Program Writing Preparation

Researchers interested in L2 writing have examined the various kinds of discourse features and writing tasks from different disciplinary fields (e.g., Braine, 1989, 1995; Bridgeman & Carlson, 1984; Casanave & Hubbard, 1992; Johns, 1997; Samraj, 2002, 2004). These studies show that whereas different genre systems (Swales, 1990) may be identified as characteristic of particular COPs, some terms such as "five-paragraph essay" may not necessarily mean the same thing in all contexts (Samraj, 2004). Ultimately, "there is no such a thing as the one-size-fits-all academic essay that can be written in all areas of study" (Paltridge, 2004, p. 90).

Leki (2003) conducted an investigation of Yang's learning to write process. Yang, a Chinese nursing student in the United States, shows that while her skill at writing traditional research papers was acceptable for most of her instructors, it was the Nursing Care Plans that posed the biggest challenge for her because it also demanded cultural and sociolinguistic knowledge. Among other things, by illustrating how Yang struggled to complete the Nursing

Care Plans, Leki's study reveals a disconnect between the types of writing preparation students receive in ESL courses, which typically focus on traditional composition practices like the five-paragraph essay, and some of the genres of writing students are expected to complete during the duration of their degree programs. The study also shows that many of the writing tasks students are expected to complete in over the course of their school-based career training do not necessarily match the kinds of writing demands they are expected to fulfill once they are working.

Researchers have also revealed that tasks are always subject to multiple interpretations. In exploring an English for Academic Purposes needs analysis for academic writing tasks, Prior (1995) concluded that the task the professor assigned was not the same as the task the students understood. His study also revealed that students drew on many sources other than the professor's instructions to complete the task: students made inferences based on their prior school experience, the models offered in the assigned readings, and their perceptions of the professor's personality and intellectual biases.

3.9.3 Sociocultural Factors and Academic Literacy

Several scholars have examined academic literacy and found that sociocultural factors have a strong impact on L2 writing proficiency. Riazi (1997) examined more advanced writing skills by researching students' social practices. He built on the idea that many factors influence students' attitudes towards their own advanced academic English literacy both personally and professionally. Riazi (1997) examined how international graduate students attain domain-specific literacy and found that it is an "interactive social-cognitive process" in that production of the texts required extensive interaction between the individual's cognitive processes and the social and contextual factors of their departments and home lives (p. 105).

Melles's (2009) surveyed three semester cohorts of international graduate students in engineering in an EAP program. This study showed that EAP content-themed courses are the forum through which academic literacy and specifically critical appraisal of texts and their rhetorical features should be taught. Melles (2009) also found that the interaction between student and text was influenced by students' sociolinguistic awareness of American academic writing requirements.

Smith (2007) examined the cultural side of academic literacy. His research showed that international graduate students' drive to pursue a graduate program is linked to their desire to produce professional academic work. He found that as students produce writing with the assistance of others, they also negotiate their identities (Smith, 2007). According to Smith (2007), their motivation to write decreased when they felt marginalized by domestic students. Similarly, Chirkov (2007) performed a cross-sectional analysis of Chinese international students in Belgium and Canada to examine how cultural and social factors influence international students' adaptation to academic study. (S)he noted that there is

> a lack of association between self-development goals and adjustment outcomes . . . that the content of . . . motivation the level of autonomy [of the student] are two independent factors that affect the varying levels of [student] self-determination for leaving the country to pursue study in the first place (p. 217).

In other words, social and cultural factors can be predictors of international students' motivation and success at U.S. universities.

3.9.4 Graduate Coursework and Academic Literacy

Many researchers have examined the impact of graduate coursework on academic literacy and specifically L2 writing in English (Canseco & Byrd, 1989; Levis & Levis, 2009; Gilliver-Brown & Johnson 2009; Stacey & Granville, 2009). Canseco and Byrd's (1989) examined the writing requirements of graduate courses in Business Administration with the

intent of informing how ESL courses should be taught to prepare students for their graduate study. Research findings showed that graduate students would "benefit from instruction that focuses on interpreting and responding to topics provided by instructors" as well as explicit explanations of requirements on course syllabi (Canseco & Byrd, 1989, p.314).

Levis & Levis (2009) taught a course aimed at teaching research writing to international graduate students who were to join a science or engineering departments at two tier-one research universities in the U.S, which added to the body of research concerning discipline-specific graduate writing. Levis & Levis (2009) found that students strengthened their writing skills and better understood research writing to help prepare them to write a thesis or dissertation when their instruction was made discipline specific and conducted face-to-face.

Gilliver-Brown and Johnson's (2009) examined the impact of a blended learning approach, where writing courses were taught online and in person. They found that it was an effective method of helping international graduate students attain academic literacy. The online space bolstered student motivation to learn and the physical support in-person alleviated the isolation of a purely online course. In this way, the courses helped transition students to use multiliteracies within the blended environment. Multiliteracies can be defined as "the multiplicity of communications channels and media" and the "increasing salience of cultural and linguistic diversity (Cope & Kalantsis, 2000, p. 5).

Stacey & Granville (2009) found that weekly reaction papers and mentoring from major professors improved student engagement and motivation to write. They discovered that cognitive and social processes of attaining advanced academic literacy increased when students interacted more meaningfully with text in a low-risk context established by their

advisor or major professor (Stacey & Granville, 2009). Stacey and Granville (2009) pointed out that full engagement in academic study requires much more than English language proficiency. They also showed that once English language proficiency is attained and students do arrive in the United States, their main point of contact is often their advisor.

3.9.5 Academic Editors and Academic Literacy

To facilitate the process of socializing students into academic literacy practices, it would appear that faculty-student interactions are critical. Numerous scholars have investigated the role of faculty-student interactions in graduate school and specifically in the areas of researching, writing and dissertation preparation (Belcher, 1994; Belcher & Hirvela, 2005; Prior, 1994, 1998 Belcher (1994) found that international graduate students who had a deeper understanding of the sociocultural research community could negotiate the difficulties of even the most demanding coursework and research (Belcher 1994). From a Vygotskian perspective, this means that mediation enabled these students to develop negotiation strategies as signs and utilize them effectively (Vygotsky, 1978). They put to use coping strategies they had internalized from the community to deal with challenges. Less successful students had differing ideas of written research goals and research reader expectations than their advisors did in writing their dissertations. Belcher (1994) suggested that advisors can help students make better research decisions by helping them become more involved in the research community. Belcher (1994) also found that the advisor or major professor is the key to the success of an international graduate student's research.

Afful (2009) also examined the role of academic editors in international graduate students' acquisition of advanced academic literacy. Afful (2009) interviewed academic editors and found that students should take advantage of peer review and be aware that they

are being asked to write polished, cohesive work that can be communicated through a variety of mediums His research also revealed that editors should be careful about overtly demonstrating that the English rhetorical system is more important than students' own rhetorical systems and ways of coming to understand English writing. That is, the role of an academic editor or advisor may be impactful on students' academic literacy specifically with regard to writing as well as L1 literacy practices.

3.10 Education and Literacy Practices in the Arab World

In order to understand how Arabs in particular might come to understand writing, we can look to Islam and the Qur'an which influence L1 writing acquisition (Sa'adeddin, 1989). Prokop (2003), an expert in Arab education and specifically that of Saudi Arabia, noted that current economic circumstances and the need for academic performance and technical skills have led to an increase in the Arab student population at U.S. universities. The Saudi Arabian Cultural Mission (SACM) financially sponsors both undergraduate and graduate students to be educated abroad in English-speaking countries. SACM does this for the purpose of affording Saudi students the opportunity to gain not only English language proficiency, but also an undergraduate or graduate degree from an English-speaking university (Prokop, 2003). A degree from an American institution of higher education sets a Saudi Arabian job-seeker apart from other candidates with degrees from Australia, Canada and even Great Britain (Prokop, 2003). In Saudi Arabia, a degree from America is perceived as more prestigious than some other English-speaking countries (Prokop, 2003). However, gaining English language proficiency and a degree from the U.S. can prove difficult for some. Writing in English is especially difficult for all international students because they are expected to produce native-like written products (Casanave, 2003).

Since Kaplan's seminal study in 1966, the field of contrastive rhetoric has developed and investigated the influence of L1 on L2 writing. According to Kaplan, "Rhetoric . . . is not universal . . . but varies from culture to culture. . ." (p. 2). Kaplan argued that the thought patterns which speakers of English appear to expect is a "sequence that is dominantly linear in its development" (p. 4). However, he found that the Arab students in his study used a paragraph development based on a complex series of parallel constructions, both positive and negative. The organization of the text of Arabic is "circular and non-cumulative," and "Arab writers come to the same point two or three times from different angles so that a native English reader has the curious feeling that nothing is happening" (Sa'adeddin, 1989, p. 36). In contrast, the text in English is expected to be linear, coherent and concise (Sa'adeddin, 1989). Further adding to the challenge of teaching and learning English to Arabic speakers, Derrick and Gmuca (1985) argue that there is no room for doubt in Arab students' writing regardless of the genre or whether it is written in Arabic or English. In other words, Arab students may be challenges to write with uncertainty since they learn to write arguments using the Qur'an, whose authority may not be questioned (Derrick & Gmuca, 1985).

Several studies (Abbad, 1988; Hisham, 2008; Rabab'ah, 2003; Zugoul & Taminian, 1984) have been conducted in the Arab world to better understand the challenges of acquiring English proficiency. Partly because of the educational systems of Arabic-speaking countries, Arabic speakers may be challenged by graduate coursework. Prokop noted that there is a "heavy emphasis on rote learning; lessons are very repetitive and often use complex language not always appropriate to the age of the students" (2003, p. 80). In Arabic-speaking countries, analytical and creative thinking may not be the focus of curriculum and instruction. Interaction between the teacher and students is limited and debate may be

discouraged, whereas imitation and recitation are common practice (Prokop, 2003). As such, educational institutions draw heavily on memorization **(**De Atkine, 1999; Faour, 2012; Vassall-Fall, 2011) and the teaching approach is still teacher-centered for the most part (Al-Mohanna, 2010; Elturki, Abobaker, & Lin, 2011).

From a neurological perspective, practices in Arab education such as rote-memorization and imitation may leave a lasting impression. According to Berninger and Richards (2002), the writing system in the brain is constantly creating pathways from long-term memory to working memory based on first language educational practices. Indeed, first language education has a direct impact on second language mastery. Communication in a second language, English, for example, is very possible and plausible, but reliance on first language cultural models of teaching such as rote-memorization, imitation and teacher-centered practices impact the way Saudis learn English (Prokop, 2003).

Kandil (2002) examined English language preparation in Saudi Arabia in his study, a needs analysis of Saudi Arabian students based on how they learn English. He found that one of the reasons Arabic learners may struggle is because of the nature of high-school level English language preparation in the Arab world (Kandil, 2002). Kandil noted that, in the high-school classrooms, English language instruction focuses on verbal expression at the expense of writing (2002). Further illuminating this problem is Abba'd's (1998) study found that their problems are due to the inappropriate methods of language instruction. In addition, high school graduates are still typically accepted into Arab universities to pursue a program such as English studies in spite of lack of English proficiency (Alkhasaneweh, 2010). Further, Swan and Smith (1991) suggested that teachers as experts are highly regarded in this teacher-centered system of instruction where knowledge is imparted to students by the

teacher with very little opportunity for discussion (They also claimed that literacy traditions in the Arab world revolve around the Qur'an, the holy book of Islam, so that all Muslims can orally recite the Qur'an and "are therefore influenced by it in their ideas of how language works" (p. 142).

In fact, the primary texts read in the Arab world are based on the Qur'an (Swan & Smith, 1991). Ostler (1987) analyzed the written English of Arabic speakers and found that it reflects classical Arabic sentence structure, which is based on the Qur'an. The Qur'an is an oral text that has been written down. Since writing instruction in the Arab world is often based on the Qur'an, it may impact Arabic speakers' writing in English. Ostler (1987) discussed how Arab scholars, fearing diglossic dangers to Arabic, meaning that Arabic would lose importance as the language of the Arab world and the language of the Qur'an, created classical Arabic. Eleven centuries later, this is the Arabic that is still taught in Arab schools.

Abdulati (1975) claimed that, "the authenticity of the Qur'an for Muslims is beyond doubt" (p. 12). Muslims usually accept principles covered in the Qur'an as divine truth and reject others that differ from the Qur'anic principles and teachings. Feghali (1997) claimed that swearing oaths on the Qur'an and the Prophet Muhammad are part of the Arabic discourse. As Nydell asserted, "belief in God has direct and ultimate control of all that happens" (1987, p. 34). Abu Rass (1994) indicated that the Arabic culture is highly influenced by Islam, which is based on the main principle of unity of belief in God and the prophet Muhammad. As a result, Arab students have the tendency to use dichotomy in writing: solutions to problems are black or white, right or wrong. As such, according to Abu Rass (1994), critical questioning of the norms or the ultimate truth in Arabic culture is unusual. The writer assumes that the reader is in complete agreement because of cultural

consensus. In fact, the idea of a consensus might also be attributed to the fact that Arab culture adheres and promotes collectivism rather than individualism (Feghali, 1997).

We also know that supporting an argument in writing is done by quotations of verses from the Qur'an, the holy book, and sayings of Prophet Muhammad as well as citing of prominent leaders or Islamic scholars (Abu Rass, 1994). It is common to use "repeated words, phrases and rhythms to move others to belief, rather than the "quasilogical" style of Western logic, where interlocutors use ideas to persuade" (Feghali, 1997, p. 361). Feghali (1997) suggested that persuasion is most often employed in cultural settings "in which religion is central, settings in which truth is brought to light rather than created out of human rationality" (p. 151). Feghali (1997) found that Arabic speaking students of English tend to copy verses from the Qur'an to convince their readers to follow their line of logic. According to Swan and Smith (1991), literacy is "highly regarded" in the Arab world and the formal written language of the Qur'an is highly valued, yet the word of the Qur'an may not be challenged.

Al-Khatib (2001) used discourse analysis to analyze the writing of personal letters in English by Arab Jordanian students. His study showed that the students transferred the Qur'anic of writing in English and used language which reflects Arab cultural thought patterns, characterized by length and indirectness (Al-Khatib 2001). Al-Khatibeb concludes that the style of writing letters by these subjects is clearly affected by their sociolinguistic backgrounds without taking into consideration the audience. He explained that speakers of Arabic share the following common features of communicative style, which may conflict with other language styles: (a) repetition, (b) indirectness, (c) elaborateness, and (d) affectiveness, which means intuitive-affective style of emotional appeal (Al-Khatib, 2001).

Abu Rass (2010) pointed out, cultural transfer occurs when students learn to write in English as a second language because their behavior is influenced by their first culture and that first culture "saturates the L2 writing experience and influences its product as well" (p. 206). As a consequence of cultural transfer or more specifically as a result of leading activities, Arab students may fail to consider audience when they write in English (Abu Rass, 1994). Khuwaileh & Shoumali, (2000) concurred that Arab students "usually think and prepare their ideas in their native language and then translate them into English" (p. 174).

English writing composed by Arabic speakers is created a result of a variety of sociocultural factors and circumstances since differences in writing stem from multiple sources including L1 culture, education, disciplinary culture, genre characteristics and mismatched expectations between readers and writers (Al-Khatibeb, 2001). A Saudi student's ability to acquire English can be accounted for by the dialectical relationship between the collective Arab society and its social and cultural practices as well as the individuals themselves (Noor Hashima, 2010). Many researchers such as Abbad (1988); Wahba (1998); Rabab'ah (2005); and Huwari and Noor Hashima (2010) found that Arabs learning English face difficulties to write effectively because of their limited cultural knowledge of the English-speaking world and also because of limited experience with English rhetorical strategies.

Researchers have found that lack of sociocultural knowledge of English writing is manifested in Arabs' apprehension of writing. In fact, research done on apprehensive Arab graduate students revealed that students with a high level of writing apprehension were unable to write a well-developed paper or proposal in English (Onwuegbuzie & Collins, 2001). Likewise, Erkan and Saban (2011) found that Arab students' English writing

performance is related to their writing apprehension, their self-efficacy in writing, and their attitudes towards writing.

Salem (2007) investigated fifty male undergraduate students majoring in English at the University of Al-Azhar in Egypt to find out their attitudes towards writing in English. Salem (2007) found that students were overwhelmed when they were required to write on certain topics because they did not know how to begin their writing nor did they understand how to develop their ideas adequately and conclude appropriately. He partly attributed this to a lack of English writing instruction as well as a lack of sociocultural knowledge of English writing since students lacked the technical skills of writing in the English rhetorical style (Salem, 2007).

3.11 English Writing Skills for Culturally Sensitive Globe-Trotting Engineers

Not only is writing well in English a critical component of success in graduate study in the U.S., but it may also be important to students' success once they graduate and obtain employment in the field of engineering which is also becoming increasingly global (Riemer, 2002). Beer and McMurrey (1997) report that engineers in the United States write four major types of reports: short reports for maintenance, long reports involving introspection, job descriptions for external company contractors and work permits or orders. According to Riemer (2002), engineering graduates are required to have a variety of skills including English writing proficiency to obtain and keep employment, a fact "widely recognized by academia and industry alike," in the United State and abroad (p. 91). Yet some graduates with degrees in engineering may not be prepared to write well in English.

An indication of this problem comes from Abu-Rizaizah (2005) who conducted a needs-analysis of engineers in the Saudi Electric Company by analyzing engineers' writing.

He found that Saudi Arabian engineers whose first language was Arabic needed to develop their written English because technical written English was frequently used as the medium of communication (Abu-Rizaizah, 2005). He noted that all of the written work was in English and that the documents had poor organization, poor sentence structure and poor grammar (Abu-Rizaizah, 2005). In addition, there is evidence that both American engineers and those abroad may lack the skills necessary to be successful because a global engineer must be one who can easily and sensitively cross cultural boundaries with both their spoken and written English (Riemer, 2002). In order to cross these boundaries, engineers need to be prepared to use English as the medium for communication (Riemer, 2002). Central to this discussion is an understanding of writing preparation at institutions of higher education.

3.12 Writing for Engineers at the Undergraduate and Graduate Level

As Skinner and Mort (2009) pointed out, the problem with engineering writing preparation at universities is that

> Support is not provided by engineering professionals but, instead, as an extra outside the engineering curriculum, by [writing] teachers. This approach usually has limited success, as it is an additional imposition on students who are already struggling with their academic workload and is bereft of professional context. The inclusion of [writing] support within the classroom is typically resisted by faculty because it is perceived as diluting the engineering syllabus (p. 547).

Flateby and Fehr (2009) echo this disconnect, adding that if undergraduate or graduate writing coursework exists as part of degree program, it is typically taught outside of the college of engineering. In fact, Ron Smelser, an engineering professor who attended the Northwest Inland Writing Project (NIWP) summer institutes explained that, as a professor, he was surprised to find that engineering departments at institutions of higher education still rely extensively on the English department to teach writing (2001). Smelser (2001) further clarified that engineering schools typically require introductory composition classes,

followed by a course on technical writing, but that it's not enough preparation for workplace writing. He remarked that

> Engineers in training may remain blissfully unaware of this deficiency, but once out in the field, they are soon conscious of this gaping hole in their preparation. In a survey of 1995 graduates from [one] university college of engineering, 40 percent of the respondents thought that more emphasis should be given to written communication, and 60 percent thought that more emphasis should be given to oral communication and presentation skills (Smelser, 2001, p. 257).

The engineering profession as a whole is also aware of the problem. The Accreditation Board for Engineering and Technology (2013) now requires engineering programs to "demonstrate that their graduates have an ability to communicate effectively and a recognition of the need for, and an ability to engage in, life-long learning" (para. 7). Some universities have already altered their engineering curriculum to meet these needs. For example, the University of Southern California (USC) Viterbi School of Engineering has its own Engineering Writing Program that offers one undergraduate and three graduate-level writing courses specific to the engineering discipline and taught by engineering professors:

1. Writing 340: Advanced Writing Communication for Engineers
2. Engineering 501x: Technical Writing and Communication for Graduate Students in Engineering and Science
3. Engineering 502x: Writing Skills for Engineering PhD Students
4. Engineering 504x: Fellowship Proposal Writing for Engineering PhD Students (USC, 2013)

The USC Viterbi School of Engineering currently ranks number 11 in the Academic Ranking of World Universities (USC, 2013). It seems that the future of engineering includes being able to write.

3.13 Conclusion

In summary, sociocultural theory as attributed to Vygotsky (1978) offers us the opportunity to better understand Saudi Arabian students' experiences with regard to writing. Specifically, the genetic method enables us to understand writing development as part of a larger cultural heritage and as a part of unique individual experiences (Vygotsky, 1978). This development occurs through socialization, which is both legitimate and peripheral in communities of practice (Lave & Wenger, 1991). Socialization for international graduate students plays a role in the development of their academic literacy as does graduate coursework, their academic editors and their first language educational practices (Braine, 2002). Educational practices in Saudi Arabia are teacher-centered and involve rote-memorization and imitation (Prokop, 2003). They focus on oral skills at the expense of written skills, an emphasis based on how the Qur'an is used in the Arab world (Prokop, 2003). Still, the engineering industry demands excellent written English (Riemer, 2002).

CHAPTER 4

Methodology

4.1 Introduction

The purpose of this study is to understand Saudi Arabian engineering graduate students' self-perceptions of English writing and how they value writing. In this chapter we examine the approach to addressing the purpose of the study through a review of the theoretical framework and an overview of the methodology, data collection, trustworthiness and ethical considerations of the study. We begin with a discussion of the theoretical framework and the researcher's lens.

4.2 Theoretical Framework

Since all researchers carry a set of assumptions and beliefs to a study, research is inherently filtered through the researcher's ontological and epistemological belief system. Ontology is important because of what the researcher understands as reality. Epistemology is important because of what the researcher understands as knowledge. As the researcher, my ontological and epistemological assumptions are important to understanding the process and procedures of the study. My personal belief is that knowledge and reality are co-constructed and are bound by context. Therefore, I understand Saudi Arabian engineering graduate students' self-perceptions of English writing through a social constructivism framework and a sociocultural theory lens. That is, the ways in which the learning and teaching of English writing take place under differing cultural circumstances and in differing historical contexts contribute to a contextualized understanding of development (Lantolf, 2006).

Social constructivism asserts that reality and knowledge are actively created by social interactions (Crotty, 2010). Therefore, social constructivists stress the importance of culture

and context in understanding what occurs in society. A social constructivist researcher posits a subjective epistemology and the ontological belief that reality is socially constructed through human activity. From this perspective, members of a society together create and transform reality and, as a result, knowledge is to be considered a human product that is socially and culturally constructed (Crotty, 2010). Ontologically, this means that knowledge is an ever-changing and dynamic human invention. This fits with a Vygotskian point of view in which "the knowledge building process can be conceptualized as the construction of knowledge artifacts" in a sociocultural context (Stahl, 2002). More specifically,

> A constructivist perspective attends to epistemological structures and processes that the sociocultural perspective can and must place in a broader historical and cultural context. Mind is a cultural and historical product, and dualism, the division of knower and known-can become a reality in specific circumstances. The sociocultural perspective offers an account of how we get to that point (Packer & Goicoechea, 2000, p. 228).

In other words, sociocultural theory offers us the opportunity to understand the "broad historical and cultural context" of the development of Saudi engineering graduate students' self-perceptions of English writing. That is, learning to write involves becoming a member of a community and constructing knowledge at different levels as a participant, yet it also involves transformation of the individual and of the social world (Packer & Goicoechea, 2000). This transformation is underscored by the development of Saudi Arabian engineering graduate students' self-perceptions of English writing as both a product of a common cultural heritage and a product of unique individual experiences.

4.3 Qualitative Case Study

This research is a qualitative case study (Creswell, 2007). Qualitative research is an appropriate choice because I am examining self-perceptions, which are internal to a person. Baumeister (1999) explained that self-perceptions are a person's beliefs about himself or

herself, including attributes about who and what self means. Using a qualitative approach allows me to describe and understand the self-perceptions of individuals, but also consider these beliefs from within a sociocultural context because, as Creswell, (2007, p. 181-183), writes:

- Qualitative research takes place in a natural setting.
- Qualitative research uses multiple modes that are interactive and humanistic.
- Qualitative research is emergent.
- Qualitative research is fundamentally interpretive.
- The qualitative researcher views social phenomena holistically.
- The qualitative researcher systematically reflects on who he or she is and is sensitive to his or her personal biography and how it shapes the study.
- The qualitative researcher uses complex reasoning that is multi-faceted, iterative, and simultaneous.

Among the possible choices within a qualitative research framework, case study was chosen. According to Yin (2009) a descriptive case study design should be considered when: (a) the focus of the study is to answer "what" questions; (b) you cannot manipulate the behavior of those involved in the study; (c) you want to cover contextual conditions because you believe they are relevant to the study; or (d) the boundaries are not clear between the phenomenon and context. Specifically, a descriptive case study was used in order to describe the development of self-perceptions of English writing, and the real-life contexts in which it occurred (Yin, 2009).

Yin (2009) gives specific examples of case studies, which seek to understand events such as "individual life cycles, small group behavior, organization and managerial processes,

neighborhood changes, schools performance, international relations and maturation of industries" (p. 21). In order to understand these types of events, a case study uses a product of a chain of discoveries that does not assume answers (Merriam, 1998). In this case, a chain of discoveries allows us to understand the development of self-perceptions from different sociocultural contexts. In turn, a descriptive case study has enabled me to uncover the participants' understandings of their English writing from their points of view.

Given that, as Yin (2009) pointed out, case studies are also bound either explicitly or implicitly, a deciding factor in choosing case study was the fact that this study is bounded by its participants who were Saudi Arabian engineering graduate students. Further, Yin wrote that case studies are contextualized (2009). In this study, we can contextualize these students' understanding of English writing from several contexts including social, cultural and educational contexts in Saudi Arabia as well as the contexts of graduate engineering coursework, the IEP and the writing center at the participating university. This contextualization is an important feature of case study because it is critical to understand the situation in which the case is embedded (Yin, 2009).

Among the strongest supporters in favor of qualitative case studies of academic literacy are Braine (2002), Casanave (2002; 2004), and Paltridge (2004). These researchers have expressed their preference for this type of methodology in order to investigate academic literacy transformations (Casanave, 2002, 2004). The use of case study research in this study is modeled on successful investigations of this kind carried out by other researchers. Examples of qualitative case studies of academic literacy issues, such as those conducted by Angelova and Riazantseva (1999), Casanave (1995, 2002), Leki (2003), and Spack (1997), have not only set an important precedent for future investigations, but have also

demonstrated the legitimacy of rich descriptive qualitative case study which, through detailed narrative accounts, provides us with a deeper and broader understanding of academic literacy experiences.

4.4 Research Questions

The overarching question for the study is:

How do Saudi Arabian engineering graduate students' self-perceptions of their English writing impact their value of learning to write in the academy and reflect their expectations for writing in the engineering industry?

To answer this, the overarching question was deconstructed into sub-questions:

1. What self-perceptions of English writing do Saudi engineering graduate students report?
2. What has fostered the development of these self- perceptions of English writing?
    a. What role has prior education played in mediating English writing?
    b. What role have social and cultural relationships played in mediating English writing?
3. How do Saudi engineering graduate students' self-perceptions of their English writing match-up with the engineering industry's writing standards?

In order to respond these research questions, data was collected from a variety of sources.

4.5 Data Collection

As Merriam (1998) emphasized, it is important to ensure both depth and breadth of data collection, in order for case study research to be successful. Yin (2009) specifies three

main principles of data collection: "a) using multiple, not just single, sources of evidence; b) creating a case study database; and c) maintaining a chain of evidence" (p. 101).

I used three forms of data collection: interviews/focus groups, observations/field notes, and written documents. These different sources of data contributed to the process of triangulation, which has as its main goal the investigation of "the research problem from different perspectives in order to provide possibly more complex and ideally more valid insights" (Duff, 2008, p. 144). In addition, triangulation can allow for subtle nuances of interpretation and insight that multiple perspectives can provide (Yin, 2009, pp. 115-118). Approaching the data collection from this perspective also helped ensure that the information gathered to identify educational, social and cultural practices was done with limited prior assumptions on my part as well as to give voice to my research participants.

For the purposes of this study, interviews were a critical component of data collection. Denzin and Lincoln (1998) note that an interview is not a neutral tool but instead "produces situated understandings grounded in specific interactional episodes" (p. 36). The interviews for this study were to allow for data generation (Mason, 1996). Talmy (2010) refers to the traditional idea of interviews as a research instrument and contrasts it with research interview as a social practice. Interviews as a social practice, according to Talmy (2010) were used. This included one-on-one interviews of student participants, engineering employers, and a writing center staff member as well as focus groups of IEP faculty and engineering faculty.

The focus groups were conducted with five engineering faculty members and with eleven IEP faculty members. Each focus group took place in a private room on-campus and was digitally recorded. This was to understand the development of students' L2 writing

proficiency in English in both the context of their engineering courses and in the context of the IEP. As Creswell (2007) pointed out, focus groups are an ideal way to collect data when the interaction among interviewees is likely to bring out the best information and when interviewees are "similar and cooperative with each other" (p. 133).

The observation data was gathered from visits to the IEP level 6 Reading Composition course and the level 6 Academic Skills course during April and May of 2013, for a total of thirty class periods. Creswell (2007) wrote that observation offers possibilities for the researcher to become more of an insider in participants' experiences. For this reason, I also observed part of a graduate engineering course on structural foundations from April-May, which met on Tuesdays and Thursdays. I visited and observed this engineering course eleven times.

In order to gain a sense of the literacy practices specific to writing at the participating university, the following documents were also collected:

- IEP course syllabi, writing assignments, rubrics, prompts and instructional materials
- Engineering course syllabi, writing assignments, rubrics, prompts and instructional materials

4.6 Tool Design

I followed Creswell's (2007) guidelines for data collection and I began with a pilot study in the spring of 2012 to refine the data collection instruments. I tested the instruments as a survey and three interview questions for student participants only. This enabled me to test the instrument before collecting my data from student participants.

The results of the pilot study suggested to me that if I wished to have better understandings of Saudi Arabian engineering graduate students' self-perceptions of their

English writing and what promoted the development of these self-perceptions, then I also needed to create data collection instruments for IEP faculty, engineering faculty, engineering companies and the writing center. Given the nature of the investigation into self-perceptions of English writing, the student participants' survey questions from the pilot study conducted in the spring of 2012 were changed into an interview format and more questions regarding social, cultural and educational experiences in different contexts were added.

I also considered who else and what else might assist me in my investigation and as result I designed data collection instruments not only for Saudi engineering graduate students, but also engineering faculty, IEP faculty, one writing center faculty, and one employer of engineering graduates from the participating university. The questions were designed in line with a more holistic approach, with the goal of incorporating a more complete picture of students' literacy experiences based on the understanding that literacy experiences in different contexts will impact the way students learn to write in their L2, English, and in the field of engineering later once they graduate.

The questions for the interviews and focus groups for all participants move from more general to more specific. Partly for this reason, the interview questions for the student participants begins with demographic information, including the students' age range and English entrance exam scores to find out how they entered the university: via an English placement exam or through conditional admittance in the IEP. My goal here was to organize the student participant data so that I could compare experiences of those who had attended the IEP and those who had not to see if their differing experiences might have an impact on their writing in the engineering classroom and, if so, why. In addition, questions were written so that they were open-ended which enabled participants to give voice to their experiences

independent of researcher bias. The questions for student participants focused on social relationships, and covered family influence, as well as the potential influence of teachers, advisors, friends, colleagues, professional organizations and others. Questions about previous educational experiences were written to encompass a variety of experiences pertaining learning to write in an L1 as well as experiences students may have had in an Intensive English Program. In order to obtain a more complete picture of students' experiences, I also crafted questions to find out about the writing they were doing in their engineering coursework and in the IEP if they had attended it. Specifically, I wrote eight questions to find out what students understood about writing in the field of engineering for a total of seventy-eight questions. The full protocol can be found in the appendix.

For the focus groups I constructed questions that would work for a loose discussion format (Cresswell, 2007). As such, fourteen questions for IEP faculty and engineering faculty focus groups were designed to enable participants to share collective experiences working with Saudi engineering graduate students. Again, the focus group questions began from a general standpoint and then became narrower. I was curious to find out how writing is taught in the IEP and in engineering courses and focus group questions reflect this. I asked about the types of feedback faculty were giving students with regard to their writing to ascertain how they approached the teaching and learning of writing in the Intensive English Program or the engineering classroom, respectively. I also wanted to find out how much faculty knew about the rhetorical systems of their international students. Additionally, since I wanted to find out what support is available at the participating university for graduate writing, I scripted questions to find out how the writing center assisted international students in the writing process. I chose to do this because of comments made by IEP and engineering

faculty during the course of focus groups.

Finding out about the types of writing that is expected in the engineering industry was also important; I wanted to know if companies provide any additional English language support for non-native speakers of English and specifically if engineering companies recognized a need for improved writing skills. Thus, I wrote questions I thought would provide me with a picture of writing in the engineering industry.

4.7 Research Participants

In a case study, it is very important that the researcher explain clearly his or her involvement in the research process, including his or her connection with the participants, access to the research site, biases, values and personal interests regarding the research topic (Creswell, 2007). I am a white, female educator who went through the public education system in the United States and I have attended two public universities where I spent most of my time mastering writing and then how to teach writing to international students at three different IEPs in the United States. I do know the participants to varying degrees, but I believe my neutrality as a researcher is not compromised and this does not affect the way I interpret the data.

At the participating university, research participants included:

- Five Arabic speaking graduate students in the college of engineering
- Five engineering faculty members
- Eleven IEP faculty members
- Ten international companies that employ engineering graduates
- A Writing Center staff member

The data collection process began with student participants. Student participants were sent e-mail invitations to meet with me in an engineering building on-campus. All five students contacted agreed to participate. All five were students I had previously surveyed and interviewed while conducting the pilot study for this same topic in the spring of 2012. Three student participants had attended the IEP before entering the university's college of engineering as graduate students. The other two student participants entered the college of engineering directly by passing an English placement exam such as the TOEFL. Each student participant was interviewed twice. The first interviews took place during the first week of April 2013 and the second interviews during the last week of April 2013. The interviews were split so that participants would not be overwhelmed or pressed for time. Two sets of interviews also enabled me to consider follow-up questions based on the first round of interviews. Each interview was approximately an hour and a half to two hours.

IEP faculty members who met the specified criteria were invited via e-mail to meet with me in a private conference room at the university. Engineering faculty members were recruited from a list I was given from the college of engineering dean's office. The list included faculty from each engineering department who regularly worked with international graduate students. As with the IEP faculty, I invited the engineering faculty by e-mail to meet in a private conference room on-campus. The list included fourteen engineering faculty and, from the fourteen, five agreed to participate in the focus groups. Finally, based on comments made by IEP and engineering faculty, I modified the IRB application in order to interview a writing center staff member. I e-mailed the writing center participant and the interview took place in an office in the writing center.

I telephoned and later e-mailed ten international companies that employ engineering graduates from the participating university trying to find out what type of writing engineers do in the workplace. Of the ten contacted, only one company consented to be interviewed. In order to obtain the data I needed, I also collected 5-7 job descriptions from each company's website to find out what writing requirements were made explicit.

4.7.1 Student Participants

The five students chosen were bound by the following characteristics:

- Arabic speakers from Saudi Arabia
- Male
- Degree-seeking graduate students in engineering

Note: Only males were chosen. It is beyond the scope of this research to investigate and address gender differences especially as there are very few international female engineering graduate students. A rich profile of each participant is included in the findings later.

4.7.2 Engineering Faculty Participants

Five engineering faculty members were selected according to two characteristics:

- Have taught an Arabic speaker in an engineering course that involves writing
- Teach a 3-credit hour course that involves writing

4.7.3 IEP Faculty Participants

The eleven IEP faculty members were selected based on the following characteristics:

- Have taught in the IEP graduate level 6 Academic Writing and/or Reading Composition course
- Have taught at the IEP for two to twelve years
- Have previously taught Saudi Arabian engineering students

Note: I did not interview people who have taught less than two years because those with less experience may not have had sufficient experience to describe their experiences teaching writing to Arab engineering graduate students.

4.7.4 International Engineering Companies

Ten international engineering companies were contacted to find out what types of writing engineers use on-the-job. The names of these companies came from the career center and the office of international programs at the university who together track what companies employ graduates. The companies included the following: Boeing, Schweitzer Engineering Laboratories, Saudi Arabian Development Company, EMC Corporation, CB & I, Sound Transit, Hewlett Packard, AES Pacific, URS Corporation, Saudi Arabian Engineering Company.

4.7.5 Writing Center

The writing center at the participating university provides writing assistance for all students and, as such, one writing center staff member participated in the study.

4.8 Data Analysis

As a qualitative case study, data analysis was on- going, recursive, inductive and data driven (Yin, 2009). In addition, as Yin (2009) noted, one important practice in case study data analysis is to return to the research objectives. This practice leads to a focused analysis when the temptation is to analyze data that are outside the scope of the research questions. Simply put, data analysis was driven by the research questions. In order to understand the overall case, the sources were integrated using Computer Aided Qualitative Data Analysis Software (CAQDAS), which allowed for “bins” into which data was collected and organized (Yin, 2009).

After I had transcribed the interviews and focus groups, I started the coding process in the CAQDAS I had chosen. Following Saldana (2009), the data was initially analyzed through a process of "open coding" in which I looked for anything that would enable me to answer the research questions. I chose the CAQDAS Dedoose to code data for themes since it was web-based and allowed for open coding, first and second-cycle coding and text searches. I was able to input HTML files, PDFs, and Microsoft Word documents into Dedoose and then code the data or search for keywords in textual searches across one participant, all participants or a set of participants. I did first cycle and then second cycle coding to come up with a total of thirty-six codes from sets of consistently occurring keywords. These codes allowed me to identify emerging themes patterns and themes. Then, I exported the codes for each participant, in turn helping profile each student and this enabled me to see patterns among participants. For the purposes of this study, I chose to follow Yin's (2009) suggestions for case-study data analysis:

1. Rely on theoretical propositions
2. Think about rival explanations
3. Develop a case description

As such, the data analysis followed the following steps:

1. Generate a descriptive narrative of each student case
2. Find patterns in each case
3. Find patterns within cases
4. Generate descriptive data from focus groups, interviews, documents and websites
5. Find patterns related to cases from generated descriptive data

6. Understand connections between data as related to research questions.

Since data analysis is ultimately driven by research objectives, the unit of analysis is self-perception of writing which encompasses the overarching research question for the study as well as the sub-questions, which build to answer it.

4.9 Trustworthiness

During any study, pertinent steps need to be taken so that the reader can judge the trustworthiness of the study. As Merriam (1998) noted, in qualitative research, what matters is not if another researcher could obtain the same results, but instead, given the data collected, the results are dependable and consistent. Guba (1981) pointed out that there are four components trustworthiness in the type of inquiry employed in this study: credibility, transferability, dependability and confirmability.

Considering what Guba (1981) wrote, the following steps were taken to increase trustworthiness in the current study. Issues of credibility were handled by triangulating data. To enhance transferability, rich descriptions were provided so that other contexts can be compared to the context of this study. In terms of dependability, I kept a journal to mark the decision-making trail, so that the research process and development of interpretations can be retraced. Finally, confirmability was sought through triangulation and the practice of reflexivity. Practicing reflexivity involves acknowledging and recording researcher biases, values, beliefs, preconceptions and misconceptions as in a qualitative study "the personal-self becomes inseparable from the researcher-self" (Creswell, 2007, p. 182).

4.10 Ethical Considerations

Research involving human participants requires careful thought and consideration of ethical issues. In this case, for ethical reasons, member checks were not used. That is, in a

qualitative case study such as this one, a member check could have adversely transformed the data through the process of analysis and writing (Creswell, 2010). In consideration of the data reported and each case, each student participant chose a pseudonym that is used throughout this report to preserve confidentiality. Finally, this research follows the rules for protection of human subjects as dictated by the institutional review board of the participating university. The appendices contain the approved informed consent forms for all participants.

CHAPTER 5

Findings

5.1 Introduction

This investigation took place at a small, land-grant university in a quiet rural setting in the western United States. This university was chosen because it was typical in its international student numbers, demographics and support systems across its peer institutions and because it was a convenient location for the researcher (NAFSA, 2006). Beyond the physical sites of the IEP, the graduate engineering department and locations where interviews and focus groups were held, the context for the study included the larger discipline of engineering and each individual participant's sociocultural history. Thus, it is through this larger context that I began to unravel how Saudi engineering graduate students' self-perceptions about their writing may have developed. Six themes arose based on the major findings that emerged from the different contexts:

1. Living in two cultures
2. A critique of learning in Saudi Arabia
3. Students' self-perceptions of writing
4. English writing is important
5. Help me with my writing
6. The responsibility of teaching writing

Specifically, the themes above came from findings that were put together into the larger topics or themes. Together, the findings under each theme provide an integrated explanation of each theme.

5.2 Coming to Understand Writing: the Intensive English Program

In order to understand how writing is taught and how faculty worked with Saudi students specifically with regard to writing, I conducted focus groups with Intensive English Program (IEP) faculty, observed graduate level 6 courses, and reviewed syllabi. Recall that the IEP at the participating university is not typical of a small, land grant institution because it was a content-based, graduate-level curriculum and included cultural activities.

A summary of the following six major findings is presented below:

1. Saudi students typically acculturated well and make American friends
2. Saudi students usually need assistance with writing
3. Saudi graduate students faced unique challenges with acculturation and with writing
4. The IEP graduate level 6 curriculum was writing intensive
5. IEP writing instruction was specific to students' fields of study

What follows are excerpts of the data that support the findings beginning with Saudi students' ability to acculturate.

5.2.1 Saudi Arabian Students Typically Acculturate Well and Make American Friends

Generally, the IEP faculty anticipated that their Saudi students would adjust well to the U.S. university environment. Still, they expected to provide a great deal of support including explicit writing instruction in order to prepare students for successful undergraduate or graduate study. They also commented that Saudi Arabian students have a relatively easy time making friends and socializing. They remarked that

> *"I have never not seen one [student from Saudi Arabia] not super happy to be at the university and pursing a degree." (IEP faculty focus group 2)*

> *"Another thing I noticed is it seems like the Saudis are more willing to be a part of the community and seek out friendship with the American people than other groups, specifically Chinese people. They seem to just want to know about American culture, and a lot of my students will have American friends helping them or [even as far as] going over to having an American neighbor watch their baby." (IEP faculty focus group 2)*

> *"Arabic speakers. Even the women say hi, they love that they are at the university. They seem to adjust really well and we try to help with that." (IEP faculty focus group 2)*

> *"Saudis do have a lot of American friends. I do see that and I do encourage it." (IEP faculty focus group 1)*

One IEP faculty member seemed to have the perception that Saudis do want to be a part of an American community and, as such, discussed in-depth how the IEP tried to foster this type of social and cultural development.

> *"We try to have activities. They go to Seattle, to Spokane shopping, ice skating, garnet digging. Then, we bring together women and children once a month for a potluck to talk about women's issues or just to interact with women from different cultures including Americans. This is highly attended and popular. It happens at that community center at married student housing." (IEP faculty focus group 2)*

In summary, IEP faculty seems to believe Saudi students typically acculturate well to American life and they try to assist with that acculturation.

5.2.2 Saudi Arabian Students Usually Need Assistance with Writing

Still, faculty understood that Saudi students are challenged by English writing despite their ability to acculturate well to the United States. One IEP faculty member noted, with respect to Saudi students specifically

> *"We expect that they will need help and lots of direct instruction with writing. This means lots of feedback and one-on-one conferences. I know when Saudi students come in that they are usually better speakers and listeners. I mean really, they don't write well and we try to help them with that." (IEP faculty focus group 2)*

> *"Writing is not easy for [Saudis]. That's something I think we can all agree on, so we do spend more time on writing with the Saudis than the Chinese or Koreans, for example. The Saudis just need the extra writing instruction." (IEP faculty focus group 1)*

That is, faculty expected Saudis to need more help with writing than some other international students. Another faculty member remarked that

> *"I spend a lot of time doing one-on-one writing conferences with the Saudis. They benefit from that writing tutoring a lot. Saudis all need twice as much time to do well and they don't understand the different writing genres like some of the other students do" (IEP faculty focus group 1)*

In summary, it seems that IEP faculty anticipated that Saudi students need quite a bit of assistance with writing.

5.2.3 Saudi Arabian Graduate Students Face Unique Challenges with Acculturation and with Writing

Faculty anticipated that Saudi graduate students are challenged by family, financial sponsorship for study and time limitations and English proficiency. Specifically, IEP faculty commented that

> *"I think a lot of them are feeling multiple pressures. I think they are feeling the pressure because many of them have family here. They need to provide for their family. I think there is pressure from their government if they don't complete their IEP studies and enter the university at a certain time or their funding will be cut off." (IEP faculty focus group 1)*

> *"Many of them are from places where their first experience with graduate study was less rigorous. Maybe they didn't write as much or just have to navigate a foreign environment with a family in tow." (IEP faculty focus group 1)*

> *Many of the graduate students are older and though they have a wealth of knowledge in their first language of study, it's very challenging for them sometimes to learn just the ins and outs of grammar. So then they have this wealth of knowledge, sometimes their base level grammar concerns them." (IEP faculty focus group 1)*

Overall, IEP faculty understand that graduate students face unique challenges with regard to family, academic expectations and the social and cultural norms of their first language study. To combat these challenges especially with respect to writing, IEP faculty had structured curriculum to emphasize writing learning outcomes.

5.2.4 IEP Graduate Level 6 Curriculum is Writing Intensive

The IEP curriculum appeared to focus heavily on writing preparation. In fact, recent [2008-2012] IEP syllabi for the level 6 graduate preparatory curriculum demonstrated this focus on writing. As such, all of the IEP level 6 syllabi collected included explicit references to learning outcomes for writing as major components of the courses. Below is the course description for the IEP level 6 Reading and Composition course.

> This is an advanced and graduate-level content-based English course. You will prepare to read extensively in English and will focus on critical thinking skills by reading authentic academic materials related to the course theme and your field of study. You will write academic papers of the kind often found in graduate courses and practice using academic language and revising your own work (IEP Manual, 2012).

More specifically, the IEP level 6 Reading Composition course requires students to do a "Summary/Evaluation."

> Summary/Evaluation
>
> Overview:
>
> Your assignment is to weave together and show the connections between three articles (one can be a book chapter), either from your field of study or related to the health care system topic. Your purpose is to show the connections between the major

> ideas of these readings. Your thesis should then encapsulate or bring together the main ideas of the readings based on your own evaluation of them. That is, you should develop your own thesis, but use the main ideas of the three different texts to support it (IEP Manual, 2012).

In addition, students in the IEP level 6 are required to take a research-writing course which has the following objectives and outcomes:

- Familiarize students with the academic research process
- Develop student's ability to conduct library research in their field of study
- Provide continued opportunities for students to paraphrase, summarize and synthesize
- Help students become familiar with the style format(s) mostly commonly used in student's field of study
- Help students to further recognize the grammatical, stylistic and organizational characteristics of academic writing and refine the use of these in their own writing.
- Outcomes:
- Follow the conventions of the style format(s) mostly commonly used in student's field of study
- Edit their own papers
- Understand the academic research process and common structure of an academic research paper
- Understand the importance of a literature review and how to write one
- Become familiar with the style format(s) and other writing conventions of their own field of study
- Expand academic vocabulary, especially in their field of study
- Gain experience reading scholarly articles in their field proposal

- Demonstrate critical thinking skills (general vs. specific, fact vs. opinion, summary, interpretation, judgments, inferences,)in auditory analysis and oral production by expressing and supporting abstract, theoretical, or philosophical ideas in students' academic or technical field and/or the content theme

- Understand and practice cultural conventions related to student/instructor meetings, working on group projects, and other interactions common for graduate students and teaching assistants (IEP Manual, 2012).

In other words, the IEP's graduate-level 6 curriculum focuses on the specific steps necessary to write proficiently in English in appropriate academic genres and helps students through the academic research writing process.

5.2.5 IEP Writing Instruction is Specific to Students' Fields of Study

In addition to being writing intensive, the IEP level 6 curriculum incorporated students' fields of study in both the objectives and learning outcomes in the IEP level 6. The IEP syllabi also showed that instruction in four of the five syllabi for level 6 courses is tailored towards students' fields of study. This could be seen in example learning outcomes from IEP level 6 syllabi which are below:

- Conduct and write an 8-10 page literature review* in student's intended field of study (or the content area for undergraduate students)

- As part of the literature review, read 6-8 scholarly articles in their field and summarize them

- Write a research proposal (IEP Manual, 2012).

In general, the syllabi I reviewed revealed that the writing practice students received in the IEP was aimed at improving their academic writing conventions and specifically helping

graduate students understand writing expectations of their fields and at helping them effectively edit their own writing.

What was presented in the syllabi was confirmed by what I observed in the IEP classrooms. I observed fourteen class periods of level 6 Reading Composition and sixteen class periods of level 6 Academic Skills (50% of each course). I observed and documented that classroom instruction was tailored to students' disciplines and focused heavily on academic-level writing. I also observed that IEP faculty spent time covering citation methods, discussing and practicing revision and helping students find and deconstruct journal articles from their respective disciplines. I saw IEP faculty teaching students step-by-step how to produce a literature review and conferencing with students individually to discuss specific features of writing in each students' discipline.

Consist with syllabi and classroom observations was data collected during the IEP focus groups. Faculty members comments link specifically to the learning outcomes in the syllabi and what I observed in class including assignments in syllabi, step-by-step work and field specific preparation.

> *"They are doing literature reviews right now and writing a synthesis essay. This is really quite hard. Integrating ideas into an argument can be hard." (IEP faculty focus group 1)*

> *"In my level 6 classes, I teach the students to help them learn how to write several kinds of essays that are frequently used in a graduate level program such as an evaluation or a critique of an article. From the article they learn to write sentences to paraphrase. They also learn to write an argument to defend their position. We talk a lot about academic language and the kind of language that is used in rewriting. We look at the conventions that are used in academic writing like the format and all that stuff." (IEP faculty focus group 2)*

> *"In academic writing I have done that where I bring a sample of professional something or other. We do the same thing. I have them outline it and break it down so they understand what that article is about and why it's pertinent to what they are working on like a professional article about jazz. That's the first thing they do, they will read it and then we break it apart and say what's the purpose of it, would it be beneficial for your research." (IEP faculty focus group 1)*

In summary, the data tells us that the writing preparation taking place in the IEP was rigorous, relevant, supportive writing practice specific to students' disciplines of study and individual needs. In addition, it's clear from observations and faculty comments that the writing preparation is very student and field specific work and highly individualized in a hands-on approach.

5.3 Understanding Writing in the Discipline of Engineering

In order to understand the discipline of engineering with regard to writing, it is also important to contextualize students' experiences in graduate engineering programs at the university. As such, it is important to investigate the expectations that faculty have for engineering graduate students. I used the types of data as the previous section but with regard to engineering (syllabi, observations and focus groups). That is, I collected syllabi and instructional materials from graduate engineering courses, I observed a graduate-level engineering course and I conducted focus groups with engineering faculty. Below are findings from the discipline of engineering:

1. Some engineering faculty questioned whether international graduate students understand the expectations of graduate school specifically with respect to writing.

2. Writing might be improved by practicing in isolation and/or with the help of a major professor/advisor.

3. Reading engineering articles could be a model for how to write.

4. Very few engineering syllabi mentioned writing as a course requirement.

5. Direct writing instruction in class may or may not occur regularly.

6. Some engineering faculty believed that integrating writing into coursework is challenging.

In summary, the amount of writing and writing instruction in graduate engineering questions remains unclear and teaching writing may be challenging. The bulk of writing responsibility seemed to rest with the major professor.

5.3.1 Some Engineering Faculty Questions Whether International Graduate Students Understand the Expectations of Graduate School Specifically with Respect to Writing

Faculty thought that international graduate students may not understand the expectations of graduate school.

> *"In many instances [international students] are not familiar with expectations of what a graduate student is. That it's different than being an undergraduate student. It's a lot more self-directed, uh, it's a lot more independent and sometimes the students have a hard time understanding that. It's more than just an eight-hour, just a classroom kind of job, and that being a graduate student means putting a lot of time in on your own to do research and write it up." (engineering faculty focus group 1)*

In other words, engineering faculty anticipated that international graduate students may be challenged by writing, but the expectation might be that students will adjust by practicing more writing in isolation.

5.3.2 Writing Might be Improved by Practicing in Isolation and/or with the Help of a Major Professor/Advisor

Engineering faculty added that the bulk of responsibility for writing training and assistance rests on the shoulders of the major professor.

> *"[It] is a major time-consuming process for the major professor to go through and edit a thesis or a conference paper because, you know what, not all professors are very good writers, you know. And we are not English teachers by training and so for us that, going through some equations, you can kind of get a feel if their model is right or do this or that, but to go through word by word in a thesis and make changes, that's a very, very time-consuming process. You have to have a lot of dedication."(engineering focus group 1)*

> *"It's just that when you get an idea so set in your mind, no matter what anyone else says, that's still the way you see it. At least that's the experience I've had with some students. That's the way things work and whatever I say might just affect the periphery. They need to practice writing more!" (engineering faculty focus group 1)*

Overall, the question of responsibility seemed to be on the major professor and that process is thought to be time consuming.

5.3.3 Reading Engineering Articles could be a Model for how to Write

During the engineering focus group the topic of faculty-student collaboration was brought up. For instance, a chance to write a conference paper is something faculty told me they expect to provide for students and they discussed how they prepare students: by asking them to read example articles in the discipline.

> *"I know a number of faculty members require their graduate students as part of their educational processes to write a conference paper. So they would do a subtle mention that you read other papers so you kind of get a feel for the tone, structure, expectations, and then they would need to write a paper on their own. And of course we'd help edit and work with them through that, but I'd say that's a pretty major writing responsibility that they have to go through." (engineering faculty focus group 2)*

Another engineering faculty member added that

> *"It's practice, that's what [writing] is. If you get them to read things, they'll see how other people write, then follow from that hopefully." (engineering faculty focus group 1)*

In summary, it seemed that engineering faculty understands that reading engineering articles could be a model for how to write. Indeed, these comments suggested that writing instruction may not be a priority of engineering coursework. The syllabi further suggested this may be the case.

5.3.4 Very Few Engineering Syllabi Mention Writing as a Course Requirement

In a review of twenty-six syllabi from all graduate engineering departments at the university that I was able to collect, only three syllabi mentioned writing as a class requirement. Excerpts of the writing required found in the three syllabi are as follows:

1. Engineering Logbook

An engineering logbook is a personal/professional reference about project learning and results. To protecting intellectual property in the workplace, it should be bound so that pages cannot be inserted/removed, written in ink, dated, and fill consecutive pages.

Rationale:

High performing individuals in all professions are similar to the extent that they monitor and control where they invest their time, they learn and apply the best practices their profession, and they regularly take time to learn from their successes and failures.

General Expectations:

5-6 pages of thoughtful entries per week in support of a quality design process log of personal activity, communications, and team activity (~40% of entries) research and engineering analysis (~40% of entries)

review of individual/team/product performance (~20% of entries)

organization/format for easy re-reading/re-use (self, team, mentor, instructor)

Basic Procedures:

Record the date on each page. Start each day on a new page.

Label each entry and record this in a table of contents (reserve 3-4 pages at start).

Use ink. Do not erase. Delete an entry by neatly drawing a single line through it.

Do not remove pages, and do not skip pages.

Avoid backfilling. If you realize later that you left something out, or just want to summarize something, go ahead and write it in, noting that it's after-the-fact.

Include everything you contribute to ... good, bad, and ugly.

Sketches/doodling Customer needs/requirements

Class notes	Project objectives
Meeting notes	Action Items
Half-baked Ideas	Math calculations
Work-in-progress	Design alternatives
Vendor notes	Research findings
Sources of ideas	Evaluation of data/results
Design reviews	Decision criteria
Design process	Rationale for decisions
Project reflections	Professional development

2. Perform a literature search that is beneficial to conducting your project

3. Technical Memo Writing

Use logical headings –do not make them wordy

Write as if you are writing to your client, not as if you are writing to your professor as a class report

> Brevity is good
>
> But include sufficient technical information such that if another engineer was reviewing your memo she/he would be able to complete a technical review
>
> If you choose to include equations (which would be okay), just make sure you define all terms and present the equations clearly
>
> Summarize the critical and salient conclusions from your analyses – not the mundane technical elements
>
> Conclude your memo with recommendations – be concise, do not ramble
>
> NO CONTRACTIONS!!!!!!!!! This represents sloppy writing (Engineering Syllabi, 2013).

Based on the syllabi I collected, it seems that the writing that does take place in graduate engineering coursework is possibly limited, yet I could not be sure if this is all the writing that is taking place. As one engineering faculty member attested

> *"Written reports and oral presentations are incorporated in class work and assigned projects, but I'm afraid this is not very well-documented" (engineering faculty focus group 1).*

5.3.5 Direct Writing Instruction in Class may or may not Occur Regularly

The question of how much writing was taking place in engineering courses arose for me again when during my observations of a graduate engineering course. I observed this course eleven times out of total of thirty-two class periods, which accounted for approximately one-third of the course. During my limited observation time, I saw no sign of writing instruction. In fact, during my observations, there was a heavy focus on math and computation. The teacher spent nearly every minute of every class period lecturing or going over equations related to building structures and foundations. The professor assigned homework at the end of each class period which typically included reading materials from textbooks or journals. After they read, students were supposed to use the information they

had read to solve mathematical problems that they would turn in for a grade. These reading and math-based homework assignments comprised of 75% of the grade. The other 25% of the grade in the course was based on the final exam. Based on the syllabi I collected, this is a typical grading breakdown for a graduate engineering course.

As the observations drew to a close, I was given a copy of the final exam. I found that the final exam consisted of equations, yet surprisingly it also required students to hand in a literature review which included no further instruction aside from the number of sources required and the due date. This left me unsure of whether any writing instruction had taken place in the course during the time I was not able to observe.

5.3.6 Some Engineering Faculty Believe that Integrating Writing into Coursework is Challenging

It seemed that, overall, engineering faculty found integrating writing into engineering coursework challenging and it may be that in-class writing instruction is not well-documented. As one engineering faculty member attested

> *"You know, writing across the curriculum kind of thing. We try. It's a little bit hard to jam in a lot of writing and all the technical stuff. We don't have a formal curriculum for MS and PhD so each student designs a program with his or her advisor which may include more or less writing depending on the classes they take." (engineering faculty focus group 1)*

Ultimately, it may be the case that students are being taught how to write in their engineering courses, but what they are writing was not well-documented nor was how they learn to write. During one of the engineering faculty focus groups, I was told that one way graduate students may learn to write is by taking the undergraduate technical writing course. As one engineering faculty member explained

> *"Well, students, for example, generally in my classes, foreign or non-foreign, they write technical reports and these reports are written in English. I use that in the undergraduate courses, all my undergraduate classes. I teach it in all the grad classes over here, the both of them. They include technical writing, technical reports, as well as for the graduate programs of course. The students in the graduate classes always write technical papers and use English for that, but some might need to take the undergrad writing course to be able to do it." (engineering faculty focus group 2)*

In addition, as one engineering faculty member suggested, in comparing his own experience to that of international students:

> *"But if you're an international student, it shouldn't matter. It's just practice. You may need to think in your language and then convert to English, but it's just you need to develop that instinct, and you, uh, have to change. I mean, I came here from England. I used to write long paragraphs, long sentences, so my professor quickly said, oh you got to stop doing that. That's when you go to work. They won't like it so you adjust." (engineering faculty focus group 2)*

Overall, writing instruction and in-class writing requirements in engineering were not well-documented. It seemed that faculty expected more writing practice on the part of students as they adjust to writing at the graduate-level.

5.4 Coming to Understand Writing: the Writing Center

At many institutions, that writing practice or support can come from a writing center. That is, a writing center is the first-line of support to developing writers and that includes international graduate students. It seemed that the writing center might play an important part in socializing students into the writing practices. This data came from an interview with a writing center staff member. Findings from the writing center include:

1. International graduate students face difficulties with writing and sometimes a lack of writing instruction

2. The writing center staff is typically comprised of undergraduate students who may or may not have the skills to help clients with graduate-level writing

3. A graduate writing support group was formed in 2012 and it regularly meets to discuss and review graduate-level writing. This may constitute socialization into writing at the graduate-level.

Generally speaking, staff at the participating university writing center understood that international graduate students face many challenges such as acculturating and meeting academic writing requirements. The key area of concern was writing.

5.4.1 International Graduate Students Face Difficulties with Writing and Sometimes a Lack of Writing Instruction

One of the biggest challenges might be a lack of explicit writing instruction in their home countries and a lack of expertise in graduate-level writing on the part of writing center tutors. As one staff member remarked

> *"The challenges [international students face] are significant. Many of them haven't written anything like what they are being asked to write when they come here, and I'm not positive, but my sense it, there isn't really any writing instruction for graduate students, for any graduate students." (writing center interview)*

More specifically with regard to research writing, a writing center staff member commented that students are

> *"Asked to engage in research and then document that research and write about it, and they have never been taught how to do that. So then you add to that the adjustments to a new language, to a new country, to a new culture and it is enormous." (writing center interview)*

One challenge this writing center faced is that it has a primarily undergraduate tutoring

staff, yet they still tried to meet all students' needs.

In summary, the writing center seemed to understand unique challenges of international graduate students and tried to meet the needs of all students.

5.4.2 The Writing Center Staff is Typically Comprised of Undergraduate Students who May or May Not Have the Skills to Help Clients with Graduate-Level Writing

The writing center staff may or may not always have the expertise to help every graduate student who walks through its doors. As one staff member remarked

> *I'm surprised that they do as well as they do, frankly, because other than our graduate writing consultant, I don't know what we had. They came to the undergraduate writing center. So, we would have students who maybe are working on a graduate degree in engineering or somewhere, who would bring in a document and be working with a junior English literature major." (writing center interview)*

In other words, since the writing center has an undergraduate staff that may or may not have the expertise to help international graduate students with their writing, a graduate writing consultant was hired and a graduate writing support group was created in the 2012.

5.4.3 A Graduate Writing Support Group Was Formed in 2012 and Regularly Meets to Discuss and Review Graduate-Level Writing

The graduate writing support group met bi weekly to discuss graduate-level and field-specific writing. This group seemed to be a sterling example of how writing could be learned as part of a socialization process into institutions of higher education. I thought the activities the group was partaking in would have been excellent practice for international graduate students. Example activities during group meetings included guided peer review, writing practice through writing inventories and producing long-term writing goals to be shared with the group. Below is an example of a meeting agenda from the graduate writing support group; I have bolded the keywords related to writing.

Peer Review
We read a political science article and a biological sciences article and discussed the effect of flow and word choice, among other aspects, on our reading of the material. We reviewed **guidelines for offering and receiving feedback on writing** (see attached documents).

Writing Practice
We briefly mentioned our **writing pitfalls**. We reviewed a **"writing inventory"** worksheet to help us **think of our ourselves as writers** with strengths and weaknesses (see attached documents). We committed to **writing 2500 words each week** and to submitting 1000 of them for peer-review each week.

For next week
- **Write 2500 words that have to do with your research**. They could be 2500 words of a methods section, or 2500 words of a lit review, or 2500 words about what you wish you knew about your topic, or 2500 words about what you want your colleagues to help you with, or 2500 words about why you can't write 2500 words. Write 2500 words.
- Email me what you've written OR just the 1000 words that you'd like **peer-reviewed** by Monday at 5pm. I will send out copies to everyone. Next week we will review writing.
- Bring some thoughts or questions about your **writing process or you-as-a-writer**.
- Review documents from last week, as necessary, to make sure we're on the same page about peer-review expectations and obstacles.

Overall, as can be seen in the agenda above, the writing practice taking place in the graduate writing support group appeared to be socialization into the practices of writing, yet is important to note that no one in the group was international or in the discipline of engineering. This begged the question of whether engineers practice writing in isolation or if they do not understand writing as relevant to their futures on-the-job.

5.5 Composing in English: What the Engineering Industry Demands

I found that engineers were likely to be writing on-the-job in both the United States, abroad, and specifically in Saudi Arabia. Based on forty-six job descriptions I found from the top ten companies that employ engineering graduates from this university, the

engineering industry does demand that its professional engineers be able to write well. As a consultant for Schweitzer Engineering Laboratories remarked

> *"Well, engineers do publish papers for our company in peer-reviewed journals and they present their writing at conferences. They do technical papers and manuals for products as well as proposals. It involves a lot of technical design language and sometimes they have to take the language "down" to write for people who aren't engineers. We do publish our manuals in different languages." (Schweitzer interview)*

From the excerpt above, it is clear that the engineering industry expects writing for publication and at conferences, in proposals and for manuals. In addition, as the engineering faculty at the participating university noted, I too began to recognize that some new employees may not come out of an undergraduate or graduate engineering degree program with the writing skill set necessary to be successful on-the-job. In fact, Schweitzer Engineering Laboratories told me they offer a professional technical writing three-part workshop series for its employees that is voluntary, but sometimes required if necessary.

> *"Yes, we actually have an employee development course series. There are three technical paper classes employees can take. Well, they're workshops in a series really. We also have grammar classes and these are at no cost to employees." (Schweitzer interview)*

This type of writing course was also offered at Hewlett Packard and CB & I, too. As the representative from Schweitzer explained, these writing courses are so needed that Schweitzer is now planning to offer them in locations abroad as well, which includes countries in the Arab world. As such, it appeared that writing is central to being a professional engineer in the U.S. and abroad. Below are references to English writing and communication skills required in six example job descriptions from the top ten companies that employ engineering graduates from the participating university. Half of the total job

descriptions were from the United States and half are from Saudi Arabia. The first three examples are from Saudi Arabia and the latter three are from the United States. The six below were typical of the others which also require writing. I have bolded keywords as they relate to writing.

1. A E S A R A B I A L T D., Mechanical Engineer, Riyadh, Saudi Arabia.

Excellent oral and Written Communication Skills in English. Experience in Building Mechanical Requirements ("AES Arabia LTD," 2013).

2. Saudi Arabia Engineering Company, civil engineer in Jeddah, Saudi Arabia

Civil Engineer

Competencies

Ability to build relationship with government officials (military and civil) and private sectors, as well as with executives within company, such as business units and business development groups.

Competencies: Computer literate, as well as finance skills. **Demonstrate strong written, oral, presentation and interpersonal communication skills, both in Arabic and English language**. Excellent knowledge of Saudi administration. Prior experience in the aerospace business, especially in the defense sector, an advantage. Self-motivated, energetic and creativity. ("Saudi Arabia," 2013).

3. Hewlett-Packard Company Jobs, engineering specialist III, PPS in Riyadh, Saudi Arabia

Establish a professional, working, and consultative, relationship with the client, by developing a core understanding of the unique business needs of the client within their industry.• **Contributes to proposal development, negotiations and deal closings in English and Arabic•** Work closely with and support account manager, providing technical expertise and support, and participating in client engagements up to C-level engagements for more complex solutions in smaller accounts.• May focus on growing contractual renewals for mid-size accounts with some complexity, to higher-total contract-value renewals ("Hewlett-Packard," 2013).

4. CB&I, project controls engineer in Plainfield, Illinois

A bachelor's degree in Engineering, Construction Management or Project Management from an Accredited College or University.• Minimum of 10 – 15

years experience in similar role.• Familiar with the establishment and application of project planning, scheduling and cost control tools.• Broad knowledge of applicable Project Controls software tools.• Sound planning and scheduling techniques.• Achievement oriented and self motivated.• Good analytical and organizational skills.• Display a high regard for safety & quality attributes.• **Excellent written and oral English communication skills**.• Ability to work independently as well as in a team environment.• Initiative, flexibility and a high level of professionalism when working with clients both internally and externally ("CB & I Careers, 2013).

5. Schweitzer Engineering, engineering project administrator in Pullman, Washington

Responsibilities:• Work independently to manage small projects and assist with large cross -divisional projects as assigned.• **Write and maintain project files and proposals**.• Track and report project measures such as project expenditures vs. budget, progress vs. schedule, and quality related measures.• Audit and report compliance with applicable processes.• Make supporting presentations to management on details of project progress.• Identify and report potential project problems as soon as they can be identified.• Provide support for other SEL activities as directed.• Identify, measure, and improve area processes ("Schweitzer," 2013).

6. EMC Corporation, project engineer in transportation-Chicago, Illinois

Qualifications:• Graduate degree in Engineering and related business experience• Over three years technical support experience• **Strong computer, telephone, proofreading and filing skills• Excellent written and documentation skills for meeting minutes.• Strong speaking and writing skills in Arabic and English•** Ability to learn concepts and technical details of products and services• Ability to learn new skills and assume new responsibilities• Ability to work cooperatively in a team environment.

Preferred Qualifications: • Database development experience• Knowledge of project management skills and techniques ("EMC Corporation," 2013).

In summary, of the forty-six job descriptions collected from the ten companies, forty-four specifically mentioned writing in English as a job requirement. Specifically, written English was mentioned for proposals and technical writing.

5.6 Participant Profiles

Despite the common demographic, social, cultural and educational heritage Saudi engineering graduate students share, I found that their self-perceptions of English writing are different. The participant profiles below introduce each one as an individual beyond the demographic information given in the methodology section. The content of each participant's profile is a summary of what I have learned about them. In each profile, I share information about their lives and their personal and educational experiences as they relate specifically to writing in English. Thus, each profile reflects the way I personally see each participant.

5.6.1 Abdulhady: the Role Model

Hady arrived in the United States by way of publishing several engineering articles in Arabic for the engineering company he had been working for in Saudi Arabia. After he had published the articles, his company provided him with financial sponsorship to come to the United States to obtain a graduate degree in engineering. Upon his graduation, he will return to continue working for the same company in Saudi Arabia. Hady understandings writing as being important, saying that

> *"Because when any person writes very special that would go to high level. All people would know that this person is a very good writer." (Abdulhady, interview)*

It is clear by the quote above that he felt that English writing was important. Hady appeared to be an example and role model to other Saudi Arabian students It seemed that the younger men at the university looked up to him as a role model, a home-away-from-home father figure. Hady made it his personal duty to welcome any new Saudi students to the university each semester, showing them around the campus and town. He talked frequently of how welcoming he thought the university and town were and how safe he felt there. Hady was able to spend time with both Saudi and U.S. circles of friends. He had many American

and international friends and he enjoyed going to local eateries on-campus to practice his English with his or watch the latest soccer match. All students in the IEP looked up to him, yet he was able to maintain a strong connection to Saudi culture in part because his family was in the United States with him. Hady was a husband and a father first, and he and his wife have two children. The couple was well-known for having other Saudi families over to their home for large meals and gatherings. His wife spoke very good English and was always very welcoming and charming to Saudis and Americans alike.

Hady believed that to learn English meant to study hard and spend most all of his time speaking, listening, reading and writing in English. He placed great importance upon the ability to write well in English as a critical component to a successful engineering career. A testament to this was his decision to write even the smallest things in English, such as the family's grocery shopping list, during his time in the United States. However, he also saw value in teaching his son Arabic and he also made time to regularly Skype with his wife's family in Arabic. Hady had his feet firmly planted in Saudi Arabia, but once he made the decision to come to the United States, he would stop at nothing to succeed. This included having the patience to enter the IEP at beginning level 1English and complete the graduate preparatory level 6, a process that took him nearly two years. As he often said to me, he felt that he could do anything with his family beside him.

5.6.2 Sultan: the Bachelor

> *"Writing, I have problems, like also in Arabic; I can't like write by myself." (Sultan, interview)*

As we learn from the excerpt above, Sultan felt apprehensive about his English writing. He arrived in the U.S. in the spring of 2011 on financial sponsorship from the Saudi

Arabian Cultural Mission with the dream of pursuing a graduate degree in engineering. Before he entered his graduate engineering program, he first attended the IEP at the participating university. Sultan placed into the IEP's level three, which is considered intermediate English proficiency. Sultan did not attend many classes his first eight-week session of the IEP since he entered late and it took him several sessions to adjust to life in the U.S. He initially spent all of his time with other male students from his country and went home twice in a year due to family emergencies.

In the interviews he admitted to me that in Saudi Arabia he had never had homework, not in high school nor at King Abdullah University where he had earned his bachelor of science in civil engineering. As such, he said that the amount of homework required in the IEP was difficult for him to adjust to. Still, after 3-4 sessions in the IEP, Sultan's English improved and so did his attitude about coming to class and completing homework. Instructors at the IEP spent a good deal of time outside of class talking with him about the importance of attending class and doing homework. Eventually he passed the IELTS exam choosing not to finish the IEP. He said the IEP helped him, but he felt impatient to enter the university, which is why he took the IELTS. He commented that the IEP

> *"Helped me learn like how I can build my paper and continue to write. My teacher had like one-on-ones with students and we did peer review on essays. This helped me later when I finished IEP write better." (Sultan, interview 1)*

With respect to writing, it is also important to know that Sultan had been an engineer for a desalination plant in Saudi Arabia, yet unlike Abdulhady, he did not do much writing on-the-job in his country and did not value it much. He expressed to me a great deal of apprehension towards writing in English despite the writing instruction he had received in the IEP. His

great love was math and he likened learning to write in English to a math formula. He commented that

> *"Because like when you go to elementary school, middle school, secondary school, high school, we just focus on science. Writing and these things, no way. I was talking with my friend about it, like English grammar. It is like math. Memorize the formula for equations is like almost equal to memorizing English grammar patterns. I'm good at numbers, not with my writing." (Sultan, interview 2)*

After Sultan had passed the IELTS, he entered his graduate degree program and I did not hear from him or see him for nearly an entire semester. Then, the following fall, I found out he was dating an American girl who attended the same university. He told me that he was doing well in his engineering classes and seemed very busy and happily in love. Unlike Abdulhady, he was starting to entertain the possibility of staying in the United States post-graduation, but had not yet come to a final decision.

5.6.3 Muamer: the Boss

Well-off and well-dressed, Muamer was a chatty, intelligent man who seemed somewhat alone in the world. When he arrived at the participating university back in 2010, he was taking a break from running his own engineering company in Saudi Arabia in order to obtain a second Master's degree in Engineering Management. First, he attended two sessions of the IEP beginning at level 5, advanced proficiency. He finished level 5 and then completed level 6. After that, he entered his Master's program. He felt that the IEP had been good preparation for his graduate degree program and did not have the same challenges in adjusting to it as did Sultan. He commented that

> "*The IEP was important preparation. Especially if you don't practice English enough in Saudi. For me I think I was speaking English at that time [in IEP] better than now. I used to spend daily like 6-7 hours just English. But now you*

> *spend most of the time just speaking with your friends. You just have a class like for 2 hours and they speak just specific engineering stuff, so there is no benefit, I tell you, I feel after I finished my program in IEP, it was important especially for the practice of writing and more vocabulary." (Muamer, interview)*

Muamer was in in his mid-thirties, more mature than many of his peers, and he had a good grasp of the importance of English writing for engineers both in Saudi Arabia and in the United States as evident in the excerpt above. Muamer had attended private schools in Saudi Arabia and had learned English there as well as on-the-job in his country. He often drew comparisons between private and public schools in Saudi Arabia and the quality of each. He strongly believed his English, and specifically his writing, was better because he had attended private schools and he thought writing was important. He said that

> *"Well, you have to write. Everyone has to write, yeah. So, if you don't write, that means you don't get a job. When I arrived in U.S., I arrived without writing, but better than others in government school!" (Muamer, interview)*

It seemed that Muamer's education as privileged compared to other student participants since he had attended private schools and the top universities in Saudi Arabia before coming to the United States. For instance, his first Master's was from King Saud University in Saudi Arabia, one of the most prestigious universities in the country.

Despite his privileged education and socio-economic status, Muamer was a people person and never happier than when with friends. Muamer seemed to be a comical, happy-go-lucky person and that positioned him as a natural leader in any group or partner activity. As such, he nearly always took an active role in managing others' tasks. Like Sultan, he also felt strongly that his grammar was good because he had been taught grammar like a math formula. He said that

> *"Like I already told you, using grammar as math, a lot because when I kept on writing like I remember my teacher told me, you are good at grammar, it's a lot because I started to like math. But the problem like in Saudi Arabia is we teach like English as British." (Muamer, interview)*

This was not the only time that Muamer would draw comparisons between different dialects of English and different English cultures. He also sometimes crossed cultural borders he was unaware of in the United States. For example, he did not understand the boundaries between faculty and students and would generously offer to pay for his teachers' meals or buy them expensive presents. He also offered to do this for his friends perhaps because, unlike all the other student participants, he was not close to his family in Saudi Arabia.

In fact, it seemed as if he had created another family at the participating university. He often had a cohort with him, which included a mix of Americans and Saudis. He was very much a leader of the cohort. He was also fond of his new surroundings, and could never say enough about how much he loved the rural town and friendly people that surrounded the university.

Muamer eventually graduated from the university with honors and went on to pursue a doctorate at a large private institution in the U.S. He admits that he feels lonely and isolated from the strong community of friends he had left at the participating university.

5.6.4 Hussein: the Academic

> *"I got so used to writing in English that I find it hard for me to write in Arabic. That's a problem for me because sometimes I tweet. I use Twitter. Twitter is (pause) usually I write in Arabic on Twitter. Whenever I write something in Arabic, it is so weird for Arabs to understanding because I'm writing with an English mentality. It's different. I have to figure out a solution for this. I have to take an Arabic class!" (Hussein, interview)*

As evident from the excerpt above, Hussein felt strongly that his English writing was highly proficient. An academic with an appetite for knowledge and a strong desire to conduct research, he came to the university to pursue a PhD in Computer Science Engineering after earning a master's in the same discipline from George Washington University (GWU). He is the only student participant who had previously attended and earned a graduate degree from an American university. He had entered the participating university directly by taking the TOEFL exam and was well-versed in academic writing because he had published with faculty at GWU. Hussein said that

> *"Before I went to the U.S. for GWU, I had to do the TOEFL. I did the TOEFL for the first time after high school. Excuse me, after graduating from university and I scored a 577, which was the requirement for GWU at the time. When I went to Washington D.C., I took the TOEFL again. It was the IBT, so I scored 90 something. So, I took the TOEFL twice the score was about the same, when I graduate from GWU and then, after two years applied here, I didn't have to do the TOEFL again. I was a U.S. graduate. That's the thing. They say if you already have a degree from the U.S., you are okay. You are already capable, but I think I'm okay with writing because I wrote at GWU and I published with my major professor and other faculty too." (Hussein, interview)*

Hussein was married and his wife had gone through the IEP at the participating university. Like Hussein, his wife's English was excellent and she had attended private schools in Saudi Arabia like Muamer. In fact, his wife was very independent and went out and did things without her husband. She was a scholar herself and is now pursuing her master's in economics from the same university, having long-since finished the IEP.

Hussein had years of experience writing in the field of engineering in Saudi Arabia and his family is well-educated. They had started speaking English to him at a very early age. Yet he was critical of the education system in Saudi Arabia and how English was taught there. Nevertheless, he accepted it for what it was and did not seek to change it. Whenever

we discussed or compared the educational systems of the U.S. and Saudi Arabia, he would lament that he wished Saudi Arabia's educational system would change and encourage critical thinking and foreign languages.

Yet surprisingly, when I first met Hussein, he did not overly concern himself with speaking Arabic to his two-year old son, commenting in the interviews that if his son or anyone was going to learn English, then he or they needed to stop speaking Arabic entirely. He is the only student participant to suggest that his family stop speaking Arabic entirely. However, after our last interview, Hussein admitted that he was going to look for Arabic books to read to his son so that he would have some exposure to Arabic, so it seemed his opinion was changing. I came to understand Hussein as a sort of international citizen because of his desire to expose his son to Arabic text and because of his ability to write well in English.

In fact, Hussein was the kind of man whose head was constantly wrapped up in his research and he spoke English so well that I could hardly detect an Arabic accent. During the interviews, Hussein would often pause, taking time to think before responding, something none of the other participants did. The last time I spoke with him, he was very excited about how well he was working with his American advisor and described the process of publishing a paper together with him. Unlike many of his peers, Hussein has been in the U.S. longer and his perspectives show choices about culture. Still, Hussein understood well the struggle Saudi students feel when they come in to a U.S. university needing to learn English and he empathized with them.

5.6.5 Mohammed: the Activist

> *"I'm worried about the maybe writing skills, yeah. I think it's because we didn't do much writing in previous studies, so it is tough experience because even when I did my Master it was a coursework Master. And one thing is that coming from a technical background, most of times we don't do much of I would say literature reviews or something related to theories or a lot of text." (Mohammed, interview)*

In this excerpt, we can hear Mohammed's apprehension with regard to writing much less English writing in particular. Mohammed arrived at the university to pursue a PhD in engineering. He was being sponsored by a small private university in Saudi Arabia where had spent the past four years as a faculty member after receiving a Master's degree from an Australian university. I came to understand that his apprehension may have come from a lack of writing preparation during his graduate degree program in Australia. In fact, he told me that he had not written a thesis there and felt unsure of his English writing skills. In addition, he like Hussein, felt that his English language training in Saudi Arabia was very weak. As a result I wondered if Mohammed blamed what he perceived as weak writing skills not only on the lack of writing in his Master's degree program, but also on the way he was taught English in Saudi Arabia.

Possibly contributing to Mohammed's self-perception that his writing was weak was the consideration that Mohammed was somewhat of an outsider from his own department and the local Saudi community. He told me that this was because he had been very vocal in saying he wanted to change the educational system in Saudi Arabia when he first arrived in the United States and the local Saudi community took issue with that. Contributing to his sense of isolation was his own department at the university. After nearly a year there, he had still not been given a major professor since the one he had originally been assigned had left the university. This left him feeling alone and uncertain of his choice to accept financial sponsorship from his Saudi university for the engineering PhD program in the United States.

I considered whether Mohammed's relative social isolation and lack of writing preparation may have had an impact on his self-perceptions of his English writing. Hussein, on the other hand, who also took the TOEFL, did feel confident in his ability to write, but not because he had passed the TOEFL. The difference between the two, Hussein and Mohammed, was the amount of writing required during their Master's programs.

Like Hussein, Mohammed was married and his wife was taking classes in the IEP. Unlike the other married student participants, he and his wife did not socialize much with other Saudis or Americans. His wife did not speak English well and he felt very responsible for handling their affairs at the university, however, like Hussein he also encouraged his wife to be independent and go out and do things without him. Like Abdulhady, Mohammed and his wife were also still very connected to their family in Saudi Arabia and regularly Skyped with them.

Mohammed's family influenced him to learn English and study in Australia and later the United States. Mohammed's father was an Arabic literature professor in Saudi Arabia and he started writing in Arabic at a very young age. Neither of his parents had the opportunity to learn English, but they pushed their children to learn so, like Sultan, Mohammed and all of his brothers and sisters learned English in Saudi public schools. Today, Mohammed's biggest conflict is whether or not to return to Saudi Arabia. Although he is interested in finding a tenure-track academic appointment in America, he said it would be very challenging to do so and was leaning towards returning home to Saudi Arabia.

5.7 Emerging Themes

Each participant's experiences are unique, yet commonalities exist. It is for this reason that excerpts of oral interviews with participants are offered to understand each individual's unique experiences with respect to self-perceptions of English writing embedded in social, cultural and educational contexts. The excerpts provide a window into the themes that emerged from the unit of analysis: self-perceptions.

5.7.1 Living in Two Cultures

We begin by examining participants' self-perceptions related to living in U.S. and Saudi cultures simultaneously. That is, each participant took a different approach to being a Saudi Arabian studying at an American university, juxtaposing cultures and straddling cultural fences in different social situations. Below are key findings:

1. Participants draw strength from having their families with them in the U.S., yet this also presented unique challenges.
2. English mastery is, to some degree, influenced by family.

First, we look at the influence of family, which takes various forms: sometime support, sometimes challenge.

5.7.1.1 Participants Draw Strength from Having their Families with them in the U.S., yet this also Presents Unique Challenges

Mohammed draws strength from his family and wife, who are at the university with him. Yet when something is amiss at home in Saudi Arabia, this prevents him from being able to focus on academics and English in America. He said that

> *"Family is very, for me very important. I would say for like Saudi people, like we live in large families, not like here. Like the average number of children in Saudi family is six, and we used to live with the grandmother and the grandfather, they all lived*

> *together so connection is very strong. So if there is no Skype or there is no contact, I would say I can't like imagine, yeah. It helps having my wife here, yeah. Without her it would be really hard." (Mohammed, interview)*

It seems that Mohammed is living in two worlds: a Saudi world and the world at the participating university. Like Mohammed, Hussein too is marked by the influence of family including his wife who is at the university with him. He said that

> *"We both are here working and studying together in English. We are like a team and I'm fortunate for having that." (Hussein, interview).*

And, like Mohammed, Hussein draws support from his wife who is with him, signaling that being married or single might have an impact. And by understanding the role of family and home culture, through Sultan's voice, I could hear his conflict about whether his relationship with an American woman in the United States would survive if he brought her to Saudi Arabia as a girlfriend or wife, later on.

> *"The problem [is] my girlfriend. If she is going to go[to Saudi Arabia] there she will have trouble because (pause) you won't tell anyone, so I think that she is not that kind of girl, she can't live in Saudi Arabia. My cousin here he got married like last Christmas, but his wife, she is quiet, not like crazy American girls, so maybe she will live there. But, my girlfriend, I don't think so. But she is like, I will move with you, I will move with you, but I doubt it. (Sultan, interview)*

Sultan was unsure of how his American girlfriend would handle being in Saudi Arabia and this left him feeling torn about where he would go after graduation. For instance, Sultan had the following to say about his relationship with his American girlfriend:

> *"But everything here in America about oh, I'm your friend because I need something from you. When he is done he won't be my friend anymore. So this thing is kind of like affect me. When I was there her Dad is just like, he probably thinks I'm super rich." (Sultan, interview)*

Sultan felt that Americans do not understand him or Saudi cultural norms, yet he persists in exploring American culture and relationships while recognizing that his may not last for the very same reasons. Sultan remarked that his girlfriend's father saw him as a fiscal resource.

> *"When I go there oh like he is just like asking like go get milk, like you finished the milk, go get milk, kind of like, oh it's just weird. And when I get there, like her step-mom, she just like when I got there, like she will ask my girlfriend, how are you, give her a hug and when I am there like it's like she doesn't see anyone, just dead, like I'm not existing there. She won't say hi or anything." (Sultan, interview)*

Sultan also seemed conflicted about his American girlfriend and Islam. He said

> *"She went to the Mosque with me and like her parents found out. So, I called her mom and her mom called her dad and oh, finds out she went to the Mosque and she and her parents were upset because when you go to the Mosque you have to cover. She went with me once, that's it and I felt like, I'm not like, I'm not even welcome in her parent's home after they found that out." (Sultan, interview)*

Sultan believed his girlfriend's family is discriminating against him because he took her to a Mosque. While Sultan is in conflict with his girlfriend's American family, Muamer is able to live in both worlds: that of his Saudi family and that of his American family of friends. That is, Muamer seems at ease with and very close to his American friends. He remarked that

> *"I really like to do things with my American friends there. They are like so nice to me. In fact, I really miss them." (Muamer, interview)*

From the excerpt above, we can tell that his friends are a support to him in the United States. Still, other student participants have a hard time concentrating on life in the U.S. when things are amiss at home in Saudi Arabia. For instance, Mohammed commented that

> *"I can't focus on stuff here if something is wrong at home, but my family really encouraged me learning English. Yeah, so what I would say again, I don't want to sound like, how you call it, a nerd, but my dad used to make us read, you know, very*

> *old novels, Arabic novels, and he would tell us go and read this book and at the end of the week we will discuss the book and the person who, like we are 5, so the person who will have answered most of my questions, and he will discuss with me deeply, he will get a big of money as prize. As I told you before, I love reading, especially in Arabic and also my family my dad encouraged us from childhood to read and write, so that's one thing." (Mohammed, interview)*

Overall, participants who were married reported that their families were helpful in adjusting to life in the United States. On the other hand, Sultan, who was single, felt challenged by his American girlfriend's family. In addition, some participants commented that happenings in Saudi Arabia distracted their focus on graduate study in the United States.

5.7.1.2 English Mastery is, to Some Degree, Influenced by Family

Specifically, family also influenced English mastery for student participants. The use of English in the home while in the United States as well as each participants' experiences with family in Saudi Arabia played into how they learned English. For instance, in the case of Hussein, his family in Saudi Arabia was very influential in the way that he learned English.

> *"Mostly from outside the schools, but I'm blessed with a family that supports me. They are educated and sometimes my big brother used to (pause) he was in high school at that time, so he learned much more than me. So he came to me and he always supported me in learning English writing, not by the conventional style. Sometimes he threw a word and he said what does that mean, so I tried to figure it out by myself. That's how I learned and then I began to watch movies, listen to music. That was the major part of me learning English." (Hussein, interview)*

I came to understand that students' mastery of English writing might also be understood by the extent to which they use English at home while at the participating university. For example, Abdulhady, who is also married, said

> *"Yes, most of the time we speak Arabic at home. I speak Arabic with my wife. For my kids, he can hear when he was like one year old, so he went to pre-school and most of*

> *the time they speak to him in English. They speak English all the time, they don't speak Arabic. So, he started with English becoming his first language not second language. So we speak to him in English sometimes just to make him understand the things that we want him to. When I want to go to the shopping, I ask my wife to write English. And when she want to send me a text message, write to me in English. I also Skype with Hajer's family because they have computer and internet, very fast, but we do it in Arabic." (Abdulhady, interview)*

In our second interview, Mohammed continued to reflect on learning English and provided me with a good example of what he had learned from his parents and siblings in Saudi Arabia. Mohammed's father encouraged him to not only improve his Arabic writing as a child, but also to take the opportunity to learn English.

> *"Yeah, all my brothers and sisters speak English. My sister is a pharmacist, yeah. She went to pharmacology and now nobody taught her English, so she worked on her English by herself. Even my sister, the other one, she is doing English literature, same thing; she started watching American movies very good. It improved like our English dramatically, so that is the thing. My brother, he is in now and he speaks English, he went there. But my mother and father, no. They are, my father is a professor at the university. He wanted us to learn English because he did not have the chance to learn, so he wanted us to like major in like English speaking fields. Yeah, but they don't speak English very well. They might speak English okay, but my mother no. She can't." (Mohammed, interview)*

Here, in these excerpts from Mohammed, Abdulhady and Hussein, we learn that their wives were a source of support for them while at the participating university. We also learn that their parents do not speak English. As such, their exposure to the English language did not begin until formal schooling at the age of thirteen. That is, extended family in Saudi Arabia and having a family in the U.S. appears to influence their understanding of English and education. This was especially true for Sultan, who, unlike Mohammed, Abdulhady and Hussein, was not married. He said that

> *"No one in my family speaks English. I am the first one went to college." (Sultan, interview)*

Sultan went on to say that

> *"Before I left, my mom told me just go and pack, and don't lose your culture or lose yourself, that's it. So she always like called me her little boy didn't change. Last time when I went to Saudi Arabia, I was like I felt not like a part from the family anymore because they just ask me, oh do you want to eat dinner, what do you want, and they won't ask anyone, I am the youngest one in the family. My dad is old, my mom she is old, but like when you go to her house it's like oh, what do you want, what do you want to eat, every day, you feel like you are not part of the family any more. She talked with me a lot before I left, like you have changed a whole lot, next time, be my son to love. I left from here, I am the same guy who will go back to Saudi Arabia so I am trying so hard to be that same guy it's hard, in America it is super hard, like I don't really feel like I've changed a lot." (Sultan, interview)*

Altogether, it seems that the student participants are juggling back and forth between cultures. We can see that they remain in contact with family in Saudi Arabia and that some of their family members do not speak English. Yet some student participants are using English at home with their families while in the United States. As such, they have to switch back and forth between languages. It appears that their language usage, to some extent, is grounded in family life and those interactions both in Saudi Arabia and at the participating university. We can see that different student participants take different approaches to living in two cultures simultaneously with regard to language, family and relationships. Indeed, it also seemed that participants were navigating American social and cultural norms when it came higher education in the United States.

5.7.2 A Critique of Learning in Saudi Arabia

A second important theme that emerged was student participants' critique of learning in Saudi Arabia. In what follows, I will discuss how student participants understand their educational experiences in America through the lens of their experiences in Saudi Arabia. Below are key findings:

1. Mode of classroom instruction in the U.S. and Saudi Arabia is different
2. Participants believe that socialization helps them learn English
3. Saudi government/public schools have weaker English language preparation than do private schools
4. Educational practices in Saudi Arabia favor teacher-centered instruction
5. Arabic and the Qur'an are heavily influence Saudi Arabian education

First, student participants reflected extensively about their educational experiences in Saudi Arabia as being different than their experiences in the United States.

5.7.2.1 Mode of Classroom Instruction in the U.S. and Saudi Arabia is Different

Specifically, they commented on differences with regard to mode of classroom instruction, which, in Saudi Arabia, involves imitation, dictation, memorization and grammar translation. For example, Abdulhady offered this explanation of Saudi Arabian education to me:

> *"The conventional way of learning (pause) sitting at the desk and someone bring the book for you and someone tells you this is this and this is that. I don't think that people will learn English this way. It's a culture. If you love the culture and you try to learn about that culture you will learn the language of that culture. I was involved in the American culture from earliest age, so it was a natural thing for me to learn the language, if I need to learn about the culture I need to learn about the language, so it came natural for me. I didn't think about learning English." (Abdulhady, interview)*

Abdulhady explained his experiences writing down what his teachers in Saudi Arabia said orally to learn to write.

> *"I copied sentences to learn to write. No maybe just first grade and second grade. After that just when teacher stand up in class and tell any story, just tell us, we would just write it down. I was five when we started this." (Abdulhady, interview).*

This is echoed by Muamer and Mohammed both.

> *"Yeah, well the teachers did not make us speak it, most of them were from Egypt, so there is no benefit. We just listen and then write what they say. Not fun!"(Muamer, interview)*

> *"So the teacher talks and then you write what the teacher says." (Mohammed, interview)*

Students also reported copying letters, sentences and texts during their educational experiences in Saudi Arabia specifically with regards to learning to write in Arabic.

> *"First time I write in Arabic? Just repeat some simple sentences." (Abdulhady, interview)*

> *"Yeah at first my mother used to sit down with me and teach me how to draw the Arabic letters and the shape of the numbers, using some-you know the books with dots on them, this was preschool. I continued and I don't recall ever detail of how I learned but it was the process of step-by-step copying the letters and sentences." (Hussein, interview)*

Mohammed remarked that, in Arabic he would rewrite

> *"Simple paragraphs or simple stories about animals that attract children to copy it." (Mohammed, interview)*

Sultan also recalled copying sentences when he was learning to write in English, saying

> *"Yes, I copy sentences to learn the form of the language. My sister was a teacher and she knew simple sentences that help children to learn to write. She gives me the same sentences that I repeat all the time." (Sultan, interview)*

Along with dictation and imitation, students were also asked to memorize vocabulary, perform drills and repeat words out loud in class to memorize them. This was part of the process used to learn English. Students commented that

> *"They give us like vocabulary to memorize and to try to write it several times. The second day they asked us to write like some of them. They chose randomly, and if you don't answer, you are going to face a lot of trouble. They still hit kids when I went to school." (Muamer, interview)*

> *"Yes, lots of drills to memorize words-so boring." (Mohammed, interview)*
>
> *"I remember my teacher making us repeat words to memorize them." (Abulhady, interview)*

In addition to memorization, students also explain how they were taught using the grammar-translation method to learn English.

> *"There are different ways to teach English in classes in Saudi Arabia. The teacher spends time just writing on board and explaining the grammar. They didn't use lesson listening practice or reading practice. A lot of grammar or just soaking it up. Maybe 50% without a teacher. Just read and translate. That made it difficult to understand." (Sultan, interview)*
>
> *"When studying English, we started translating it in school. My teacher explained how to translate from English to Arabic." (Abdulhady, interview)*
>
> *"But they don't do that, so we just have class. He would write on the board say verse, or if it is grammar based, it would be grammar, if it is reading then it would be like reading from a passage or something. It's not integrated skills to get in one class, something like that, yeah." (Mohammed, interview)*

Translation seemed to figure heavily in learning English in Saudi Arabia. Hussein began having the opposite problem of translating from English to Arabic after spending years in the United States. He remarked that

> *"I'm sure having a hard translating from English to Arabic now. I got so used to writing in English that I find it hard for me to write in Arabic. That's a problem for me because sometimes I tweet, I use Twitter. Twitter is (pause) usually I write in Arabic on Twitter. Whenever I write something in Arabic it is so weird for Arabs to understand because I'm writing with an English mentality, it's different. I have to figure out a solution for this, I have to take an Arabic class." (Hussein, interview)*

Although he is joking, Hussein does perceive his writing in English as highly proficient. In fact, he actually perceives his English writing as being better than his Arabic.

Overall, student participants reported that the way they learned in Saudi Arabia was very different from the way they were being taught in America. Grammar-translation, teacher- centered instruction and dictation and imitation appeared to figure heavily in their educational experiences in Saudi Arabia.

5.7.2.2 Participants Believe that Socialization Helps them Learn English

Hussein talked extensively about the importance of socialization with professors and friends. He also commented on how he believes Saudi students might best learn English: by socializing with Americans.

> *"I worked closely with my professors and I had many American friends. This really made the difference between my learning English and publishing and really being successful at university and not" (Hussein, interview).*

Abdulhady had similar things to say, yet he remarked on the importance of encouraging other Saudis to socialize with Americans.

> *"I meet a lot of Saudi students, they feel the burden of learning English (pause) I tell them don't think about learning English outside. Try to talk to people, try to go to places where there are no Saudis or no Arabs, don't be with Arabs all the time, because you will not learn English. Try to make non-Arab friends that are American, so watch movies go to the movies, listen to music, read books if you have. Some people in Saudi Arabia as you may know (pause) they think of music as something evil, it's prohibited especially in public government-run schools" (Abdulhady, interview).*

In other words, making friends with Americans and leading an active social life appeared to be important to student participants.

5.7.2.3 Saudi Government/Public Schools Have Weaker English Language Preparation than do Private Schools

Certainly, Abdulhady was not the only student participant to comment on the role of the government in Saudi Arabian education and in this case the government's prohibition of certain types of music. For instance, Mohammed added that

> *"Mostly we read the books that the government printed for us. We don't have like extra-curricular books outside of any other. We have library books but it didn't make much towards our education." (Mohammed, interview)*

Abdulhady added

> *"When the students start study, there are 3 different kinds of classes. Classes of science, Islamic religion and class with sports for fun. Why the education system is different from Saudi Arabia to the United States, teachers talk all the class time." (Abdulhady, interview)*

> *"So, when you now go and see any high school graduate from any Saudi school, other than private school. I am talking about public school, so public school they cannot make even one sentence. So that is very upsetting for me." (Mohammed, interview)*

From the participants' comments, it seemed to me that there was some disparity with regard to educational quality depending on where one went to school. It became clear to me from Muamer's comments that he believed a great deal of difference exists between the quality of public and private education in Saudi Arabia. Muamer believed that the private school provided much better English language preparation. That is, if you could pay for it. Muamer explained that

> *"In the school, if you are not a rich one and do not go to the private school, your English will be bad. But we have private language schools. You know, British. I'm lucky I went to private school. Government school English is not good. So you have to attend one of the private schools. The problem is you can't practice English in government school. When I was in the university, we used English just to read the book. It doesn't matter how to pronunciate. But you can't practice English. They don't teach it so you practice it-in private or government school." (Muamer, interview)*

Hussein, who went through the public school system in Saudi Arabia, explained his experience of learning English there and then applying that knowledge to his graduate studies in the United States. Hussein, who attended public schools, has a very different perspective compared to Muamer.

> *"During my time, it is not in the elementary school, it is in the first year of junior high and we take English through high school, so there are 6 years of K-12 studying English in my background. Then I went to the college of engineering and the study in the college of engineering is in English. That is different from students who went to the college of commerce, for example, business, those studies are in Arabic. So it happened that my technical education was in English. The professor in class can communicate in Arabic but, for example, if he wants to say something other than technical terms, he may communicate in Arabic, but the language, our writing reports or anything were done in English." (Hussein, interview)*

In summary, the difference between public and private education may have influenced some participants English language learning. Specifically, it seemed that private education might provide a higher-quality of English instruction than the public (government) school system.

5.7.2.4 Educational Practices in Saudi Arabia Favor Teacher-Centered Instruction

Still, participants reported that all instruction in Saudi Arabia was teacher-centered regardless of whether it was public or private. Sultan, like Hussein, had attended public schools in Saudi Arabia. He explained his perspective on Saudi education.

> *Also, like the first month in American class, I was quiet- like I took class with my advisor and he was talking to me, oh you must talk during class and I said because I grew up like this in Middle East, I don't make jokes. I am here, I am a student, you are a professor, I have to respect you, that's it. If you will go out with me like to drink coffee or do anything then that is like a different place, you will be my friend, not my professor. So they have always talked, like my professors have always talked with me like that, like why you don't like talk with us, but it's my culture, so I am trying to improve it." (Sultan, interview)*

He went on to say that

> *"If you are a good student, if you got admission in university government will pay $3000 every month as a student and the government will pay for the professors. You just go there and like you have to like respect the professors because professor is like teacher like in my culture, in Islam they are very important because they raise nation, they make nation to first in the world, so we have to respect them. We don't ask, if I have to ask, I have to raise my hand, get permission, then ask. And it's not like here*

Sultan's explanation was comparable to others. Abdulhady similarly described his education in Saudi Arabia, saying

> *"If it wasn't for the schools I don't think that I would learn the way I did." (Abdulhady, interview)*

Students expressed to me their understanding of the educational system in Saudi Arabia and its teacher-centered practices.

> *"In Saudi Arabia I felt that the classes need more attention, education in general. From what I heard here and sometimes I see on t.v., that (pause), the classes here is somehow better than what we have in Saudi Arabia. Comparing public to public (pause), like for example in Saudi Arabia the classes were just a place for the teacher to come and tell us and read the book." (Mohammed, interview)*

Mohammed also offered suggested changes for improvement.

> *"This is because we need the type of education that involves critical thinking and doing research in early stages, even at first or second grade we need that. We didn't have it at that time and we still don't have it now. They are thinking about improving it but this is the way it should be, because these are the tools that today's world requires; critical thinking, doing research, collaborations among the students, teamwork. We don't have none of these things, it's just like a book, an exam, a teacher, a classroom- that's it." (Mohammed, interview)*

Overall, after studying in the United States, some participants did not favor teacher-centered instruction and began to conceive of ways in which the educational system in Saudi Arabia might be changed.

5.7.2.5 Arabic and the Qur'an are Heavily Influence Saudi Arabian Education

In fact, when I asked Abdulhady about how he learned English, he responded by saying that if it were not for school, he would not have "learn[ed] the way [he] did." He further clarified and said that he was referring to learning to write in Arabic based on the Qur'an. The Qur'an is comprised of a series of oral stories that have been written down (Prokop, 2003). Mohammed and Sultan explained the way they learned to write using the Qur'an as a model.

> *"We did two different types of writing based on [the Qur'an]. I remember we do like things like our teachers tell us go and write about father, what you feel about your mother, or nation, or religion, or loyalty, or king, or these kind of topics, yeah." (Mohammed, interview)*

> *"You write your name. Not a lot of writing actually. You write like a poem, you write your project that you study in secondary school. You know write stories like in the Qur'an." (Sultan, interview)*

It seemed that writing in Saudi schools may be less emphasized compared to the United States. In addition, speaking and listening may even be preferred, as Sultan commented:

> *"It's kind of from my culture is like, when you are young you have to listen to old people, get their experience. It's just like my dad always like, he told me old people they talk like something like God from Qur'an, experience you give for like, they've got it for a long time, you get it in 15 minutes, so just listen. We like speaking like face to face like when we like explaining, feeling, or, we like it face to face. Like, it's better than texting or writing." (Sultan, interview)*

With respect to written communication, the Qur'an is of importance. In fact, students described the Qur'an as the central component of their education in Saudi Arabia. For example, Hussein remarked that

> *"The Qur'an is not only an important part of education of Saudi Arabia; it is an important part of life. All our lives is centered around Qur'an so taking this idea it is also an important part of education. So, starting from the first grade, we start learning how to read Qur'an and then as we grow older we begin to (pause), we take classes just on how to interpret these verses and to know the reasons that they are*

> *there. It continues until I took (pause) my bachelor's degree, it was mandatory for me to take also (pause) at least four classes in Qur'an. From first grade until I finished my bachelors I was taking Qur'an classes." (Hussein, interview)*

Mohammed also reflected on his experiences, saying

> *"They believe the Arabic language is the most important language and if don't speak Arabic very well, then you can't read Qur'an. So they said okay. No English for the elementary school for 6 years. Now it is very different. Now it has been changed after I finish my limit, but for 6 years of my studies for elementary, from 6 years old until 12 years old, never had any English language in my study. Then after that, we go to what we called middle school for 3 years and this I had first introduction of English language." (Mohammed, interview)*

Every single student participant reported that the Qur'an was important to their education in Saudi Arabia. In fact, all student participants commented that they were asked to write what the teacher dictated aloud from the Qur'an and other religious texts, showing participants' perceptions of the teacher's centrality.

5.7.3 Students' Self-Perceptions of Writing

Self-perceptions are bound by context (Baumeister, 1999) and encompass a person's belief about himself or herself, including attributes about who and what self means. Self-perceptions too are bound by context. In the three themes below, which focus on writing, we see the emergence of the participants' self-perceptions of their writing and the way they view writing in various contexts in their lives.

5.7.3.1 English Writing is Important

Each individual came to understand English writing differently, each being motivated by different life experiences. Every student participant reported that English writing was important to them, yet this varied as to the degree of importance they each

placed on English writing and likewise with regard to each of their perceptions of their own ability to write in English.

Below are major findings:

1. No one felt that their English had been proficient enough when they began their undergraduate degrees in English in Saudi Arabia because of weak English language training. As such, some felt that Arabic's importance in Saudi Arabia was waning.
2. Not all participants were confident their English writing ability was good enough to complete their graduate programs without some form of assistance. Specifically, IEP participants thought their English writing was better than those who had not attended an IEP.

We begin with students' experiences with regard to English language training and how that impacted their undergraduate study in Saudi Arabia and ultimately their graduate study in the United States.

5.7.3.1 Weak English Language Preparation in Saudi Arabia and the Declining Importance of Arabic

All student participants felt that their English language preparation in Saudi Arabia was weak and some also felt that English was becoming more important than the mother tongue, Arabic. After high school, Mohammed, Hussein and Sultan all felt that their English was not good enough to do well at their Saudi universities where the language of instruction was English. As Mohammed attested

> *"The Saudi university expect that we know English by default, so there is a gap. Even like now people express in Education Ministry they have this problem. There is a big gap between high school students and university students." (Mohammed, interview)*

The jump from high school to university study was echoed by others. Hussein and Sultan added that

> *"English was important when I entered university, when I started my Bachelor's degree in Saudi Arabia, because all engineering majors and sciences like ones that the job market needs is actually in English, most of the books, most of the professors, most of the teachers are all English. So we like suddenly realized that we need a very good English background to be able to learn these majors in all universities. So now, like a few years ago, they started changing the system in their communication, now English is taught from the start gate instead of like I told you before when you were like 16." (Hussein, interview)*

> *"Well English is important, before I attend the university back home, it is important in like 70's or 80's. You know you want to speak English, but no one can encourage you to speak English. It is important, now if you apply for a job, they ask you do you speak English, you have to know to speak and write English. They don't ask you about French." (Sultan, interview)*

It seemed that participants began to understand English writing as important partly based on their experiences with English during undergraduate study in Saudi Arabia and as a result of their experiences there. Hussein, for example, commented that Arabic is dying in Saudi Arabia as the language of business as well as the university system. He said

> *"So yes, I would say some people, some of my friends or some people like professors have said Arabic is a dead language because now the science and research are all like, people are working in English, even like people from or whatever. All other languages, they try to publish their research and scientific experiments in English because it is the language of, I would say, the age no." (Hussein, interview)*

Although student participants recognized that they needed to be able to write in their degree programs and for their jobs, not all participants were confident in their ability to write well enough to finish their degree programs successfully without outside assistance.

5.7.3.2 IEP Participants thought their English Writing was Better than those who had not Attended an IEP

Participants who had gone through the IEP felt more prepared to write, but were still struggling with the demands of writing in their degree programs at an American university. For example, Sultan remarked

> *"Yeah, but it's like we study everything in English [in Saudi Arabia] but we kind of like, everything about numbers. So if it's numbered, I really need to learn how write stuff just like numbers, understand the question and do everything. But here it's like it's different. Oh, this article, summarize this article. It's hard. IEP help me and I would have struggled real hard without it, but not enough." (Sultan, interview)*

Sultan was not the only student who remarked that he felt unprepared for English writing despite the IEP's help. Muamer said that

> *"Struggle with it? Yeah, writing is hard. It was hard in Saudi in undergrad. The IEP made me write a lot. If I didn't, it would have been harder, but I still have troubles especially now that I'm a doctoral student, you know? I should be able to write." (Muamer, interview).*

Muamer thought he should be able to write, but he was still unsure of his writing ability despite having attended the IEP at the participating university. Indeed, a lack of confidence and apprehension was a recurring commonality.

5.7.3.2 Help Me with my Writing

That is, writing apprehension ran deep for student participants. In the next section, I discuss how needing help with writing relates to the larger theme self-perceptions of English writing. Below are key findings:

1. Students reported needing help understanding faculty's expectations with regard to writing.

2. Some participants reported using coping strategies to manage the rigorous writing expectations of graduate school using software, American friends or even plagiarism to complete required writing. Some simply avoided writing altogether.

We begin with faculty expectations and how students understand these expectations.

5.7.3.2.1 Students Need Help Understanding Faculty's Expectations about Writing

Generally speaking, it seemed that students did not always understand what engineering professors wanted from them with respect to writing since they may or may not have received training on how to write from their engineering professors. For instance, Sultan remarked that he did not understand which citation method to use in the field because his professor had not been explicit.

> *"No. It' just I had like, I did critique and I asked my professor, and I asked him like okay what like style do I use, like MLA and he said like whatever you do, and I said okay, so I did MLA, and he took some points because I followed the page number, so I didn't say anything." (Sultan, interview)*

Writing expectations had not been made clear to Sultan and, as such, he was struggling. Still, he was not the only student challenged by a lack of understanding of expectations.

> *"Also for American student it's really hard to understand what professor wants. And believe me writing is like, what everyone, also American people, like in engineering college, they have really, really, really problems with the writing. Also this guy, he is my friend, he is like, his GPA is like 3.99, he always talks about how he cannot spell this word. I like am fixing his lab reports always, grammars. He has problems with writing too." (Sultan, interview 2)*

As a result, it may be that American students and international students alike might be similarly challenged by writing expectations for engineering. For instance, Abdulhady

recognized that he needed to continue to work on his English and did not feel totally confident in his ability to write, yet I could see that part of his frustration and apprehension came from a lack of understanding of what professors wanted from him. Abdulhady said

> *"I don't, you know, write that well in English. I need more practice. And they don't tell us how to write in classes. I have to read and then try to do it like this when the subject is easy, I write easy. When the subject is difficult, I write difficult. The subject, if I don't know more information about the subject, I can't write." (Abdulhady, interview)*

This comment demonstrates Abdulhady's frustration with perceived expectations. Indeed, it seems that there is a need for help to complete assignments. That help may come in the form of a computer program, especially with regard to spelling. As Sultan attested

> *"Well, I feel okay most of the time, but I think one of the problems most of Saudi students suffer is the spelling when they arrive because most of the time when we arrive we use like our like our computer editor so or Microsoft Word or any other computer, most of the time they could correct words for us. So we don't have the ability to, you know, go and check the word at home to rewrite them unless we go and check for like our handwriting, so when you do handwriting you find out that how much spelling mistakes you make." (Sultan, interview)*

When asked about whether or not his writing was good enough to complete his PhD with no problems, Mohammed said

> *"Well, I am not sure. I'm worried about the maybe writing skills, yeah. I think [my writing] is okay. I'm getting okay feedback, but the problem is not with feedback, my problem is writing. Like, I would say I am getting the result that they want, but the writing itself, the writing skills is problem I think because we didn't do much writing in previous studies, so it will be first experience, because even when I did my Master it was course work Master." (Mohammed, interview)*

Hussein's confidence his English writing was better than Mohammed's.

> "*Sometimes I feel the need for coming up or using different words. I can express something with a single language but for academic style writing I feel that it's more appropriate to use diversity in your wordings. It's more to keep the reader's attention, to keep him enjoying what you are writing, not to stick with*

> *the same word again and again and again. I started reading more advanced books like in: philosophy, history, not just novels or stories. Sometimes I go to the dictionary just to understand the meaning, so I keep writing these words, it's improving my dictionary." (Hussein, interview)*

Overall, students reported that both Americans and international students may or may not understand faculty's expectations. Specifically, Saudi Arabian engineering graduate students felt challenged by a lack of writing practice in English.

5.7.3.2.2 Using Coping Strategies to Manage the Rigorous Writing Expectations of Graduate School

Four of the five student participants reported using some type of coping strategy to manage the writing requirements at the participating university. These included plagiarism, help from American friends or using a software program. For example, Muamer explained his challenges with respect to English writing.

> *"Oh, yeah, but there is some letters, they have the same pronunciation, so sometimes I don't know how to write. You know how to write Arabic, so some of them have certain features like that and some of them don't have. I feel sometimes confused to what a point is, you know and how to write a certain kind of thing in English." (Muamer, interview)*

Beyond spelling, one of the major challenges Arabic learners of English appear to face involves understanding why plagiarism is considered unacceptable at institutions of higher education in the United States. This became evident to me from students' comments during the interviews. Muamer said that

> *"One of my professors here said, don't try to cheat because I know your country's familiarities. You can't go to the point directly or I will know someone is writing for you or not. I just don't paraphrase. Anyway, I had a class with him. He is not my advisor. I told him, oh, this is difficult so I am going to get someone to write for me. He said don't do it because I know the where the material comes from is and I will know you did it." (Muamer, interview)*

When I asked Muamer if he did get someone to write that paper for him he confirmed that he had. He was not the only student to seek outside help or to insinuate that he had plagiarized. Hussein remarked that he had plagiarized in previous study in the U.S., but had learned not to do so because he had gotten caught his first semester at another university.

> *"Oh, yeah and you have to paraphrase because it is something bad if you cheat- very, very bad. I learned not to do that in America. For me, because I am an engineer and most research by English since I wasn't back home, so I just use English. Even my language not that good, but in engineering it was good. Now when I read some projects that I wrote, I feel they are funny." (Hussein, interview)*

Beyond plagiarism being perceived as acceptable, I could also see a lack of confidence exhibited by students who seek assistance with writing from American friends. Even Abdulhady, a role-model to his peers, remarked that he had sought assistance with writing in English, but still advised other Saudi students not to do so. He said that

> *"I remember just one time my friend help me with writing. To correct my grammar, because I remember at the time I was sick and I can't correct all my paper and I remember that my final draft that I should get high grade to pass IEP. It's hard to paraphrase with good grammar. It's hard to do APA cites. But when American correct all the grammar, the student cannot write well after the week. Yeah. I advised them, they should try to- I will spend about 4 or 5 hours to correct my set and put some, I tell them how to write the set." (Abdulhady, interview)*

Even Sultan had received outside assistance with his writing from his American girlfriend and though it appeared to be an equitable form of trade-off, there is still the issue of whose work is it.

> *"Yeah, like my girlfriend wrote some of my IEP essays. But, yeah, I help her with chemistry and math so it's fair." (Sultan, interview 2)*

Students also self-reported anxiety about composing a thesis or dissertation and in Sultan's case he chose a particular degree program because it did not require a thesis. He said

> *"Yeah, but I am not doing thesis. I am just taking Master of Engineering, not thesis, because I am not planning to do PhD cause I don't like want to write one." (Sultan, interview)*

In other words, one way of dealing with a large piece of writing is to avoid it altogether. Another approach seemed to be finding substantial help to cope with the challenge of writing. For instance, Abdulhady said

> *"Yeah, I'm feeling okay about thesis because I can get [someone] to edit my thesis right"? (Abdulhady, interview)*

Abdulhady told me that his major professor expected him to hire an editor or go to the university writing center. He was not the only student who had received this type of message from his major professor. Mohammed remarked

> *"The most important thing for me to finish this degree I think is writing. Writing my dissertation will be hard. My major professor says get an editor or go to writing center for editor." (Mohammed, interview)*

It seemed as though the challenges of writing might be overcome with different forms of help, but from whom might this help come from?

5.7.4 The Responsibility of Teaching Writing

One of the surprises that came out of this study was the question of whose responsibility it might and should be to teach English writing to engineers. From the data, t is unclear, whether it should be under the purview of a college of engineering or in an English department. Below are key findings:

1. An undergraduate technical writing course is offered by the English department, yet its quality and relevance to engineers was questioned.
2. Faculty from the IEP and the English department may or may not have

the expertise to teach writing to engineers. In addition, some engineering faculty was unaware of the IEP's graduate level 6 curriculum.

5.7.4.1 An Undergraduate Technical Writing Course is Offered by the English Department, yet its Quality and Relevance to Engineers was Questioned

I found that an undergraduate technical writing course is offered by the university out of the English Department, yet faculty had varying opinions of its usefulness for graduate students. As one engineering faculty member commented on the required undergraduate technical writing course offered by an English department,

> *"I encourage actually my graduate students as well to take that class. I don't know if this is appropriate here or not, but the rumors about the English tech writing class is that it is very weak. It is not beneficial. That's what I hear from the students, but it's better than nothing." (engineering faculty focus group 1)*

This brought up the issue of quality of writing instruction. Engineering faculty said the problem had been addressed with the addition of a technical writing course in the English department, but the caliber and relevance of the course to engineers and engineering is disputed. In other words, it seemed that engineering faculty were aware of their students' issues and problems with regard to writing, but "a better than nothing" approach clearly demands that we consider who or what might help students learn to write well in English, much less who should be responsible.

5.7.4.2 Faculty from the IEP and the English Department May or May not Have the Expertise to Teach Writing to Engineers

However, at the participating university, the issue may boil down to the fact that neither English department faculty nor IEP faculty were familiar with the writing engineers

need to be able to do. When asked what they knew with regard to the types of writing engineers have to do, IEP faculty had the following to say

> *"Somewhat familiar, but not very well!" (IEP faculty focus group 2)*
>
> *"Are you kidding? I'm an English teacher. I have no idea!" (IEP faculty focus group 1)*
>
> *"They want to incorporate other people's work into their own writing as a basis for their own engineering. They have to summarize other's work and synthesize." (IEP faculty focus group 1)*

This absence of understanding suggested that the IEP teachers may need the assistance of engineering faculty in order to prepare students for their discipline-specific writing. This again begged the question of whose responsibility it is to adequately prepare these international graduate students for writing on-the-job in engineering. On another level, I found it surprising that some of the engineering faculty were unaware of the IEP level 6 graduate preparatory curriculum. As one faculty member remarked

> *"I've never heard of IEP, but you can encourage them to do that, I guess. But how you prepare is, as I said before, it's all practice." (engineering faculty focus group 1)*

Still, where does this "practice" come from? At some other universities, this writing "practice" comes from the experts: engineering faculty. In this case, the responsibility of teaching writing and providing writing "practice" rests on the shoulders of those who know it best.

Interestingly, other universities have shifted the responsibility of teaching writing to the engineering department. For instance, the University of Southern California's Viterbi School of Engineering teaches three undergraduate and one graduate course in in writing specifically for engineers (USC, 2013). In fact, the University of Southern California made

this choice based on industry input that engineering graduates needed to be prepared to write on-the-job (USC, 2013).

5.8 Conclusion

In summary, from the contextual data we learned that Saudi Arabian engineering graduate students needed to be able to write well in English. It is unclear how much writing instruction and how much writing took place in graduate-level engineering courses at the participating university. Engineering faculty found that integrating writing into coursework could be difficult. We do know that the IEP level 6, which three student participants attended was writing intensive and offered step-by-step writing instruction for graduate students, yet IEP faculty may not have the expertise to teach writing to engineers. In addition, the writing center staff, which had a graduate writing consultant, offered a graduate writing support group, yet none of the participants of the group members were international.

From the data specific to Saudi engineering graduate students, we learned that common experiences existed. Still, each individual's unique experiences came out of the data too. One common experience which emerged strongly was that students were living in two cultures: a Saudi culture and American culture. That is, participants drew strength from having their families in the United States. Nevertheless, this presented challenges for some participants such as Abdulhady, Sultan and Muamer. Other participants, such as Hussein, were more fully immersed in American culture possibly from prolonged, increased exposure to Americans. In other words, English mastery is influenced by exposure and family. Specifically, participants whose families encouraged them to learn English or used more English in the home were more comfortable with their English than those who used more

Arabic or were less encouraged to learn English in Saudi Arabia. In consideration of the way English was taught in Saudi Arabia, the teacher-centered method of instruction influenced all participants' understandings of classroom instruction in the United States. All participants critiqued their educational experiences in Saudi Arabia, but in different ways. Mohammed, for example, said he would not have learned the way he did without his experiences in Saudi Arabia. And while all participants believed that socialization helped them learn English while in America, not all participants arrived with the same English language preparation. Muamer, for example, attended private schools in Saudi Arabia which all participants thought provided higher-quality instruction than public/government schools. The other four participants attended public/government schools. Not surprisingly, those who had attended the IEP at the university, Abdulhady, Sultan and Muamer, believed their English was better other international students who directly entered the university through an English placement test. Still, all participants said that English was important to them, but to varying degrees based on their unique individual experiences on-the-job in Saudi Arabia, at Saudi universities and based on other individual experiences. Interestingly, four of the five participants reported needing help with their English writing and three of the five admitted to using coping strategies to complete required writing assignments at the participating university. Finally, the data leaves some questions such as whether or not students fully understand faculty's expectations of writing requirements and whose responsibility it should be to teach writing.

CHAPTER 6

Conclusions and Implications

6.1 Introduction

In order to understand the major findings of this study, it is important for the reader to recall that the purpose of the study was to better understand Saudi Arabian engineering graduate students' self-perceptions of their English writing, how they value it, as well as what promoted the development of these self-perceptions. In addition, how self-perceptions match-up with engineering industry writing standards and the writing students do in their graduate engineering programs was of interest. To understand not only the connection between industry writing and writing in graduate engineering courses, but also the ways in which these students' self-perceptions of English writing developed, a brief summary is offered.

From this qualitative case study, we have learned that Saudi engineering graduate students' self-perceptions of English writing arose from social, cultural and educational experiences in Saudi Arabia and in the United States. Students' self-perceptions of English writing and its importance are bound by the contexts in which the self-perceptions developed. These contexts include not only their experiences in Saudi Arabia, but also their experiences at the participating university in the IEP, graduate engineering courses, the writing center and their outside of class socialization. Through this study, themes emerged based on data collected within these different contexts. Through a deep examination of the themes, the research questions can be answered.

6.2 Research Question 1

We begin with research question (RQ) 1: What self-perceptions of English writing do Arab engineering graduate students report? Generally speaking, the results relevant to this query indicated that for Saudi Arabian engineering students, English writing is important however they also reported that they needed assistance with their writing. In other words, two themes emerged from the data that directly addressed this research question: English Writing is Important and Help Me with My Writing.

6.2.1 English Writing is Important

That English writing is important to Saudi Arabian engineering students is clear. However the degree to which this important varies from individual to individual. Experiences and understandings that played key roles in individual understandings include the following:

- Writing in the engineering industry
- Writing in other graduate programs where English was the medium of instruction, Using Arabic and/or English at home and receiving support from family while at the participating university
- Writing in the IEP
- Interacting with and, for some students, publishing with graduate engineering faculty

In consideration of the fact that all student participants self-reported that English writing was important based on the prior experiences above, it is also essential to understand that they also reported varying degrees of confidence in their ability to write well in English. In other words, some felt that they were more equipped to write at the graduate-level than others. What follows is a brief overview of how English writing came to be important to each

student and a discussion of how they understand their own English writing proficiency. We begin with Abdulhady.

For Abdulhady, his experiences publishing engineering articles in Arabic and his English writing training in the IEP play into his understanding that English is important to his future. In fact, Abdulhady was only able to study in the United States because he had written and published articles in engineering for his employer in Saudi Arabia. Since he had published these articles, his employer had given him the opportunity to earn a graduate engineering degree in the U.S., yet he was not able to speak or write in English when he first arrived in the U.S. He entered the IEP at beginning level 1 and went all the way through the graduate preparatory level 6. Now, he believes that his English is much better than it was as a result of the IEP, yet he is still uncertain of whether it is good enough to finish his degree program without outside assistance. For Abdulhady, English was important because without it, he would not be able to enter or complete his graduate engineering degree program.

Mohammed, like Abdulhady, was also challenged by English writing, but both men felt English writing was important for the same reasons: degree program completion and the expectation that they would be writing in English on-the-job when they returned to Saudi Arabia. Clearly, Mohammed recognized the importance of English writing and he told me that he was asked to write regularly for his graduate engineering coursework at the participating university. He also told me that had to work very hard to write in English. However, despite Mohammed's strong work ethic and the support of his wife who was also at the participating university with him, he did not feel confident in his English writing. For Mohammed, his lack of English writing during his Master's program in Australia is one explanation for his self-perception that he is not a good writer. His lack of confidence in his

English writing may also be due to a lack of social relationships in the U.S. especially considering that Mohammed had not yet been assigned a major professor. As a student, he was isolated. Since Mohammed had very little social interaction among peers or faculty, his ability to master English writing might have been slowed. Still, he knew that writing was important because he had worked in the field of engineering. Nevertheless, he had not had the opportunity to practice his English writing as much as other participants such as Hussein.

Like Mohammed, Hussein knew English was important because of his work experience in Saudi Arabia. However, unlike Mohammed, Hussein had written a great deal before he entered the participating university. He had a master's degree in engineering from George Washington University (GWU). Hussein exhibited a very high degree of confidence in his English writing ability and had written a thesis and published several articles in English with faculty at GWU. He had clearly received a great deal of English writing socialization at GWU. This socialization or what Belcher (1994) calls "apprenticeship" into English writing for engineering is evidence that a strong community of practice could be a predictor for degree program success with regard to writing. In addition to his writing socialization at GWU, Hussein took pains to practice his English, and had some American friends. His wife had attended the IEP and was doing a master's degree in economics, so English was important to both of them. Hussein was confident in his family's future and the fact that he would write on-the-job post-graduation because he had done so in Saudi Arabia previously. He also understood faculty expectations because of his experiences at George Washington University, which is something other participants struggled with.

In contrast, Sultan did not understand faculty expectations and he also did not see English writing as being very important. His understanding of English writing as being less

important than other student participants might be partly explained by his previous work experience. When he worked as an engineer at a desalination plant in Saudi Arabia, he did not have to write much. In addition, in the IEP at the participating university, Sultan received English writing training, but he likened writing in English to a formula and, to some degree, tried to avoid writing. He conceived of writing as a hurdle he had to get over to get into his graduate engineering program. In fact, he took the IELTS, passed it and entered his graduate engineering program having never finished the IEP. Contributing to his avoidance of writing was his relationship with his major professor. He got the message from his major professor that he should not talk with him about anything, including writing, unless he really needed to. For instance, Sultan's self-perception that he is "bugging" his major professor to ask for help reflects the findings of Belcher's (1994) study on the apprenticeship approach to academic literacy. Belcher (1994) study showed that increased legitimate peripheral participation, a theory that equates learning with increasingly greater involvement in a sociocultural community, fosters greater academic literacy. In this case, the fast that Sultan's major professor does not want to talk to him indicates that he has minimal, if any, legitimate peripheral participation, which prevents him from improving his writing.

Similarly, Muamer's understanding of the importance of English writing came partly from his major professor and his experience running his own company where he had had to hire people to write in English. He thought English writing was important because his major professor had emphasized that to him when he was getting ready to write his dissertation. In addition, he chose to enter the IEP partly because he knew he needed to improve his writing even though he had attended private schools in Saudi Arabia, which made him feel that his English was better than those who had attended public schools. Although Muamer believed

his English writing had improved, he also believed it was still going be hard to write a dissertation. However, Muamer had built a community of support for himself and his English while at the university. He had developed a home-away-from-home family at the participating university and this contributed to his sense of community while there. Although he saw value in his experiences learning to write in the IEP, like others, he recognized that his challenges with writing were not over.

Clearly, Saudi engineering graduate students differing self-perceptions of the importance of English writing to their futures is influenced by a variety of factors. Their varying understandings of important could be explained by culturally embedded values of writing. For instance, Smith's (2007) research examined the cultural side of academic literacy and found that international graduate students' drive to pursue a graduate program is linked to their desire to produce professional academic work in English as they simultaneously negotiate their understanding of writing. Thus, as social relationships change, students' understanding of the importance of English writing and their confidence in their own writing may also change.

6.2.2 Help Me with My Writing: Transferring L1 to L2 Models

The theme of needing help with writing helps answer RQ1 as one of the ways that students came to perceive English writing as important. In this study, students who sought help with their English writing did so in order to move forward in the IEP or in their graduate engineering courses underscoring the fact that without proficient English writing, they would not succeed at a U.S. university. According to Pennycook (2001), international students might copy language from different texts in order to cope with their challenging learning situations and busy schedules. However, it could be argued that plagiarism is, simply put, a

part of learning to write in English and, as such, should be tolerated (McDonnell, 2003). In this case, Saudi Arabian engineering graduate students sought help through plagiarism or other outside assistance as a way to deal with their weak writing skills by transferring L1 to L2 models.

More specifically, three different student participants, Sultan, Abudlhady and Muamer, all admitted that they had received outside assistance or plagiarized in order to cope with the rigorous demands of writing in English at the university. We can see why they may have considered plagiarism a choice if we consider what is known about the activity of using the work of others in their culture. That is, the coping strategy of plagiarism may, to some extent, be based on students' L1 writing practice Arabic that what we consider rote memorization and copying, perhaps a form of plagiarism in the US, is a widely accepted and common practice (Prokop, 2003). This signals a cultural disconnect.

An example of this disconnect was when Sultan sought outside assistance with the demand of English writing when he was in level 5 in the IEP. He asked his American girlfriend for help editing his papers and, in turn, he helped her with her math homework. As previously discussed, he understood writing as less important than other student participants and, as such, one way to avoid writing was to find help with it. From a sociocultural perspective, social relationships such as the one between Sultan and his American girlfriend take on a different dynamic when it comes to assistance with writing and acculturation. What Sultan may perceive as an acceptable exchange such as assistance with English writing for assistance with math, American professors may frown up.

Similarly, Muamer was warned by his major professor not to seek outside assistance with writing or not to plagiarize, yet he admitted he had done so in the past. He said

> *"Well, yeah, I just needed to get the paper done. I do what I have to do to pass. Sometimes it means breaking a few little rules. No big deal, right?" (Muamer, interview).*

Indeed, Muamer admitted that he would not be able to write his dissertation by himself and that he needed help with writing in order to finish his graduate degree program even if it meant "breaking a few little rules." We can see that writing practices in America, such as paraphrasing and citing sources, may be expectations that conflict with Saudi writing practices. In Saudi Arabia, paraphrasing and citation are not required (Prokop, 2003). In this case, plagiarism might be considered as a transfer of L1 to L2 cultural models and a coping strategy at the same time. As Abdulhady remarked

> *"Oh, yeah and you have to write it because it is something bad if you cheat. For me, I just use English, but sometimes I have to just copy from the source 'cause I can't write it myself. I did that in IEP a few times just to pass." (Abdulhady, interview)*

We can tell that Abulhady recognized he should write in his own words, but he felt unable to do so. He relied on plagiarism to complete a paper in level 4 of the IEP so that he could pass that level and move on to the next, one step closer to his engineering program. In fact, it seemed that he was willing to take what might be considered as extreme and risky measures, doing whatever he felt was necessary, to finish the IEP and get into his graduate engineering program even if it meant plagiarizing; something he knew was not acceptable at a U.S. university.

As Pennycook (2001) puts it, "the borrowing of words is often discussed in terms of 'stealing,' of committing a crime against the author of a text" and "originates in the peculiarly

Western conjunction between the growth of the notion of human rights and the stress on individual property" (p. 14). Yet this view of plagiarism is not shared by everyone. For example, Saudi culture claims that copying another author's words is widely accepted and even considered a compliment to the author (Prokop, 2003). Yet many students know they are committing a serious academic offense when they plagiarize (McDonnell, 2003). However, some students do not realize they have done anything wrong. Regardless, it becomes clear that succeeding in the IEP and in graduate engineering courses necessitates English writing proficiency.

6.3 Research Question 2

We can see that students' reported self-perceptions of English writing varied widely based on a variety of sociocultural factors. To answer RQ 2, what fostered the development of students' self-perceptions of writing, it is relevant to consider prior education and experiences as well as social and cultural relationships. Four themes emerged from the data in terms of the development of students' self- perspective on their current English writing:

1. A critique of English education in Saudi Arabia
2. An understanding of writing based on engineering industry working experience
3. Living in two cultures simultaneously
4. Communities of practice and support groups as well as advisor-advisee relationships

Of the four, the theme that emerged most strongly was students' critique of their educational experiences in Saudi Arabia.

6.3.1 Critique of Education in Saudi Arabia and Living in Two Worlds

Students seemed to have an elevated understanding of American education and believed that they received poor English writing instruction in Saudi Arabia. In part their self-perceptions of English writing, and how they value learning to write well, stem from their educational experiences in Saudi Arabia. With regard to these educational experiences, it is important to understand how Saudi engineering graduate students learned to write and why they critique that learning. We can begin to understand the students' critique of writing instruction based on the "leading activities," (Vygotsky, 1978; Tulviste, 1991). Recall that a leading activity influences development since it is one in which during which most new cognitive and social development occurs (Tulviste, 1991). We know that leading activities build neurological pathways in the brain when we learn to write in a first language (Kotik-Friedgut, 2006). In fact, learning to write is so complex that multiple functional systems combine to develop a "writing brain" (Berninger & Richards, 2002). These existing neurological pathways for L1 writing, structured by leading activities in the L1, impact psychological functioning, or the way we learn to write in a second language. In other words, new leading activities might act as catalysts to restructure psychological functioning for writing in a second language (Arbib, 2002). This becomes important because we know that leading activities students experience in their first language as children impact how they learn as adults (Collignon, 1994).

Thus, as Bourdieu (1990) explained, the way we learn in childhood is strongly connected to the way we attempt to learn as adults and, in many cases, the process of learning how to learn can take years of schooling to change. Indeed, it may be that students transfer their ways of coming to be writers from first language to their second language

(Hudelson, 1986; Peyton & Seyoum, 1989). Therefore, the leading activities used for writing development in Saudi Arabia, including dictation, imitation, memorization and grammar-translation, influence the way that Saudi engineering graduate students learn to write in English and, in turn, influence their self-perceptions of English writing. We can understand Saudi leading activities through Prokop (2003) who wrote that, "analytical and creative thinking [in Saudi Arabia] play second fiddle to an educational system that relies heavily on memorization" (p. 201). In other words, these Saudi leading activities are in sharp contrast to socially situated learning and Vygotsky's notion of what constitutes good language teaching practice. Vygotsky (1978) thought that language teaching should be organized in such a way that reading and writing involved meaning and purpose with a collective group so that learning would be a social practice. That is, the grammar translation method used to teach English in Saudi Arabia is part of the reason why students struggle to learn to write in English. In addition, the L1 literacy practices based on the Qur'an is how students make sense of learning to write in English (Prokop, 2003). Students' experiences with teachers in Saudi Arabia also contribute to how Saudi Arabian engineering graduate students understand interacting with faculty at U.S. universities and colleges.

From students' L1 lens, in Saudi classrooms, the teacher is the ultimate authority and questions are not encouraged (Prokop, 2003). As such, the authority in the Saudi classrooms might play into how Saudi students behave in U.S. classrooms and how they understand student-teacher interactions. This is important because we know from Bakhtin (1986) that discourse that is authoritative must be acknowledged, but discourse that is internally persuasive encourages individuals to co-construct knowledge to solve problems together. Discourse in Saudi school could be described as authoritative and that is where students were

taught not to question or interact with the teacher. Gee (1989) argued, “All discourses are intimately related to the distribution of social power and hierarchical structure in society” (p. 20).

With respect to the distribution of social power, we can look to Freire to understand how a teacher-centered educational system might have impacted Saudi Arabian engineering graduate students. Freire (1977) explained that literacy can empower learners and argued against the ‘banking’ model of education, which held that teachers deposited knowledge into students. The Saudi Arabian system might be considered such a system. In response to these types of educational systems, Freire instead advocated for a ‘consciousness-raising' form of education which valued students' prior knowledge (1977, p. 48). In his text, he encouraged people to learn to "read the word and the world," so that people could come together to solve their own problems (Freire, 1977, p 153). However, for Saudi engineering graduate students who may come from a banking model of education, this poses a challenge. They have internalized a teacher-centered authority whose discourse, in Saudi culture, cannot and should not be challenged. For students who arrive in the United States, this might make it hard to interact and co-construct knowledge with a faculty member at an American university or college. For example, the common American practice of a faculty member and graduate advisee jointly publishing a paper might prove to be a challenging endeavor for an Arabic speaking student. In other words, the ways Saudi engineering graduate students come to understand not only English writing, but also a U.S. university or college, is through their L1.

6.3.2 Understanding Writing Based on Industry Experience

Yet not all participants echoed the need to be able to write in English on-the-job and some felt worried about what might happen after graduation. For example, Sultan, who had

previously worked in a desalination plant perceived English writing in Saudi Arabia as unimportant. He remarked

> *"Like in e-mails, like reports, but it's not that big deal, because it's just when you are used to it, it would be like you just change the information, or number of report, these things. I wrote lots of reports when I was in, it wasn't big deal, it was like a big deal the first few months, but then after that I just know like what I have to change this. This is what's wrong with this equipment, so, yeah." (Sultan, interview)*

Mohammed, who worked briefly in industry, commented that

> *"As in computer fields, even in Arabic talking institutions or government we still use English. For me, English writing is important because I use this language in my job and any place where I am, shopping, airport, that's important. I'm an okay writer. Not great. I kind of worry about it." (Mohammed, interview)*

Hussein, on the other hand, understood that he would be expected to write on-the-job.

> *"We still use English in specific and technical terms. Even when (pause) in the past two years when I got back to Riyadh after GWU, I was assigned as a technical engineering manager in the computer department. So whenever I try to write a proposal or try to purchase some equipment for the government, I write a proposal in English." (Hussein, interview)*

Hussein had had years of work experience on the job and had been exposed to English writing. Mohammed had also worked in field in Saudi Arabia and knew he would use English in either situation, but because of his political beliefs, he was unsure of whether or not he wanted to return to Saudi Arabia. He said that

> *"In computer fields, even in Arabic talking institutions or government we still use English. I'll use it if I go back or stay here, but I didn't make decisions yet. But sometimes I wish I don't go back to Saudi Arabia. Honestly, because the situation needs a lot of work. It needs a lot of patience, it needs a lot of, you know, people who are willing to stay there and work and change mentalities and fight. Honestly, I don't want to spend my life like that. I only have one life, so I want to spend it peacefully and happily." (Hussein, interview)*

Hussein was not the only participant who was unsure of whether he wanted to stay. Sultan commented

> *"Like, really I'm not sure to now because my friend he just graduated from civil engineering department, with 4.0 GPA, he has like American passport, but he is originally from Saudi and he like, he is still looking for a job. He just graduated from, I remember like, Bio Engineering or something and then he like completed Master degree in civil engineering and finished Master degree in Engineering Management and he is looking for a job for like almost like 1 year." (Sultan, interview)*

We can see that, to varying degrees, student participants understanding English writing based on their exposure to it on-the-job in Saudi Arabia.

6.3.3 Living in Two Worlds

The other theme that emerged, which had less impact on English writing, was students' tendency to live in two worlds: a Saudi world and the world they had created for themselves at the participating university in the United States. The worlds that Mohammed, Abdulhady and Hussein, created for themselves at the university included their wives and families and they each took a different approach to using English and Arabic in different environments. Sultan, on the other hand, found himself split between the Saudi culture his family wanted him to remain a part of and the marginalization he felt from his girlfriend's American family. Like Sultan Muamer, spent time interacting with Americans and Saudis alike, but unlike Sultan, he felt comfortable with both. At the participating university, Muamer created his own home-away-from-home family.

To understand living in two worlds, we can look to Riazi (1997) who found that mastering English is an "interactive social-cognitive process" based on the social and contextual factors of students' departments and their home lives (p. 105). We can see that each student understands English writing to varying degrees based on the worlds or contexts in which they live while at the university. In fact, this social-cognitive process to master

English begins for Saudi engineering graduate students by interpreting the sociocultural context of the university system in America when they first arrive. For Saudi engineering graduate students living in two worlds, they will naturally make sense of an American university environment through their L1 lens. Gradually, over time at the university, Saudi engineering graduate students interpret the environment through their L1 lens and are eventually socialized into writing practices in engineering. Students learn to write in English by imitating others, then working in cooperation with others and later develop the ability to write independently (Vygotsky, 1978).

6.3.4 Communities of Practice

Learning to write in English in the discipline of engineering is a social practice. As Casanave and Li (2008) explained, social, educational and cultural systems are at work in the constant construction of our understanding of literacy. In this case, we can see that the ways students handle living in two worlds impacts their understanding of English writing. From a sociocultural perspective, a new international graduate student may have limited or no access to legitimate peripheral participation such that he is outside of COPs in one culture, but inside them in another (Lave & Wenger, 1991). In other words, the communities of practice Saudi engineering graduate students engaged in were in and out of both worlds.

From Lave and Wenger (1991), we know that communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. In this study, communities of practice appeared to be present in the IEP and in the writing center, but not in graduate engineering programs. We can understand the local Saudi community as a support group. Potts (2005) defined a support group as groups in which members who have a common experience support one another. Given the

COPs and support groups present, it might be that the strongest COPs to influence Saudi engineering graduate students' understanding of the importance of English writing are ones that students still have access to in Saudi Arabia.

We know that it is through active participation in communities of practice that new Saudi graduate students might become members of the discipline of engineering, yet when no strong communities of practice exist, one wonders how students do learn to write in English (Lave & Wenger, 1991). That is, students' ability to master writing is directly influenced by their sociocultural experiences: co-participation, legitimate and peripheral, in communities of practice (Lave & Wenger, 1991).

In order to learn to write well in English, Saudi engineering graduate students must have access to experts in the COP who are the gatekeepers to the knowledge of being able to write in the discipline of engineering in English. Consequently, increased legitimate peripheral participation in a COP over a longer time period means a higher degree of mastery in English writing for Saudi engineering graduate students. Considering this understanding of communities of practice, COPs identified in this study include:

1. The IEP's program's women across cultures program
2. The writing center's graduate writing support group

The IEP women across cultures program is a good example of a community of practice. It encourages legitimate peripheral participation in collaborative, planned activities since it regularly brings together international women and children and encourages problem-solving and community-building. For example, the IEP offers activities through its women across cultures program that aim to women involved in the larger university and local community. One IEP faculty member said this program provides activities such as

> *"Farmer's Market trips, hiking to Palouse Falls, pumpkin carving, Christmas parties at a teacher's house. In the last few years, not as many students come. Oh, I forgot something. Soccer, we started a soccer league. Ski trips, bowling, trips to Seattle, holiday events, Thanksgiving, Christmas dinner, pumpkin parties We feel like now they are trying to connect more with the university activities, getting the students more involved with activities that are already happening. We are doing the passport program, which requires students to go to different university offices together to find out how they solve problems once they finish IEP." (IEP faculty focus group 1)*

Like the IEP women across cultures program, the writing center graduate writing support group is an example of a community of practice. It meets regularly, has agendas that cover writing topics and offers a forum to engage in the practice of writing as a community. In this graduate writing support group community of practice, members have the opportunity to come together to help each other become better writers. As a writing center staff member acknowledged

> *"A great way to improve your writing is to talk about it with other people who have different skills than your own. In this way, the graduate writing support group allows students to help each other with conventions, publishing, grammar, or whatever it is they are challenged with. It was set up as a resource. It was set up as a community of support." (writing center interview).*

This graduate writing support group COP is an opportunity for socialization into graduate writing practices, yet none of its members are international graduate students.

However, it is important to note that Hady, Sultan, and Muamer, three of the five student participants, mentioned the local Saudi community, a support group, as being a part of their socialization at the participating university. Abdulhady, for example, often has Saudi students and families over to his house and Sultan mentions that his first friends at the university were from Saudi Arabia. Sultan remarked that

> *"I felt like really lost when I got here. I mean, like, I knew nobody. My [Saudi] friends heard that I was coming to the university and they arrived at my dorm the day I got off the plane and like, they are pretty important to me even no. We helped each other with everything-including writing." (Sultan, interview).*

The local Saudi community supported Sultan when he arrived in the United States. We can also see that they helped each other with writing in English. As Muamer said

> *"I know it's hard for [Saudis] to learn to English and definitely writing, but they do eventually and we all help each other. Actually, we all come together for our holidays as one group. It's hard to be alone on Ramadan, for example." (Muamer, interview).*

This excerpt shows that not only is the Saudi support group important as a form of writing support for some people in the IEP, but it is also important for cultural holidays such as Ramadan, which is the most important Islamic holiday (Prokop, 2003).

In consideration of these COPs in the IEP and the writing center, and the local Saudi community support group, it worth discussing where COPs were not present: in the participating university's college of engineering.

6.3.5 Advisor-Advisee Relationships

In engineering, the vast majority of socialization at the graduate level, based on student-participant and faculty participant reporting, occurs between major professors and their graduate advisees. This kind of one-on-one interaction, especially with regard to writing, helps form communities of practice as defined by Lave and Wenger (1991). In this case, when asked about how graduate students are socialized into writing in the field of engineering, engineering faculty provided me with a laundry list of professional organizations, but none of the students in the study belonged to any of them. They also did not bring up the topic of supporting students' writing. One engineering professor said that his department's way of supporting international graduate students succeed included helping them get a Social Security Card.

> *"Well you have to help them the first, uh, two weeks, and sometimes to the extent you know, I would take them to Lewiston to get their Social Security number. Because otherwise they do all this and they find out all they have to go, they don't know how to get to Lewiston. Although those guys come over to Moscow now. And then suddenly*

> *they don't get paid for two months just because of that. So my rule is always the first day they come say "Let's go to Lewiston." And we have lunch there, talk during the drive, it's a half a day and then get all the paperwork done because everything else after that can wait. Get yourself a social security number. Um, so they can get paid." (engineering faculty focus group 2)*

When asked if they interact with students outside of the university, two engineering faculty members said

> *"Not really. I want to, but I just don't have time for it." (engineering faculty focus group 1)*

> *"No, I have been here at the university for twenty-two years. I did that probably for the first 5 or 6 years, occasionally. But my wife is really struggling health wise for many, many years. For the last sixteen years, she has been struggling significantly. Before that, a little, but not now. I remember for my first students I made a big party in my backyard. There is no energy for that anymore." (engineering faculty focus group 2)*

And as another engineering faculty member remarked

> *"I always situate [my advisees] in a lab. Mostly it's find them a space. And they'll get to know people around that space. I used to use most of my students went through environmental technology just because that's where all the equipment was, that's where all the people were. They were like-minded people so instantly they're in a community. And what they came over here for, in my field, is to look at some of the more technical aspects where they've got equipment where they can learn new procedures before they just zero in on any lab that's got great facilities. So that's a lot of what I used to do, but not so much these days. It is extra work to take on international students" (engineering faculty focus group 1)*

Still, students have very positive impressions of their major professors, perhaps signaling a disconnect between faculty and student perceptions. For instance, Muamer said that his major professor is

> *"So very helpful. So, we are trying to publish a paper we are working on it right now. So far, he is very, very helpful. I can't put it another way." (Muamer, interview)*

Hussein's perceptions of his major professor echo Muamer's.

> *"So far I haven't published any papers with him but we are working on one paper right now. As I understand from him we think of what we are going to do first and then we think of how to accomplish these ideas that we came up with. Then after that,*

> *we come up with results and these results will be translated into a paper. At that stage, we have to put the structure of the paper. Once we have the structure of the paper, if I'm co-authoring with anyone. Whether the professor himself or other student it will be a joint responsibility to write these sections. He might take 2-3 sections, I might take 1-2 also. So it will be a joint responsibility." (Hussein, interview)*

These comments demonstrate that both Muamer and Hussein, who have years of writing practice, get along well with their major professors and understand that person as someone with whom they can publish. This one-on-one interaction and creation of a publishable paper in English could be considered socialization into the practice of writing. In addition, students reported that their major professors helped them as students. For instance, Abdulhady remarked that

> *"Oh, yeah, so helpful and he is kind like that. Because he is a department chair, this professor get a high position in this department, I think that's the best educational experience." (Abdulhady, interview)*

Abdulhady also greatly respected his major professor because of that person's position in the department as a high- ranking academic. On the other hand, Mohammed showed concern with respect to his major professor and this was because, after three semesters at the university, he still had not been assigned a permanent advisor.

> *"Well, this is my third semester, so I am still getting used to the place. They have assigned you with an initial supervisor and they told me that later, then committee of the engineering faculty will assign you with a permanent advisor based on your like interests, like research interest. So, before that, I have a research interest that I have to change now because they don't have a major professor that he is interested in the same area, the one that I am interested in. So I am trying now to find something else to work with that will work with the same interests of the faculty here Well, I think I am comfortable with the class yes, but I think I'm having problems with, my feeling now is like I am not very compatible because I really don't know if I am going to have a major professor that will be okay to work with. I think this stress if affecting my performance and my whole idea of coming to the university." (Mohammed, interview)*

Mohammed's lack of a designated advisor greatly impacted confidence in being at the university. In fact, his lack of advisor is causing him to reconsider being at the university in the first place.

Similarly, Sultan's advisor, with whom he only minimally interacts, makes Sultan feel as though his advisor is more interested in his own research than he is in Sultan's needs and challenges. When discussing a personal problem regarding a living situation, Sultan turned to his major professor for advice. He commented that

> *"He is really cool, but he is an old guy and like he is different and he try to give me more courses, more than I need and then, like he helped me a lot with my situation about moving from the previous apartment. So he is really helpful, but he is like a little crazy about metals. God, he is like he is every day in his lab from 6 a.m. or 7 a.m. every day. Most of times like I think we won't be friends because I want to enjoy my life and he just like stay in his lab the whole day, yeah." (Sultan, interview)*

It is clear that students see advisor-advisee relationships as being important in some regard, whether it be in practicing writing or helping solve problems. What is unclear is what faculty advisors understand as what students may need and also, how they might benefit from advising international students.

6.4 Research Question 3

As we come to understand how prior education and social and cultural relationships played into the development of students' self-perceptions of writing, it becomes important to consider how Arab engineering graduate students' self-perceptions of their English writing match-up with industry standards. RQ 3 asks us to consider students' self-perceptions of writing versus the engineering industry's writing standards.

6.4.1 The Engineering Industry and Students' Self-Perceptions

Based on 46 job descriptions from the top ten employers of engineering graduates from the participating university, writing on the job is an expectation for nearly all engineering positions. In fact, it is an expectation in both the United States and in Saudi Arabia since 44 of the 46 descriptions mentioned English writing as a job requirement and, of the 46 job descriptions collected, half were from the United States and half were from Saudi Arabia. This overwhelmingly demonstrates that engineers will need to be able to write on-the-job.

Nevertheless, students have varying degrees of perception about how much writing they will do once they graduate and obtain employment in the field. As Muamer attested

> *"The job requires a lot of writing and if I'm doing research it requires a lot of writing. Usually, they know that it will take a lot of time for me to do this, so they balance, if they cannot give me a consultation each and every month. So, they give me each six months one consultation. So, by the end if you want a percentage maybe 40 percent of my time and I'll be ready when I go back. Thank you, my God and IEP!" (Muamer, interview)*

Hussein, who, like Muamer, had a great deal of experience in the field of engineering prior to graduate study also recognized that he would be writing post-graduation:

> *"We still use English in specific and technical terms. Even when (pause) in the past two years when I got back to Riyadh after GWU. I was assigned as a (technical) manager in the computer department. So whenever I try to write a proposal or try to purchase some equipment for the government, I write a proposal in English. I will do it forever!" (Hussein, interview)*

Hussein's perception that his degree from the U.S. and the writing he had undertaken during that time with the assistance of his major professor shows that he was greatly influenced by the type of "apprenticeship" he had received from his major professor and other faculty at George Washington University.

Students' self-perceptions of English writing are not only influenced by their experiences in America. They are also influenced by their social, cultural and educational experiences in Saudi Arabia. Although Hussein did not attend the IEP, he did recognize the need to be able to write. So too did Abdulhady. He commented that

> *"Because sometime they ask me to do summary. When I do the summary, what I learned like at IEP, summary you can pull your information you just paraphrase and make it easier for, you know, to understand, so I do that. When I do it, he's like you have to connect it with the lectures. Because of what I learned at IEP and what my professors are expecting me to do, I am writing better." (Abdulhady, interview)*

Sultan did not see the value of writing and likewise was still struggling to adjust and felt he was being denied access to what he needed: help from his engineering professors.

> *"Like they won't help me to feel like a good student because I like I didn't used to be ask professor questions, I am always sitting there. If I have question, like after class it's lucky. Like if he asks like we have like time, I will ask, if he won't have time, so I will go to his office hour to talk with him, but when I go to their offices, like last semester I went to this guy's office and he was like he didn't open the door. I was like just like open it a little bit. He would be like what do you want? I want to ask about the homework. Okay, what is the question? I'm like just open the door and let me sit. Wow! So, another thing with them, like when you ask a lot, you will get good grade, but it's not my culture. I talked with my advisor and he understood that. I got an A last semester, I am taking a class with him now, and I think I will get an A, but with other professors, they will not understand that." (Sultan, interview)*

It is clear that engineering industry demands writing and that students understand that writing is important, but to varying degrees. The amount of importance is based partly on experiences students have had with writing. For instance, Hussein had more experience writing on-the-job and at a university and he felt it was far more important than other participants.

6.5 Overarching Research Question

Together, the research questions build to answer the overarching question of how Saudi Arabian engineering graduate students' self-perceptions of their English writing impact their

value of learning to write in the academy and reflect their expectations for writing in the engineering industry. To conceptualize an answer to this question, we can examine language ideology and the value of English in Saudi Arabia.

6.5.1 Language Ideology and the Value of English to Saudi Arabia

Saudi Arabian engineering graduate students understand English writing as valuable, to some degree, because their country, Saudi Arabia, sends large numbers of its citizens abroad to learn English and get a degree from a U.S. university or college (SACM, 2012). In fact, Saudi Arabia invested $5.3 billion in 2012 alone to send its citizens to institutions of higher education in the United States and elsewhere (SACM, 2012). According to the Saudi Arabian Cultural Mission (SACM), the organization set up by the King Abdullah Scholarship Fund in 2005, 73,000 Saudi students are currently studying at institutions of higher education in the United States (SACM, 2012). This financial sponsorship was created to ease tensions between the western world and Saudi Arabia, but more importantly it is the goal of King Abdullah, the leader of Saudi Arabia, to create an educated middle-class in Saudi Arabia that can speak and write using English as the medium of communication for global partnerships (SACM, 2012).

Indeed, English is being used for business, education and research in Saudi Arabia (SACM, 2012). Thus, a bilingual Arabic and English Saudi citizen with a degree from an American university might have at their fingertips a global audience and greater professional opportunities than their monolingual parents did at the same age. Specifically, we know from this study that the expectation in Saudi Arabia and in the United States is that engineering professionals need to be able to use English writing on-the-job. This expectation is carried all

the way down from university-level study in Saudi Arabia, which is in English, to the English language training Saudis begin in middle school.

The importance of English to Saudi Arabia is especially worth bearing in mind given the potential shift in language ideology based on the political leader of Saudi Arabia, King Abdullah, and his mission as previously discussed (SACM, 2012). Language ideology "is the representation of languages as privileged carriers of the identity of a people" and it is socially constructed (Holmes & Meyerhoff, 2005). As Bakhtin (1981) explained, language cannot be separated from ideology. He distinguished between a nation's primary language and its division into dialects and various socio-ideological languages among social groups (Bakhtin, 1981). In the context of Saudi Arabia, different language ideologies might be a reflection of socio-economic status as a classifying factor in social grouping. The growing English, middle-class in Saudi Arabia are not only emerging as a different group from a socioeconomic standpoint, but the impact of English language ability as an economically leveraging factor suggests that language ideology in Saudi Arabia is under transformation and thus the very meaning of what it is to be a Saudi Arabian.

Consequently, considering the ideological shift, it is worth reflecting on how Saudi engineering graduate students' perceptions of the importance and value of learning English writing develops. It might be that Saudis believe English is important because they see both Arabic and the English language as important. English is important because King Abdullah understands it as the language of business and has reformed technical undergraduate and graduate degree programs at universities in Saudi Arabia, which are now taught completely in English (SACM, 2012). As such, it is worth investigating the degree to which language

ideology has guided students' self-perceptions of English writing. How might this have come to be?

The data of this study shows that student participants perceive English writing as being important to varying degrees. It is important because of King Abdullah's push for an English-speaking middle class and the scholarship funds that have sent large amounts of Saudi abroad to get American degrees. That is, this shift in sending students abroad to learn English and obtain degrees from American universities is already changing the educational system in Saudi Arabia. In turn, it is worth contemplating how culture, history and the social world might work together to form identity and to commodify English writing proficiency as a mark of success (Resnick, 1991).

Therefore, as we begin to see a shift in language ideology in Saudi Arabia and specifically how English influences the educational sector, we also may see a higher valuation of English writing. In the context of this study, Saudi engineering graduate students wanted to have Saudi English instruction adapted to fit more with the demands of American English language usage, including writing. This is reflected by the emerging themes of life in two cultures as well as students' reflection on the Saudi educational system. In addition, we saw this through students' perception that plagiarism is an acceptable coping strategy. In Arabic academic practice, it is acceptable, but not in America. Through this difference between American and Saudi expectations, we can see how Saudi engineering graduate students' self-perceptions of English writing might be connected to English and Arabic language ideologies.

This shifting ideology in Saudi Arabia, and the focus on English and academic study in countries such as the United States, may reflect a change in the importance of English in

Saudi Arabia, This change in language ideology might be why Saudi engineering graduate students have generally come to understand their educational experiences in Saudi Arabia the way they have. Thus, the importance placed on English in Saudi Arabia may shape the ideologies of Saudi students since they are required to use English during their university student in Saudi Arabia, on-the-job in Saudi Arabia and at U.S. institutions of higher education.

6.6 Implications

The findings of this study may inform institutional and instructional decisions at U.S. colleges and universities as well as the larger context of the needs of the growing number of Saudi engineering graduate students across all U.S. colleges and universities. From a university standpoint, findings may inform international student support services. With respect to a college of engineering, findings suggest that opportunities for writing practice, such as a regularly occurring seminar, be created and sustained along with a discipline-specific orientation for international graduate students and a review of the current structure of graduate-level education. The findings of this study also demonstrate the need for stronger communities of practice as one form of support to help Saudi engineering graduate students master English writing regardless of whether those communities are student-led or faculty-driven.

6.6.1 Implications for International Education

In the larger context of international education, this research may inform support systems for graduate-level writing. As one writing center staff member remarked

> *"The university, if we're sending recruiters to other countries to encourage students to come here, and I have not seen any discussion of what kind of increased support do*

> *we need to provide to these students. I'm amazed by it, frankly." (writing center interview)*

In other words, if a university is recruiting international students, it is relevant to consider how increased numbers of students inform support services. Given the needs of Saudi engineering graduate students, and the current support services available, the university at large could help support their success across the institution which, in turn, would increase international student retention (NAFSA, 2006). This includes funding and resources to raise awareness of a university's IEP and writing center and at the participating university, it may involve bringing back support services that were cut when international student numbers at the participating university were lower (T. Johnson, personal communication, May 6, 2013). In fact, as previously mentioned, one engineering faculty member remarked that he did not know about the services the IEP offers international graduate students. This suggests that the IEP take a more active role in advertising its services across campus departments including the university's college of graduate studies. In addition, the college of graduate studies used to offer a graduate writing course. As one engineering faculty member explained

> *"The associate dean of the college of graduate studies used to teach a course on tech writing. It was great. I would send students to it all the time. He doesn't do that anymore. Yeah. He was great. Really good, um, and people got a lot out of that course." (engineering faculty focus group 2)*

It is worth considering offering the same or a similar course again given the fact that international graduate students may arrive in the United States unprepared to write well in English (Andrade, 2011). A technical graduate writing course might serve the needs of some students, but increased resources for a writing center would also allow for discipline-specific tutoring and general English language support throughout graduate students' degree programs.

We know that the writing center at this university has a primarily undergraduate staff and only one graduate writing consultant to assist the 2,000 graduate students on-campus, 250 of which are international (R. Harder, personal communication, Feb. 11, 2012). The graduate writing support group, would benefit from additional staff with expertise in different disciplines in graduate-level writing. Additionally, the graduate writing consultant and support group are not well-known on campus. Increased funding and resources to market the services the writing center offers would help get the word out about these opportunities and would, in turn, better support all graduate students.

Also, as Angelova and Riazantseva (1999) concluded, departments on-campus and the institution itself could "offer help by disseminating important information to international [students] about the fact that writing is one of the major tools used in the U.S. educational system for nurturing and assessing students' knowledge" (p. 520). Thus from an institutional and instructional standpoint, clear expectations with respect to writing would help more students succeed since some students may not understand faculty's expectations of graduate students. This suggests the need for discipline-specific orientations for international graduate students. As such, when new international graduate students arrive, one of the first steps might be to make explicit the implicit academic expectations and specifically graduate-level writing expectations that students may have no prior social, educational or cultural understanding of.

Further, in order to help students, someone needs to take responsibility for teaching writing. A perfect example of this is when I asked if there was any graduate-level technical writing course offered for students, and the issue of faculty commitment came up. As one engineering faculty member explained

> *"You know, you talk about writing courses as such and it's really hard to have a course unless the instructor has a commitment. If it's just a course, you know, students turn up, they're happy with a C. If you do a thesis, it better be A+." (engineering faculty focus group 1)*

If no one takes responsibility for teaching writing, how might the engineering curriculum prepare students to write not only a thesis or dissertation, but also write in the genres the engineering industry demands? Newswander and Borrego (2009) wrote that graduate education should prepare students for professional and academic life through experiential research and engagement in the classroom and in the community. Therefore, the current structure of graduate engineering education at the participating university, may be worth revisiting since it might be viewed as one that prioritizes a narrow focus and depth of knowledge in a single area as well as social isolation in learning. We know from Vygotsky (1978) that learning and development do not occur in isolation, but occur in given social and cultural contexts.

The contexts in which learning and development occur for Saudi Arabian engineering graduate students at the participating university includes their advisors, friends, and family, graduate engineering courses, the IEP and the writing center along with the COPs identified in this study, but as Nettles and Millett (2006) stressed, it is the importance of the faculty-student relationship that makes the difference in graduate education. That relationship is the determining factor in students' satisfaction with their graduate program (Nettles & Millett, 2006). In this study, the five Saudi engineering graduate students interacted nearly exclusively with their major professors and with the exception of two, only for functional purposes.

To avoid isolated learning, we can look to Newsander and Borrego (2009) who suggest a COP model of learning. For those who want to pursue careers in academia, COP

learning would facilitate socialization into the necessary context: a community of engineering scholars. Developing an engineering COP might enable the college of engineering to encourage on a wide variety of mentors and peers. This might counteract some of the weakness of current practices, especially considering the isolation of graduate study as students work individually to complete coursework and research. The COP approach to situated social learning would thus connect real-world preparation to engineering graduate degree programs. According to Lave and Wenger (1991), creating communities of practice can benefit students in many ways:

> As they spend time together, [participants in a COP] typically share information, insight and advice. They help each other solve problems. They discuss their situation, their aspirations, their needs. They ponder common issues, explore ideas, act as sounding boards . . . However they accumulate knowledge, they become informally bound by the value that they find in learning together (p. 76).

It is also prudent to consider what constitutes legitimacy with respect to legitimate peripheral participation in communities of practice. Lave and Wenger (1991) discuss grass-roots COPs such as West African tailors of Yucatec midwives. Yet with respect to international students, COPs tend to be

> "centered and hierarchical, such that not all peripheral participants may be judged to be legitimate and, conversely, some participants are more central and powerful than others" (Hadena, 2006).

As such, it becomes important to distinguish between legitimate and peripheral within the term legitimate peripheral participation. That is, the implication of separating these two attributes is that it allows us to think of participants' agency in adopting alternative strategies to achieve competent participation (Hadena, 2006). For instance, Canagarajah (2003) told a story of himself and other Sri Lankan scholars, who, in spite of a lack of materials and

resources on the geographical periphery, developed unique coping strategies to competently participate in disciplinary discourse communities.

Therefore, for Saudi engineering graduate students, it is important to consider how to better involve and acculturate them into the discipline of engineering specifically with respect to English writnig so that they gain legitimacy. From this study, we know that COPs are in place, yet Saudi engineering graduate students, as newcomers, are not being given participatory roles. If they were given more participatory roles, this would increase their opportunities for English writing mastery (Canagrajah, 2003). For instance, Eckert and McConnell-Ginet (1999) found that, through focused attention to language practices and shared ways of doing things, individuals gain legitimacy in a COP. We can then consider that individuals' ways of participating in a COP may vary considerably (Hadena, 2006). Thus, it is critical for any discipline to consider how to offer opportunities for legitimate and peripheral participation.

One possible way to implement a COP with legitimate and peripheral participation into the graduate engineering programs might be through a journal club. Journal clubs are groups made up of a combination of faculty, students and possibly industry partners who meet regularly to read and discuss current literature (Newswander & Borrego, 2009). Thus, journal clubs could become a COP with an alternate pedagogy that allows students to think critically, become familiar with current literature, and practice presentation skills in a supportive way. It may also be the solution to connect the engineering industry's writing standards with graduate-level writing preparation at the participating university. Since we know that social and organizational settings play a role in mediating different expectations with respect to graduate-level or on-the-job writing, the role of universities and the strength

of their COPs is critical. Having a community of practice would enable a college of engineering to build and strengthen networks to engage in engineering scholarship for international and domestic students as well as faculty and engineering industry employers.

It is clear from the findings of this study that engineering faculty members recognize some of the benefits of having international students in their classrooms. As one engineering professor remarked

> "*I wish we had more [international students], and I think it's good that our American students interact with international students. Sometimes interactions go very well, sometimes not so well especially if we'll have a graduate student, a foreign graduate student that is a teaching assistant or laboratory assistant and then have some local kids have a hard time understanding or writing or you know communicating with that set of graduate students. We always tell them, hey you know what, when you're an engineer, you're going to work with people from all over the country." (engineering faculty focus group 1)*

If engineering graduates are going to work with "people from all over the country" and the world, then they need to have the opportunity to interact with diverse persons. That is, they need to have the opportunity to interact, through legitimate peripheral participation, with engineers in private industry as well as faculty from across their departments. A COP could facilitate this legitimate peripheral participation for new graduate students in need of writing practice.

Another way to support learning, along with the establishment of a COP, is to validate international students' first language literacy practices. For example, as Jacoby, Leech and Holton (1995) noted, the L1 rhetorical systems of students should be validated and not marginalized as being less important than English. Making faculty aware of and encouraging them to be sensitive to students' L1 rhetorical systems would create a better learning environment.

In addition, as newly arrived international graduate students begin to negotiate their professional lives in an unfamiliar and possibly uncomfortable environment, it is important for American educators to understand the contexts from which students are coming. As Canagrajah (1999) wrote

> Leaners and educators should be encouraged to become reflexive about their classroom relations since knowledge is socially constructed. Eventually, learners must be encouraged to become reflexive about themselves, - i.e. how their values, community membership, historical background, and subject-positions motivate them to negotiate language and knowledge in particular ways (p. 186).

Thus, in American university classrooms, student and faculty reflexivity should be encouraged as communities and knowledge are built together. As Lave and Wenger (1991) argued, "identity, knowing and social membership entail one another" (p. 53). In other words, we can understand the connection between learning, identity and the social world by understanding that learning encompasses social and cultural relationships (Lave & Wenger, 1991).

6.6.2 Connections to Research

As we consider the implications of this research, it is relevant to return again to the research questions. This study aimed to answer the question of what self-perceptions Saudi Arabian engineering graduate students have of their English writing as well as what promoted the development of those self-perceptions. Specifically, it sought to examine the roles of social and cultural relationships in development. Finally, Saudi engineering graduate students' self-perceptions of English writing could be compared to engineering industry writing standards.

The data from this study showed that English writing was important, to some degree, to all student participants, but the levels of importance are heavily influenced by prior history

and expectations including previous experience writing in the engineering industry. Furthermore, students needed help with English writing which sometimes led to plagiarism. In addition, the question of whose responsibility it is to teach writing to Saudi engineering graduate students came up. Also, students lived in a Saudi world and the world they had created at the participating university simultaneously. They also critiqued their educational experiences in Saudi Arabia as being teacher-centered.

Within the field of international education in the United States and specifically within the fields of engineering and Teaching English as a Second Language, it is important to consider the needs of the increasing volume of Saudi engineering graduate students. In this study, I discovered that the sociocultural contexts in which Saudi Arabian students come to understand English writing may inform the way institutions of higher education support them. Colleges and universities in the United States need to address Saudi engineering graduate students' social and cultural needs in order to give them a high-quality education and to hold them accountable to the same expectations as an L1 speaker of English.

In addition, findings of this research also correlate with previous research. As Leki (1995) pointed out, international graduate students' ability to attain academic literacy and specifically English writing, hinges on sociocultural factors such as the role of advisors, but also includes students' cognitive skill set(s), English proficiency itself, learner autonomy or self-regulation, and the ability of the university to fully support the needs of international graduate students in a climate that is welcoming to students. Furthermore, findings are similar to Riazi's (1997) study which found that attaining domain-specific literacy is an "interactive social-cognitive process" in that production of the texts required extensive interaction between the individual's cognitive processes and the social and contextual factors

of their departments and home lives (p. 105). Findings are also in-line with Belcher's (1994) study which concluded that major professors/advisors play a strong role in the socialization, language proficiency and ultimately, the success of their international graduate student advisees. In addition, the findings of this study build on previous studies by Luria (1982), Scribner and Cole (1981) showing the connection between L1 and L2 language proficiency and leading activities as defined by Tulviste (1991).

6.7 Limitations

Despite my best efforts, this study has its limitations. Some limitations come from the study design. The study only examined one population of students, Saudi Arabians, in the context of one discipline, engineering. These were determining factors in the scope of my research findings. Another limitation is that I was the sole researcher conducting this study. It is important to note that knowledge is co-constructed and, as such, a different researcher might have brought out different information from participants. An additional limitation was my inability to make contact with engineering companies directly. Further, I did not have the opportunity to talk with students' wives, families and parents nor did I have the chance to view first-hand Saudi educational practices. These limitations warrant further research in the area of academic literacy and specifically English writing for international graduate students at U.S. colleges and universities.

6.8 Future Research

This study of Saudi engineering graduate students' self-perceptions of English writing brings up a number of additional questions. One of these questions involves the connection between COPs and identity. For example, how do the identities of the members in the COPs shape what is made available to apprentices? This question lends itself to future

investigations of continuous social practice in COPs as an important clue in understanding contexts in situated social learning.

Further, since context is so important to this study, another future investigation might examine the role of gender in students' understanding of writing expectations from different authority figures. In this study, the engineering faculty was primarily male and the IEP faculty and writing center staff were predominantly female. As such, it might be worth asking what role gender plays when it comes to writing expectations. For instance, do students devalue writing if the message of its importance comes from a female authority figure? What happens with respect to authority if a student comes from a culture where females play certain roles and they are not considered authority figures?

In addition to an examination of the role of gender in students' writing expectations, it may prove valuable to replicate the study for other language groups, both graduate and undergraduate. The same study could examine other disciplines at other institutions of higher education and for different demographics of students. Further, it may be worth examining a larger population of students using a different methodology to find out what self-perceptions students have of their own English proficiency on a larger scale that could be generalizable. For instance, a quantitative methodology could examine international graduate students' self-perceptions on a far wider scale. Yet another possibility is to examine the change in students' self-perceptions of their English language proficiency over time period. In sum, there is still much to be understood about students' self-perceptions of English writing and what promoted the development of these self-perceptions.

As I share the findings of my research, I hope to contribute knowledge that is valuable not only in academic circles, but also for institutions of higher education in the

United States and elsewhere which have large populations of Saudi engineering graduate students. By providing a better understanding of Saudi engineering graduate students' self-perceptions of their English writing and what promoted the development of these self-perceptions, institution of higher education and the participating university will benefit. Specifically, colleges of engineering, the IEP, and the writing center at the participating university will benefit from understanding the needs of Saudi engineering graduate students and the ways those needs might be supported. Finally, the participants of this study benefited from sharing their experiences, triumphs and challenges with respect to writing and succeeding at a university where English is the medium of instruction.

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Appendices

Terminology/Abbreviations

The following terms will be used throughout the study:

- First language (L1)
- Second language (L2)
- English as a Second Language (ESL)
- Intensive English Program (IEP)
- Test of English as a Foreign Language (TOEFL)
- International English Language Testing System (IELTS)
- Conditional admittance: students are allowed to enter an IEP and then a university degree program once it has been determined that their English language proficiency is sufficient to enter the university or college.
- Saudi Arabian Cultural Mission (SACM)
- English for Academic Purposes (EAP)
- National Association for International Educators (NAFSA)
- Student Exchange Visitor Program (SEVP)
- Sociocultural theory: based on the understanding that human activities take place in a given cultural context, mediated by language and other symbol systems and understood from the perspective of their historical development (Vygotsky, 1978).
- Genetic method: Vygotsky defines the genetic method in four domains through which mental functioning and its development can be observed: phylogenesis of modern humans as a species, sociocultural history of human cultures over time, ontogenesis

of individuals over a life span and microgenesis or development of mental functions and processes over shorter periods of time (Vygotsky, 1978).

- Mediation: the observation that humans do not act directly on the world but instead their activities are mediated by symbolic artifacts like language and literacy (Lantolf, 2006).
- Communities of practice (COP): a group of people who engaged in social practice in a joint enterprise not limited by physical actions (Wenger, 1998).
- Legitimate Peripheral Participation (LPP): a process where novices or newcomers move from the periphery toward fuller membership through participation in communities consisting of members of varying expertise (Lave & Wenger, 1991).
- Agency: a relationship that is continuously co-constructed and renegotiated with those around the individual and the community of practice (Lantolf, 2006).
- Zone of Proximal Development (ZPD): "The distance between the actual development level as determined through independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86).
- Internalization: "a negotiated process of development so that is co-constructed" so that it becomes a process of "reorganization of the person-environment relationship" which impacts future organization (Winegar, 1997, p. 31).
- Appropriation: taking something that belongs to others and making it one's own, we become agents of language (Wertsche, 1993).
- Mastery: "knowing how" to do something (Wertsch, 1998).

- Imitation: Baldwin defines two types of imitation: simple and persistent. Simple imitation is the best the individual can do without attempts to improve the imitation with absolutely no changes. Persistent imitation means the activity is intentional and goal-directed, it involves cognition, and it is cyclic and reproductive so that the individual may modify the original (Baldwin, 1895).
- Leading activities: any activity that is strongly promoted by a community, especially in the education system, can become a "leading activity" that strongly influences development (Tulviste, 1991).
- Self-perception: a person's belief about himself or herself, including attributes about who and what self means (Baumeister, 1999).
- Northwest Inland Writing Project (NIWP)
- Academic literacy: a socialization process through which we explain "university culture" to students so they can learn the requirements through a kind of apprenticeship (Paltridge, 2004, p. 90).
- Multiliteracy: "the multiplicity of communications channels and media" and the "increasing salience of cultural and linguistic diversity (Cope & Kalantsis, 2000, p. 5).

Coda

1. Self-Perceptions
2. Apprehension
3. Self-efficacy
4. Faculty Perceptions
5. Translation
6. KSA Education=Bad
7. Needs
8. Engineering/English
9. English Important
10. IEP
11. Post-Graduation
12. Writing-formula
13. Discrimination
14. Appropriation and Mastery
15. LPP/COP
16. Leading Activities
17. Imitation
18. Islam and the Qur'an
19. IEP-Teaching Writing
20. Engineering-Teaching Writing
21. Family
22. Faculty Expectations

23. Plagiarism

24. Friends

25. Learning Arabic

26. Engineering Coursework

27. Plagiarism

28. KSA Teachers

29. Private School

30. SACM/Scholarships

31. KSA Politics

32. Expectations for Writing on the Job

33. Memorization

34. Advisor/Major Professor

35. Social Relationships-other

36. Writing Center

Consent Forms

Consent Form: Students

1. The Institutional Review Board has certified this project as exempt.

2. The purpose of this study is to understand gradate students' attitudes towards their academic writing in English and how these attitudes were developed.

3. You will be asked to answer questions about your attitudes towards your English writing and describe how you learned English both in your country and in the United States. The interviews will take approximately 45 minutes.

4. Your participation or non-participation in this study will have no effect on your performance in this course or on the services you received from the Intensive English Program or the College of Engineering.

5. During the course of this study, you may stop at any time with no penalty. In addition, you may withdraw from this study at any time, all you need to say is that I no longer wish to participate.

6. Although there are no or minimal risks associated with the project, some may people find the time to complete the questionnaire long. If you find any part of participation in this study creates stress or difficulty for you, we will not ask for your continued participation. If you find that the interview is creating stress or difficulty for you, we will not ask for your continued participation and the interview data obtained will not be used.

7. You will benefit from this project by helping us understand what "attitudes" graduate students have towards writing in English and how the University can support you in your degree program. Society will benefit because it will help us improve support services by bettering understanding what international students need to succeed at a university.

8. All information you provide will be placed in a locked file cabinet and/or password protected computer and server space, with access only available by myself and my faculty sponsor Dr. Emily Duvall.

9. If you have questions about the questionnaire, you can ask the investigator during the questionnaire, when the questionnaire is complete, or at a time you feel is appropriate.

Investigator	Faculty Sponsor
Kate Hellmann	Dr. Emily Duvall
University of Idaho	University of Idaho
Dept. of Curriculum & Instruction	Dept. of Curriculum & Instruction
Moscow, ID 83844	Coeur D'Alene, ID. 83814
Ph. 208-885-6587	Ph. 208-667-2588
Email: hell3340@vandals.uidaho.edu	Email: emily@uidaho.edu

I have reviewed this consent form and understand and agree to its contents.

Participant Name _____

Date _____

Date of Birth Line _____

Experimenter Name: Kate Hellmann and Dr. Emily Duvall

Consent Form: Intensive English Program Faculty

1. The Institutional Review Board has certified this project as exempt.

2. The purpose of this study is to understand gradate students' attitudes towards their academic writing in English and how these attitudes were developed.

3. You will be asked to answer questions about your experiences teaching and interacting with international students. The interviews will take approximately 45 minutes.

4. Your participation or non-participation in this study will have no effect on your position in the Intensive English Program.

5. During the course of this study, you may stop at any time with no penalty. In addition, you may withdraw from this study at any time, all you need to say is that I no longer wish to participate.

6. Although there are no or minimal risks associated with the project, some may people find the time to complete the questionnaire long. If you find any part of participation in this study creates stress or difficulty for you, we will not ask for your continued participation. If you find that the interview is creating stress or difficulty for you, we will not ask for your continued participation and the interview data obtained will not be used.

7. You will benefit from this project by helping us understand what "attitudes" graduate students have towards writing in English and how the University can support them in their degree program. Society will benefit because it will help us improve support services by bettering understanding what international students need to succeed at a university.

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University of Idaho	University of Idaho
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Moscow, ID 83844	Coeur D'Alene, ID. 83814
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I have reviewed this consent form and understand and agree to its contents.

Participant Name _____

Date _____

Date of Birth Line_____

Consent Form: Engineering Faculty

1. The Institutional Review Board has certified this project as exempt.

2. The purpose of this study is to understand gradate students' attitudes towards their academic writing in English and how these attitudes were developed.

3. You will be asked to answer questions about your experiences teaching and interacting with international students. The interviews will take approximately 45 minutes.

4. Your participation or non-participation in this study will have no effect on your position in the College of Engineering.

5. During the course of this study, you may stop at any time with no penalty. In addition, you may withdraw from this study at any time, all you need to say is that I no longer wish to participate.

6. Although there are no or minimal risks associated with the project, some may people find the time to complete the questionnaire long. If you find any part of participation in this study creates stress or difficulty for you, we will not ask for your continued participation. If you find that the interview is creating stress or difficulty for you, we will not ask for your continued participation and the interview data obtained will not be used.

7. You will benefit from this project by helping us understand what "attitudes" graduate students have towards writing in English and how the University can support them in their degree program. Society will benefit because it will help us improve support services by bettering understanding what international students need to succeed at a university.

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Kate Hellmann	Dr. Emily Duvall
University of Idaho	University of Idaho
Dept. of Curriculum & Instruction	Dept. of Curriculum & Instruction
Moscow, ID 83844	Coeur D'Alene, ID. 83814
Ph. 208-885-6587	Ph. 208-667-2588
Email: hell3340@vandals.uidaho.edu	Email: emily@udiaho.edu

I have reviewed this consent form and understand and agree to its contents.

Participant Name _____

Date _____

Date of Birth Line _____

Experimenter Name: Kate Hellmann and Dr. Emily Duvall

Consent Form: Engineering Companies

1. The Institutional Review Board has certified this project as exempt.

2. The purpose of this study is to understand gradate students' attitudes towards their academic writing in English and how these attitudes were developed.

3. You will be asked to answer questions about what types of writing engineers do in your company. The interviews may take up to twenty-five minutes.

4. Your participation or non-participation in this study will have no effect on your position in the company.

5. During the course of this study, you may stop at any time with no penalty. In addition, you may withdraw from this study at any time, all you need to say is that I no longer wish to participate.

6. Although there are no or minimal risks associated with the project, some may people find the time to complete the questionnaire long. If you find any part of participation in this study creates stress or difficulty for you, we will not ask for your continued participation. If you find that the interview is creating stress or difficulty for you, we will not ask for your continued participation and the interview data obtained will not be used.

7. You will benefit from this project by helping us understand what "attitudes" graduate students have towards writing in English and how the University can support you in your degree program. Society will benefit because it will help us improve support services by bettering understanding what international students need to succeed at a university.

8. All information you provide will be placed in a locked file cabinet and/or password protected computer and server space, with access only available by myself and my faculty sponsor Dr. Emily Duvall.

9. If you have questions about the questionnaire, you can ask the investigator during the questionnaire, when the questionnaire is complete, or at a time you feel is appropriate.

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I have reviewed this consent form and understand and agree to its contents.

Participant Name _____

Date _____

Date of Birth Line _____

Experimenter Name: Kate Hellmann and Dr. Emily Duvall

Consent Form: Writing Center

1. The Institutional Review Board has certified this project as exempt.

2. The purpose of this study is to understand gradate students' attitudes towards their academic writing in English and how these attitudes were developed.

3. You will be asked to answer questions about how international students receive help with their writing in the Writing Center.

4. Your participation or non-participation in this study will have no impact on your position in the Writing Center.

5. During the course of this study, you may stop at any time with no penalty. In addition, you may withdraw from this study at any time, all you need to say is that I no longer wish to participate.

6. Although there are no or minimal risks associated with the project, some may people find the time to complete the questionnaire long. If you find any part of participation in this study creates stress or difficulty for you, we will not ask for your continued participation. If you find that the interview is creating stress or difficulty for you, we will not ask for your continued participation and the interview data obtained will not be used.

7. You will benefit from this project by helping us understand what "attitudes" graduate students have towards writing in English and how the University can support you in your degree program. Society will benefit because it will help us improve support services by bettering understanding what international students need to succeed at a university.

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9. If you have questions about the questionnaire, you can ask the investigator during the questionnaire, when the questionnaire is complete, or at a time you feel is appropriate.

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Ph. 208-885-6587	Ph. 208-667-2588
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I have reviewed this consent form and understand and agree to its contents.

Participant Name _____

Date _____

Date of Birth Line _____

Data Collection Instruments

Part 1: Demographic Information

1. What is your age?

_____ 18-25 years _____26-35 years _____ 36-45 years

_____ 46-55 years

2. What is your gender?

Male_____ Female_____ Other_____

3. What is/are the country(ies) you have current citizenship in?

_____

_____

_____

4. Which languages can you use with a high level of proficiency in reading, writing, listening and speaking? High proficiency means native-like proficiency.

5. Which English entrance exam did you take to get into the Participating university and what was your score?

TOEFL_____ Score_____

IELTS_____ Score_____

MELAB_____ Score_____

Other(Please specify)_____ Score_____

Part 2: Self-Perceptions towards English Proficiency

1. Describe how you feel about your English writing.
2. Do you feel that you are able to write in English in your graduate courses without outside assistance? What about a thesis or dissertation?
3. Describe how you feel about your general English proficiency.
   a. Is it good enough to complete your degree program without any problems?
   b. Why or why not?

Part 3: Learning English and Previous Education

4. At what age did you begin formal instruction in English? Formal instruction refers to learning English from an instruction in a classroom setting.

   _____

5. Where did you begin formal instruction in English?

   In school_____ Online_____

   with a tutor_____ other(list)_____

6. Had you learned any English prior to formal instruction?

   Yes_____

   No_____

12. Do you recall when you first started to learn to write in Arabic? In English? How were you taught to write in your language? What are the cultural norms of writing in Arabic? What process do you go through to write?

13. At what age do children in your country learn to write?

14. How valued is written literacy in your culture? Oral literacy? Why?

15. What is the most valued type of literacy (speaking, listening, reading, writing) and why?

16. Are you a good writer in Arabic? Why or why not?

17. What type of writing did you do in school in your country? Narrative, summary, academic? Can you write well in Arabic given the same assignments you get here at the g university?

18. What religious or academic texts were important in learning to read and write in your country? Why were they important? Were you ever asked to copy out of any of these texts? If so, when and for what purpose?

19. Is there a formula that you learned to write in Arabic? Did you copy or imitate the writing of a text? Have you ever paraphrased in Arabic? Cited sources?

20. Do you ever translate English into Arabic to understand it? Why or why not? If so, when?

21. Describe how you learned English in your country, and what kinds of assignments, activities and tasks you did that helped make your English better.

22. What types of assignments, activities or tasks did you complete in your first language in school or in a work setting prior to coming to the participating university?

23. Tell me about your experience learning to write in English. What or who helped you the most in this process? If you had to go through it again, what do you wish had been different?

24. Does having good hand-writing matter in certain contexts? Which ones? Why or why not?

25. How, when and why was the English language important to your education and to your career goals?

26. From what colleges or universities have you already received degrees? What degree are you pursuing now at this university?

PhD_____ MS_____ BS_____ Other(please specify)_____

27. Please describe the education system in your country, what is taught and what the role of the teacher is.

28. In light of the education system in your country, what has been challenging for you to adjust to in the U.S. (in terms of the classroom, teachers, academic expectations, etc.)

B. The Intensive English Program

28. Did you take English classes at the Intensive English Program (IEP), or directly enter the university by passing the TOEFL or the IELTS?

29. If you did take English classes at the IEP, do you feel that they prepared you for your graduate classes and program? Why or why not?

30. Specifically, what types of writing assignments did you complete in IEP?

31. What type of feedback did you get about your writing from your IEP teachers?

32. Did you feel the Intensive English Program was helpful in other ways besides preparing you for your graduate program?

33. If you entered your graduate courses without taking English classes, do you feel that you were adequately prepared to succeed without additional English language support? Why or why not?

34. Have you had any feedback from your professors on your written assignments (e.g. homework, quizzes, exams, etc.)? If yes, what type of feedback?)

35. Have you needed extra support to cope with your assignments? What type of help have you needed?

36. How did you feel working on these assignments? (were they easy, difficult, how much time did they take?)

37. What did you learn working on these assignments?

38. What assignments are you working on now?

39. Do you understand what is expected of you in these assignments?

40. How well do you think you'll do on these?

41. How are these assignments similar or different from the ones you've done in the past?

Yes_____ No_____ Not Applicable_____

Writing in your Graduate Degree Program, on the Job and Post-Graduation

42. What are your plans when you graduate?

43. When you graduate, do you plan to return to your home country or remain in the U.S.?

44. What kind of job are you looking for?

45. If you remain in the U.S., do you think you'll have to write in English for your job? How much? What type of writing do you think you'll have to do?

46. Are you familiar with the types of writing you will have to do as an engineer in the field? How will you prepare for this type of writing or do you feel you are prepared? If so, how did you prepare?

47. If you do plan to return to your country, do you think your English will improve, stay the same or get worse? Why?

48. Do you think your graduate degree program in the U.S. places too much emphasis on writing? Why or why not?

49. Do you feel prepared to write a thesis or dissertation? Why or why not?

Part 4: Social Relationships

50. Please describe your family life/home life.

    a. Are you married?

    b. Did you bring your family with you? If so, who is here with you? Why did you choose to bring them?

51. What language do you speak at home?
52. What language do your children speak? Are they learning English?
53. Describe the role of English in your home life. Specifically, what kind of writing in English do you do at home? Your family?
54. Describe the role of Arabic in your home life. Specifically, what kind of writing do you do in Arabic at home? Your family?
55. Do you skype/contact your family and friends in your home country? E-mail?
56. Describe your relationship with your academic advisor/major professor.
57. Has this relationship helped or hindered your success at the university? Why?
58. Does your advisor help you with your writing? If so, how?
59. What are your advisor's expectations for your writing and your thesis or dissertation? What is the power dynamic like with your advisor? Your professors? Your friends in your department?
60. Describe your interactions with professors/instructors you've taken courses from.
61. Have they helped or hindered your success at the university? Why?
62. Specifically, how have these professors helped you with your writing?
63. Describe the friendships/relationships you have developed here.
64. Have they helped or hindered your success at the university? Why?
65. Have your friends or others ever helped you with your writing? If so, how? Why?

Support from the university

1. Have you had any feedback from your professors on your written assignments (e.g., homework, quizzes, exams, etc)? If yes, what type of feedback? If written, can you share it with me?

2. How did you feel working on these assignments? (were they easy, difficult, how much time did they take?).
3. What did you learn working on these assignments?
4. What assignments are you working on now?
5. How well do you think you'll do on these?
6. Do you understand what is expected of you in these assignments?
7. How are these assignments similar or different from the ones you've done in the past?
8. Have you needed extra support to cope with your assignments? What type of help have you needed?
9. What types of support do you need from the University to successfully complete your degree program now?
10. What, specifically, can the university do to help you be successful and complete your degree program?
11. What's the most important area of English for you to be successful in your engineering degree?
12. Is there anything else you'd like to tell me about what could impact your success in completing your degree at the university?

Questions for Engineering Faculty:

1. Describe your role as a professor or advisor of international graduate students in the College of Engineering.
2. Do you ever interact with students outside of class? If so, where and how?
3. What languages can you use with a high degree or proficiency?

4. In what language do you interact with international students?

5. What kind of writing do graduate students have to accomplish in coursework? In terms of a thesis or dissertation?

6. What academic expectations do you have for international graduate students and specifically in regards to their writing?

7. Have you published papers with international graduate students? What success and challenges has this encompassed?

8. How do you help students who may be challenged by writing in English?

9. What other unique challenges or needs do you think international students have?

10. Who are the major employers of graduates of the College of Engineering?

11. What are the expectations of these companies in terms of graduates' ability to write? How do you help them write well? Do you give them models? What process do you use?

12. What do you know or have your learned about the cultures of your students? What is the power dynamic like between you and your students?

13. Do you feel that you approach course subject matter in a culturally sensitive way? Why or why not? If so, how?

14. Is there anything else you'd like to share with me about working with international graduate students?

Questions for IEP Faculty:

1. Describe your role as an English teacher to international graduate students in the IEP.
2. What kind of activities, tasks and assignments do you use in class in order to teach writing? What is effective and why?
3. Do you ever pair weaker writers with stronger writers? Explain how you group/pair students and what student dynamics are like.
4. Do you ever ask students to imitate or model a certain genre of writing? If so, how and why?
5. Do you ever interact with students outside of class? If so, where and how? What academic expectations do you have for international graduate students and specifically in regards to their writing?
6. What kind of writing do all graduate students have to accomplish in coursework?
7. Describe how you teach in class. What pedagogy do you follow?
8. What are the most important writing learning outcomes in the graduate courses you teach? Why?
9. Specifically, how do you help students who may be challenged by writing in English? Specifically, how do you assist them with academic research writing? What sets their needs apart from other students' needs?
10. What other unique challenges or needs do you think international students have?
11. What do you know or what have you learned about Arabic culture from teaching?
12. What have you learned about Arabic speakers in the classroom? What are their strengths in learning? What are they most challenged with (listening, speaking, reading, writing, grammar)? Why?

13. Do you feel that you approach course subject matter in a culturally sensitive way? Why or why not? If so, how?
14. IEP has a lot of international graduate students who will go into engineering. Are you familiar with the types of writing engineers have to do? How do you teach to this?
15. Is there anything else you'd like to share with me about working with international graduate students?

Questions for Engineering Employers

1. Do you employ non-native speakers of English as engineers in your company?
2. Do you employ bilingual Arabic and English speaking engineers in your company?
3. What kind of educational qualifications must potential employees have?
4. What type of jobs or positions do you hire for?
5. What types of writing are non-native speaking employees required to do as part of their jobs?
6. What percent of the time do employees spend writing?
7. What strengths do non-native speakers bring to the job?
8. What challenges do you have with respect to employing non-native speakers of English?
9. How well do non-native English speakers fit into the community of your company? Why?
10. Do you provide non-native speakers with any additional support (with regards to writing)? If so, what? Why?

Questions for the Writing Center

1. Describe the services the Writing Center offers.

2. Roughly, how many international students come in to the Writing Center on a regular basis?
3. Describe how the Writing Center assists international student writers at both the undergraduate and graduate levels.
4. What unique challenges to international students have in producing writing in the academy?
5. What do you do to make sure the Writing Center is prepared to help international students?
6. How do you help those at the graduate level completing a thesis or dissertation?
7. What challenges are unique to different language groups?
8. How do you train tutors to work with international students?
9. Describe a typical interaction between a Writing Center tutor and an international student.
10. What challenges has the Writing Center come across in helping international students with their writing and how have you handled those?
11. Do faculty members and departments contact the Writing Center to help international students?
12. Is there anything else you'd like to share with me regarding international students and the Writing Center?

IRB Approval

April 1, 2013

University of Idaho

Office of Research Assurances (ORA)
Institutional Review Board (IRB)
PO Box 443010
Moscow ID 83844-3010

Phone: 208-885-6162
Fax: 208-885-5752
irb@uidaho.edu

To: Kern, Anne
Cc: Hellmann, Kate

From: IRB, University of Idaho Institutional Review Board

Subject: Exempt Certification for IRB project number 12-040

Determination: March 28, 2013
Certified as Exempt under category 2 at 45 CFR 46.101(b)(2)
IRB project number 12-040: Literate Enough to Succeed: the Case of International Graduate Students

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The modification to the protocol has been determined to retain the exempt certification. This study may be conducted according to the protocol described in the Application without further review by the IRB. As specific instruments are developed, each should be forwarded to the ORA, in order to allow the IRB to maintain current records. Every effort should be made to ensure that the project is conducted in a manner consistent with the three fundamental principles identified in the Belmont Report: respect for persons; beneficence; and justice.

It is important to note that certification of exemption is NOT approval by the IRB. Do not include the statement that the UI IRB has reviewed and approved the study for human subject participation. Remove all statements of IRB Approval and IRB contact information from study materials that will be disseminated to participants. Instead please indicate, "The University of Idaho Institutional Review Board has Certified this project as Exempt."

Certification of exemption is not to be construed as authorization to recruit participants or conduct research in schools or other institutions, including on Native Reserved lands or within Native Institutions, which have their own policies that require approvals before Human Subjects Research Projects can begin. This authorization must be obtained from the appropriate Tribal Government (or equivalent) and/or Institutional Administration. This may include independent review by a tribal or institutional IRB or equivalent. It is the investigator's responsibility to obtain all such necessary approvals and provide copies of these approvals to ORA, in order to allow the IRB to maintain current records.

This certification is valid only for the study protocol as it was submitted to the ORA. Studies certified as Exempt are not subject to continuing review (this Certification does not expire). If any changes are made to the study protocol, you must submit the changes to the ORA for determination that the study remains Exempt before implementing the changes. The IRB Modification Request Form is available online at: http://www.uidaho.edu/ora/committees/irb/irbforms