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# The Relationship between Information Literacy and Global Learning

Valda J. Adeyiga

*Florida International University*, vadey001@fiu.edu

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

THE RELATIONSHIP BETWEEN INFORMATION LITERACY AND GLOBAL  
LEARNING

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF EDUCATION

in

CURRICULUM AND INSTRUCTION

by

Valda Adeyiga

2017

To: Dean Michael R. Heithaus  
College of Arts, Sciences and Education

This dissertation, written by Valda Adeyiga, and entitled The Relationship Between Information Literacy and Global Learning, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Thomas G. Reio, Jr.

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Allan K. Perkins

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Sarah A. Mathews, Co-Major Professor

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Hilary Landorf, Co-Major Professor

Date of Defense: June 28, 2017

The dissertation of Valda Adeyiga is approved.

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Dean Michael R. Heithaus  
College of Arts, Sciences and Education

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Andrés G. Gil  
Vice President for Research and Economic Development  
and Dean of the University Graduate School

Florida International University, 2017

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## DEDICATION

I dedicate this dissertation to my mother, Una Bailey, my greatest inspiration, my first teacher, and the person who taught me the value of education. I also dedicate this dissertation to my spouse, Julius, and my children, David and Andrew, who have sacrificed much and have shown their unwavering love and support throughout my period of study.

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ABSTRACT OF THE DISSERTATION

THE RELATIONSHIP BETWEEN INFORMATION LITERACY AND GLOBAL  
LEARNING

by

Valda Adeyiga

Florida International University, 2017

Miami, Florida

Professor Hilary Landorf, Co-Major Professor

Professor Sarah A. Mathews, Co-Major Professor

The purpose of this study was to investigate the relationship between undergraduate student performance on an information literacy assessment activity and their performance in global learning assessment activities for three global learning outcomes: global awareness, global perspective, and global engagement.

Global learning is the process whereby people from varied backgrounds collaboratively analyze and seek solutions for complex problems that go beyond borders. Important components of global learning are the acquisition, analysis and use of information, relating to complex problems which may include, but are not limited to, poverty, environmental protection and food security. These components of global learning are analogous to information literacy, which represents skills that students apply to recognize, access, evaluate, and use information for decision making.

Students enrolled in global learning courses, at Florida International University, participated in this investigation during the fall of 2016. Data from an 18-question information literacy assessment survey, and results of three global learning assessment

activities were collected. Instructors teaching the global learning courses scored the global learning assessment activities. Information literacy and global learning data for 43 students were analyzed using multiple regression correlation methods. Research findings indicate no significant relationship between information literacy and the three global learning outcomes: global awareness, perspective and engagement. Descriptive data analysis show that over 79% ( $n=34$ ) of participants reported having never received information literacy instruction from a librarian.

Curricular implications include exploring opportunities for exposing students in global learning courses to information literacy processes either by adding information literacy to the general education core curriculum or by integrating information literacy into these courses. Recommendations for future research include replicating this study with a larger sample of students and conducting a study involving an information literacy intervention with pre- and posttest components.



## TABLE OF CONTENTS

CHAPTER	PAGE
I.	INTRODUCTION ..... 1
	Statement of the Problem..... 9
	Statement of Purpose ..... 10
	Theoretical and Conceptual Framework..... 10
	Significance of the Study..... 18
	Delimitations of the Study ..... 18
	Definition of Terms ..... 19
	Chapter Summary ..... 20
II.	LITERATURE REVIEW ..... 21
	Information Literacy ..... 21
	Global Learning ..... 25
	Grade Point Average (GPA)..... 30
	Class Status ..... 31
	Gender..... 33
	Socio-Economic Status (SES) ..... 36
	Academic Discipline..... 38
	Analytic Models..... 39
	Chapter Summary ..... 39
III.	METHODOLOGY ..... 41
	Research Questions and Hypotheses ..... 41
	Research Design ..... 42
	Model Development ..... 44
	Variables Description and Data Sources ..... 45
	Survey and Information Literacy Assessment Component ..... 49
	Setting and Participants ..... 50
	Sampling..... 51
	Sample Size Determination ..... 52
	Data Collection Procedures ..... 53
	Tests of Statistical Assumptions ..... 55
	Chapter Summary ..... 69
IV.	RESULTS ..... 71
	Descriptive Statistics..... 71
	Global Awareness ..... 74
	Global Perspective ..... 75
	Global Engagement..... 76
	Chapter Summary ..... 77

V.	DISCUSSION .....	78
	Summary and Conclusions of the Analytic Outcomes .....	80
	Discussion .....	81
	Limitations .....	84
	Recommendations and Implications .....	86
	Conclusions.....	88
	REFERENCES .....	90
	APPENDICES .....	106
	VITA.....	146

## LIST OF TABLES

TABLE	PAGE
1. Global Learning Courses and Sections .....	52
2. Levene's Test of Constant Variance: Global Awareness .....	67
3. Levene's Test of Constant Variance: Global Perspective.....	67
4. Levene's Test of Constant Variance: Global Engagement.....	68
5. Descriptive Statistics.....	73
6. Model Summary for Global Awareness .....	74
7. ANOVA Output for Global Awareness.....	75
8. Model Summary for Global Perspective.....	75
9. ANOVA Output for Global Perspective.....	76
10. Model Summary for Global Engagement.....	76
11. ANOVA Output for Global Engagement .....	77

## LIST OF FIGURES

FIGURES	PAGE
1. Input and output model with variables.....	43
2. Plot of residuals vs. predicted values global awareness .....	58
3. Plot of residuals vs. predicted values global perspective.....	59
4. Plot of residuals vs. predicted values global engagement.....	59
5. Q-Q plot of Global Awareness .....	61
6. Q-Q plot of Global Perspective.....	62
7. Normality plot Global Perspective.....	62
8. Normality plot Global Engagement.....	63
9. Transformed GE.....	64
10. Normality plot for IL .....	65
11. Plot of transformed IL.....	65
12. Normality plot of income.....	66

## LIST OF ACRONYMS

AAC&U	Association of American Colleges and Universities
ACRL	Association of College and Research Libraries
ANOVA	Analysis of Variance
CEC	College of Engineering and Computing
CED	Committee for Economic Development
FCAT	Florida Comprehensive Achievement Test
FIU	Florida International University
FGPA	First Year Grade Point Average
GA	Global Awareness
GE	Global Engagement
GL	Global Learning
GP	Global Perspective
GPA	Grade Point Average
HSB	High School Background
HBCUs	Historically Black Colleges
IFLA	International Federation of Library Association
IL	Information Literacy
MSCHE	Middle States Commission on Higher Education
NCLB	No Child Left Behind
NDEA	National Defense Education Act
NSSE	National Survey of Student Engagement
PWIs	Predominantly White Institutions

SACSCOC	Southern Association of Colleges and Schools Commission on Colleges
SAT	Scholastic Aptitude Test
SES	Socioeconomic status
STEM	Science, technology, engineering and mathematics
ToS	Table of Specifications
UNESCO	United Nations Educational, Scientific and Cultural Organization

# CHAPTER I

## INTRODUCTION

Despite the many scientific, educational, and technological advances observed in the United States over the past decades, some believe the United States needs to do more regarding global learning (Hart Research Associates, 2015; Reimers, 2014; Schneider, 2011). *Global learning* is the “process of diverse people collaboratively analyzing and addressing complex problems that transcend borders” (Landorf & Doscher, 2015). Global learning efforts are the avenues whereby students gain the information, skills and attitudes required for global citizenship.

The term *global citizenship* refers to the notion of human beings having equal rights, equal worth and having a sense of belonging, wherever in the world they may be, regardless of nationality, race/ethnicity or religion (Adams & Carfagna, 2006; Appiah, 2008; Osler & Starkey, 2010). *Global citizens* take responsibility for addressing societal issues, and work individually or collectively with members of the international community, to solve or minimize problems that extend beyond national borders. These efforts, known as *global engagement*, address issues including the protection of human rights, alleviating poverty, minimizing or eliminating terrorism and conflicts; assuring food security; promoting environmental protection, gender equity, cultural diversity, religious freedom, and providing humanitarian assistance (Adams & Carfagna, 2006; Dreher, Gaston & Martens, 2008; Goldin & Reinert, 2012; Stiglitz, 2003).

Academic institutions often expose students to national and international issues through global learning courses (DeNardis, 2015; Patterson, Carrillo & Salinas, 2012). These global learning courses address concepts which include, but are not limited to,

foreign languages, culture, international trade, technology, health, biology, engineering and religion (Hovland, Musil, Skilton-Sylvester & Jamison, 2009). Individual academic institutions typically have more in-depth requirements for global learning courses. For example, a global learning course at Florida International University must include (a) outcomes that incorporate critical thinking skills, (b) student engagement in reading materials that address local, national and international issues, (c) active learning strategies such as group presentations, class discussions and debates, and (d) comprehensive assessments that are measurable.

Emphasis on global learning is rapidly expanding across the world, and especially in industrialized nations like the United States (Whitehead, 2015). However, despite the integration of global learning courses in the undergraduate curriculum, students in the United States are still found to be inadequately prepared for global citizenship (Bok, 2007; National Geographic Education Foundation, 2006; National Research Council, 2007; Reimers, 2013; West, 2012). The need for global learning came about as a direct result of globalization and its social and economic impact on countries of the world (DeNardis, 2015; Lewin, 2009). Globalization, often described as the merging of world economies (Robertson, 1992; Stiglitz, 2003), is characterized by increased trade (Kelleher & Klein, 2011), the creation of new jobs, increased migration (Suarez-Orozco, 2009) and improved technology and communication, among other things (Adams & Carfagna, 2006).

An outcome of globalization is the fact that many U.S. business entities have outsourced significant portions of their economic activities over international borders. Stiglitz (2007) notes that the outsourcing of manufacturing and technology jobs by



American companies has resulted in loss of jobs, lower income and greater income inequality for Americans. At the same time, countries like China and India, as major beneficiaries of outsourcing, have experienced rapid economic growth. Full globalization is expected to bring about the same wage rates for unskilled labor across countries of the world. These similar wage rates will result in lower wages, for American workers, as world wages become more aligned to wage rates of lower income countries like China and India.

Additionally, Stiglitz noted that lower wages often result in greater income inequality as workers, particularly the unskilled, experience stagnating or falling wages. Students and citizens are often uninformed about the processes of globalization and the consequent implications for their social and economic welfare. A knowledge of global issues through global learning, could assist people in the United States in accommodating these social and economic dynamics.

An important juncture for examining global learning and its outcomes (awareness, perspective and engagement) could be the link to the ever-present concern of student success in the United States. Student success is widely described in education literature in terms of student enrollment in postsecondary education, grades, scores on standardized examinations, persistence, length of time to degree, and graduation rates (Braxton, 2006; Hovland, 2014; Kuh, Kinzie, Buckley, Bridges & Hayek, 2007; Pascarella & Terenzini, 2005).

In the present study, student success is defined as outcome scores from students' academic engagements, particularly, concerning information literacy and global learning (Association of American Colleges and Universities [AAC&U], 2002; Association of

College and Research Libraries [ACRL], 2000). Information literacy is defined as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (ACRL, 2016). The prevailing consensus among American education stakeholders is that the success of students in higher education can be realized if students are prepared to confront the social and economic challenges of the twenty-first century (Association of American Colleges and Universities, 2007; Bikson & Law, 1994; Case, 1993; Committee for Economic Development [CED], 2006; U.S. Department of Education, 2006). The consensus emerged, in part, because of the rapid progress of globalization in the later part of the twentieth century, and the underperformance of students in the United States as indicated by seminal reports.

The emergence of seminal documents such as the *National Defense Education Act* [NDEA] (United States Senate. Committee on Labor and Welfare, 1958), the Foreign Policy Association report of 1969, the Nation at Risk report of 1983, the No Child Left Behind NCLB Act [NCLB] of 2000 (United States Department of Education, 2006), and the Spellings Commission report of 2006 have fueled the debate on students’ academic performance in the United States. The NDEA of 1958 for example, was passed in response to the Russian launch of the Sputnik space satellite in 1957. The Sputnik launch sparked concerns that the United States was in danger of losing its dominant position in the fields of science and technology (Jolly, 2009; Tye, 2009; United States Senate. Committee on Labor and Welfare, 1958). The NDEA required education curriculums to reflect a higher infusion of foreign language study, international studies, math and

science. The Foreign Policy Association report (Becker, 1969) was written in response to the perceived need to provide international education for children in the United States. The report recommended an emphasis on international education research, and teacher training in international education.

The *Nation at Risk* report of 1983 was published in response to public opinion that there was a national crisis in education caused by an ineffective school system (Tyack & Cuban, 1995; United States Department of Education, 2007). There was concern that the United States was losing its leadership position in science, industry, commerce and technological innovation. The *Nation at Risk* report (The National Commission on Excellence in Education, 1983) recommended an improvement in the quality of education that would contribute to the advancement of the U.S. economy. The dissemination of this report preceded the launch of a reform program that targeted students and teachers in K-12 education (Harris & Miller, 2005).

The No Child Left Behind Act of 2001, which is the reauthorization of the Elementary and Secondary Education Act passed in 1964 sought to address the problem of “failing schools” and to close the academic disparity between high and low performing students through a system of accountability and high stakes testing (United States Department of Education, 2007). The Spellings Commission, also known as the Commission on the Future of Higher Education, was formed in response to concerns that the U.S. system of higher education had fallen behind its first-world counterparts, and was not preparing the U.S. workforce for the rigors and competitiveness of a globalized world. The commission was charged with recommending a strategy for reforming post-secondary education, with focus on areas of access to education, educational

affordability, innovation in education, quality of education, and accountability (United States Department of Education, 2006).

These reports, combined with the phenomenon of globalization, legislation and national debate on academic outcomes over the years, eventually led to the development of measures to address education improvement in the United States. From the 1958 NDEA act, came funding for: (a) education loans to students in higher education, (b) financial aid for programs in math, science and foreign languages, (c) fellowships to increase the number of university professors, (d) foreign language training, (e) international studies programs in universities, and (f) gifted education (Jolly, 2009; United States Senate. Committee on Labor and Welfare, 1958). From the Spellings Commission, came dual-enrollment and advanced placement programs (Harris & Miller, 2005; Jolly, 2009; Kessinger, 2011; United States Senate. Committee on Labor and Welfare, 1958). In 1961, Congress passed the *Mutual Educational and Cultural Exchange Act*, which launched a cultural education exchange program between the United States and other countries (Tye, 2009; Scarfo, 1998). The ultimate purpose of these programs was to prepare students with the skills, knowledge and behaviors necessary to address the complexities of globalization (Alladin, 1989; Anderson, 1979).

Notwithstanding these measures to improve education in the United States, it was not until 1990 that significant efforts were made to address global learning in the postsecondary education curricula. In 1990, the Association of American Colleges and Universities (AAC&U) embarked on a mission to invigorate undergraduate core curricula (Hovland, 2006). The process of revitalizing the curriculum involved bringing together 63 institutions of higher education to evaluate the focus of their existing curricula with a

view to creating new institutional undergraduate curricula. The expectation was that the new curricula would provide undergraduate students with clear understandings of how diversity, worldwide interconnectedness and interdependence, could potentially impact their lives and the lives of others.

According to Hovland, the collaboration, among the 63 institutions, did result in recommended curricular changes for undergraduates. The changes included a redirection of emphasis from a Euro-centric curriculum to a world-centric one that emphasized the diversity and multiplicity of world cultures. This collaborative curricular endeavor between the AAC&U and higher education institutions, known as *Engaging Cultural Legacies*, was the first in a series of national endeavors that sought to reform the undergraduate curricula and to reflect diversity and multiplicity of world cultures. Additionally, professional development opportunities became available to faculty members who desired to teach global learning courses in higher education institutions.

The subsequent curricula changes made by participating institutions later became evident in undergraduate core and general education courses, identified as global learning courses. Educational institutions also integrated these changes in study abroad programs and other co-curricular activities. The intention of these global learning courses was to expose students to real-life issues from which they would learn essential skills pertinent to managing problems associated with the global economy.

A key component of global learning is the acquisition, analysis and use of information, relating to concepts such as poverty, the environment, and diversity that are of global concern (Alladin, 1989; Becker, 1982; Case, 1993; Hovland, 2006). This acquisition, analysis and use of information component of global learning is analogous to

the concept of information literacy, which represents skills that students apply to recognize, access, evaluate, and use information for decision-making (ACRL 2016). Information literacy emerged prominently as a student-learning construct for global understandings, in 2007, when the AAC&U recommended it as an essential learning outcome (AAC&U, 2007). This information literacy recommendation came as part of the AAC&U's initiative, *Liberal Education and America's Promise* (LEAP), to improve the quality of learning for American college students.

Implicit in the recommendation of the AAC&U, is the idea that access to and the ability to evaluate and effectively use information are significant for the intellectual empowerment of global learners. Adams and Carfagna (2006) also emphasized the importance of finding, analyzing and synthesizing information in order to increase knowledge and understanding of global problems. This ability to find, analyze and synthesize information would also support the individual's ability to work across borders and cultures and to solve global problems including, but not limited to poverty, racism and environmental issues.

It follows therefore, that students in global learning courses may be able to maximize their benefit when they acquire the skills needed to evaluate and synthesize different types and sources of information (ACRL, 2000; D'Angelo, 2001; IFLA, 2015; Stevens & Campbell, 2006; UNESCO, 2005). This present study examines the question of whether the acquisition of information literacy skills has any bearing on student performance in global learning courses.

## Statement of the Problem

Over the years, scholars have provided evidence of the relationship between information literacy and student outcomes. Wong and Cmor (2012), in their study of undergraduate outcomes, reported that information literacy is directly correlated with grade point average (GPA). Cook (2014) expressed a similar sentiment in a longitudinal analysis. Cook found that undergraduates who took information literacy courses had higher graduation GPAs than students who did not. Other research studies have indicated that undergraduate students generally perform at less than desirable levels on information literacy assessments (Katz, 2007; Head, 2013).

The 2015 *Hart Research Associates* report also indicated that only 44% of graduates from post-secondary education in the United States were *globally prepared* (Hart Research Associates, 2015). The concept of *being globally prepared* refers to how well students are cognizant of international politics, economics, religion and culture and their international impact (AAC&U, 2007; Adams & Carfagna, 2006; Case, 1993; Hovland, 2014). Additionally, Adelman (2004) claimed that only 10.2% of students in the United States were globally prepared. Despite these mixed outcomes, plus LEAP's recommendation (ACC&U, 2007) that information literacy be a critical component of student learning, a search of the literature on student outcomes has not revealed any concerted effort to investigate the relationship between information literacy and global learning in postsecondary education. Subsequently, the problem of interest in this study is that there is no certainty as to how the incorporation of information literacy into higher education curricula is related to student performance in global learning courses.

## **Statement of Purpose**

The literature has not examined information literacy in direct relation to global learning outcomes. The void in the literature provides impetus for investigating the correlation between information literacy and global learning. The purpose of the study is to investigate the relationship between undergraduate student performance on an information literacy assessment activity and their performance in global learning assessment activities.

## **Research Questions**

This study addressed three research questions concerning the relationship between information literacy and global learning:

1. Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global awareness assessment activity?
2. Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global perspective assessment activity?
3. Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global engagement assessment activity?

## **Theoretical and Conceptual Framework**

The study is predicated on the holistic learning and information literacy perspectives. One holistic learning perspective is Kegan's (1994) theory of human development as was presented in his seminal work entitled, *In Our Heads: The Mental*



*Demands of Modern Life*. Kegan posits that in the process of human development, people are engaged in efforts to make meaning of their world. Hence, people organize themselves through the emotional, cognitive, interpersonal and intrapersonal domains of human development.

Kegan argues that this theory is an “analytic tool to examine contemporary culture. It will enable us to consider the fit or lack of fit between the demands our cultural curriculum makes on our consciousness . . . and on our mental capacities” (p. 6-7). Many researchers have included Kegan’s theory in their measures of the *cognitive*, *intrapersonal* and *interpersonal* domains of global learning and development among students in higher education (Braskamp & Engberg, 2011; Braskamp, Braskamp & Merrill, 2009).

Braskamp and Engberg (2011) explained that the *cognitive* aspect of students’ perspective development involves both their reflection on and their cultural understandings of information received in the education process. The student’s *interpersonal* dimension is characterized by a disposition to learn about people from differing cultural backgrounds, his or her acceptance of the differences in others, and a willingness to interact with those who are different. Students with these traits also show an appreciation of the divergent cultural backgrounds of others while appreciating their own. Their understanding of themselves as individuals; how their values shape their characters; how they identify themselves; and how these understandings about themselves help them to fit into a multicultural world, are indications of their *intrapersonal development*.

Kegan's model of human development is important for this study because it is holistic and incorporates all three dimensions of human development – cognitive, intrapersonal and interpersonal - which are required in global learning curricular and co-curricular activities. Students apply the *cognitive dimension* to access and analyze information that addresses local, national and international issues (Braskamp & Engberg, 2011; King & Baxter Magolda, 2005; Mansilla & Jackson, 2011). The information accessed, from a variety of sources (West, 2012), helps to increase students' awareness of issues which are of societal concerns. Students in global learning courses are required to analyze information (AAC&U, 2006) from multiple perspectives (cultural, socioeconomic, political, religious, etc.), and thereby, develop their own meanings or viewpoints regarding these events. For example, addressing the demand for abortion among teens in rural America may be evaluated from the cultural, religious, political, economic, and other perspectives. By analyzing the problem from multiple perspectives, students can see all sides of the issue and are in a better strategic position to recommend possible solutions.

With regard to the *intrapersonal dimension*, the student will view the situation from his or her perspective or strongly held views. What are the things that would shape the student's views on abortion? Growing up in a large family which struggled financially, one's religious beliefs, the opinions expressed and news items in the media, and the beliefs held by members of the community are some of the things which help to shape the student's perspective. The values, beliefs, and sense of self, will guide the choices made in the abortion question.

The *interpersonal dimension* would be important when the student works as part of a team or in groups with his or her peers from diverse backgrounds, values and beliefs. While holding on to his or her own values and beliefs, he or she must be able to understand his or her own perspectives in relation to that of others. He or she must be willing to work collectively with a diverse group, regardless of differences, to find solutions to the problem at hand. All three dimensions (cognitive, intrapersonal, and interpersonal) are required for the student to achieve the three global learning outcomes (awareness, perspectives, and engagement).

The Association of College and Research Library (ACRL), (2015) defines Information literacy as: “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.” In other words, the information literate person has the required abilities to successfully implement information search strategies, and understands (1) the process by which information is created, (2) that information is valuable, and (3) that information must be used ethically to create new knowledge. Information literacy takes into account a variety of literacies such as media literacy, digital literacy, critical literacy, information communication and technology (ICT) literacy.

Many education stakeholders view information literacy as a tool which people need to manage their lives. As such, information literacy (1) supports the analysis of information, the creation of new knowledge, and helps to address problems (Kuhlthau, 2004; Mackey & Jacobson, 2014; West, 2012); (2) prepares individuals to participate in the workforce (Duderstadt, 2000; Hovland, 2014; Kirkwood, 2001) and in society (Gross

& Latham, 2007); (3) supports global competence (Mansilla & Jackson, 2011: AAC&U, 2006); and (4) promotes lifelong learning (Birdsong & Freitas, 2012; IFLA, 2015; UNESCO, 2003).

The term “information literacy” was first used by Zurkowski (1974), president of the Information Industry Association, to describe workers who are skilled in the use of information access tools and in using information to solve problems. The concept of information literacy was then enhanced to include notions of (1) information need, (2) the synthesis and evaluation of information, (3) critical thinking, (4), and the ethical use of information. In 1989, these ideas were, articulated in the American Library Association’s (ALA) final report of the *Presidential Committee on Information Literacy*, and integrated into the work of academic libraries. They were recommended as strategies for providing students with skills for academic research, for the world of work, and for lifelong learning.

In 2000, the concepts of information literacy were expanded to include recommendations for assessing information skills and was published by the ARCL as the *Information Literacy Competency Standards for Higher Education*. This standard defined information literacy as one’s ability to find, evaluate and use information for a specific purpose, while adhering to economic, legal and ethical requirements for information access and use. Information literate individuals were viewed as those who are skilled in accessing information in a variety of formats, and possess the ability to “contextualize the information in its social and cultural settings” (McNaught, 2008, p. 410).

By 2016, it became evident that the information literacy standards of 2000 were no longer an accurate reflection of the ideas and practices relating to sources of information, collaboration in information creation, and means of accessing information. Furthermore, the existing and emerging education and social media environments had experienced considerable changes that impacted information search, creation and distribution (ACRL, 2016; Mackey & Jacobson, 2014). As a result, the information literacy standards of 2000 were rescinded in 2016, and the *Framework for Information Literacy for Higher Education* (See Appendix A) became effective (also in 2016). This Framework has a new definition for information literacy, does not emphasize skills development but is based on a number of core concepts with choices for implementation.

The *Framework* is based primarily on two essential ideas: (1) conceptual understandings, and (2) metaliteracy. The conceptual understandings are the centerpieces of the framework and provide cohesion for thoughts relating to “information, research and scholarship” (AACRL, 2016, para 2). They address essential questions for curriculum development, which are grounded on the work of Wiggins and McTighe (2004); and on threshold concepts, which are pathways to the thinking and practices within a discipline. The two main goals of the threshold concept are, (1) knowledge practices, which are the ways in which information literacy learners improve their understandings of information literacy concepts; and (2) dispositions, which are the “affective, attitudinal and valuing dimensions of learning” (ACRL, 2016). The *Framework* has six frames, all of which include a list of knowledge practices and dispositions.

The second essential idea of the *Framework*, metaliteracy, presents information literacy in terms of the overarching abilities displayed by students who are creators and consumers of information. Metaliteracy expands the traditional definition of information literacy to include a stronger emphasis on technology use and collaborative knowledge acquisition, rather than development of discrete skills. According to Mackey and Jacobson (2014), collaborative activities often take place via social media and social networking environments. These collaborative activities involve information creation and distribution by means of mobile, digital, and Open Education Resources (OER) platforms. An important aspect of metaliteracy are the learners' (1) behavioral, (2) affective, (3) cognitive and (4) metacognitive engagements with the information environment (ACRL, 2016, Kuhlthau, 2004, Mackey & Jacobson 2014).

Kuhlthau (2004) had expressed many of the ideas now articulated in the *Framework*. She had conducted a number of studies in information literacy and conveyed her findings in terms of how people make meaning during the process of seeking information. She postulates that the information-seeking process is influenced by environmental constraints such as prior experience, knowledge, interest, information available, requirements of the assignment, time to complete the assignment, and relevance of the information accessed to the problem being addressed.

According to Kuhlthau, the information seeking process of information literacy is a sense-making process which involves cognitive thoughts. It is a cognitive process during which the individual seeks information to fill the gap between what he or she already knows about the problem, and the unknown. The unknown is the information which is needed to help make sense of the world and satisfy the request of the

assignment. The information seeking process is one in which the learner uses information literacy skills to access and critically analyze relevant information from multidisciplinary perspectives. According to (Kuhlthau, 2004), the information accessed “contributes to understanding and meaning” (p. 5). Mackey & Jacobson (2014) underscored the cognitive process in terms of the learner’s ability to evaluate, understand, and effectively use the accessed information to create new knowledge. The new information is published in multiple social contexts and in the open education environments.

The learner’s thinking and feelings (anxiety, uncertainty, etc.) are components of the affective dimension in various stages of the information seeking and sharing processes (Kuhlthau, 2004; Mackey & Jacobson, 2014). The physical dimension of the information seeking process involves the learner’s search strategy which may include use of search terms, library databases, search engines to access information in multiple formats (Kuhlthau, 2004; Mackey & Jacobson, 2014). The *metacognition* involves the learner’s continuous self-reflection of his or her research abilities. The learner also takes control of his or her own learning in order to achieve the predetermined learning goals (Mackey & Jacobson, 2014).

Information literacy concepts are appropriate for this study because it incorporates many of the practices that are expected of the global learning student. First, it supports accessing information from a variety of sources (West, 2012; Mackey & Jacobson, 2014) as is expected of students in global learning courses. Second, an important characteristic of the information literate individual is the ability to critically analyze information from multiple disciplinary perspectives. The critical analysis of information from multiple

disciplinary perspectives helps the student to make meaning or to develop a perspective on the topic of interest (Braskamp & Engberg, 2011; Kuhlthau, 2004; Mackey & Jacobson, 2014; West, 2012);

Thirdly, information literacy supports collaborative engagements in activities to address issues of interest. Fourth, like global learning, information literacy supports preparing students with the necessary skills to address issues in the wider society beyond the classroom or for lifelong learning (Birdsong & Freitas, 2012; IFLA, 2015; UNESCO, 2003). Both Kegan's theory of human development and the information literacy *Framework* share common themes that support global learning.

### **Significance of the Study**

The findings from this correlational investigation will fill a gap in the literature that intersects global learning and information literacy. Furthermore, the results of this study may be instructive for professors and students in global learning courses as well as for academic librarians, and university administrators. The outcomes may inform the decisions of academic librarians regarding information literacy interventions for undergraduates while professors may use the results in making decisions for curricular planning. Similarly, university administrators may use the results for the purposes of program planning. Their considerations could be whether, and the extent to which, information literacy may be integrated into the existing global learning courses for undergraduates.

### **Delimitations of the Study**

The purpose of this study was to investigate the relationship between undergraduate student performance on an information literacy assessment activity and



their performance in global learning assessment activities. Specifically, the study was confined to a South Florida higher education setting that accommodates a diverse group of students.

### **Definition of Terms**

***Global Awareness*** is the “Knowledge of the interconnectedness of local, global, international, and intercultural issues, trends, and systems” (FIU, 2016).

***Global Engagement*** is defined as the “willingness to engage in local, global, international, and intercultural problem solving” (FIU, 2016).

***Global Education*** refers to the training of teachers who will instruct students in the competencies required to navigate and impact a complex, challenging and unpredictable world (Kirkwood, 2001).

***Global Learning*** refers to the “the process of diverse people collaboratively analyzing and addressing complex problems that transcend borders,” Landorf & Doscher (2015 p. 1).

***Global Perspective*** refers to one’s ability to analyze local, global, international, and intercultural problems from multiple points of view (FIU, 2016).

***Globalization*** is the integration of the world accompanied by changes in transportation, communication, immigration, commerce, finance and technology (Stiglitz, 2003, p. 9).

***Information literacy*** is the “set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (ACRL, 2016, para 5).

## **Chapter Summary**

This chapter addressed the background to the study, the problem statement, the purpose of the study, the research questions and the hypothesis. This chapter also discussed the theoretical framework, the significance of the study, and the delimitations of the study and provided definition of terms used. Chapter 2 is a review of the literature relevant to information literacy and global learning. Chapter 3 reviews the methods used to conduct the study. Chapter 4 presents the results of this study, and Chapter 5 reviews the results described in Chapter 4 in relation to the research questions, the hypotheses and the literature.

## **CHAPTER II**

### **LITERATURE REVIEW**

The purpose of this study was to investigate the relationship between undergraduate student performance on an information literacy assessment activity and their performance in global learning assessment activities. To facilitate this research focus, a review of related literature was conducted. The literature review provided information that may be relevant for variable and model selection. In the conduct of these prior studies, scholars focused primarily on student success in response to a number of economic, social and contextual factors. Researchers have provided evidence that an array of factors were shown to influence student academic outcomes. Some of these influential factors are: (a) information literacy, (b) global learning, (c) grade point average, (d) class status, (e) gender, (f) socioeconomic status (SES), and (g) academic discipline. These predictor variables are described hereafter, along with analytic models used by the researchers.

#### **Information Literacy**

There is consensus among scholars and research agencies that information literacy serves an important role in the overall social and economic development of countries, institutions, and individuals. Maitaouthong, Tuamsuk and Techamanee (2011) for example, studied the integration of information literacy into general education courses through literacy assignments, course teachings, and problem-based learning engagement activities. The researchers employed a pre-test – posttest model, and reported that students' critical thinking and self-learning skills improved after the interventions.

In a longitudinal study of student success and information literacy, Walton and Hepworth (2011) investigated learners' reasoning skills during a face-to-face information literacy teaching intervention that also incorporated online social networking activities. The study integrated ideas from information literacy, teaching and learning, e-learning and information behavior. Participants were first year students between the ages of 18 and 20 in the Sports and Exercise program who were enrolled in an information literacy class. Students' performances were assessed using data from interviews, written work, and focus groups. The authors found that students' information seeking behavior and their information literacy skills improved with the use of appropriate e-learning and face-to-face pedagogical methods.

The use of problem-based learning in information literacy inquiries also appears to be a common practice in higher education. For example, in 2012, Devasagayam, Johns-Masten, and McCollum studied the effectiveness of experiential learning on the critical thinking skills of students. Study participants were upper-level marketing and management majors at a private college in the Northeastern United States. Data were collected from 10 class sections over five semesters in two and a half years starting in 2007. A representative sample of 219 juniors and seniors were given a pre-test, followed by a class lecture, experiential exercises, and then a post-survey.

The experiential exercises (Devasagayam et al., 2012) placed students in a real life scenario where they were required to locate and evaluate information, then present their work in a short period of time. Results of the study indicated that students showed improvements in their ability to evaluate information sources for validity and objectivity. Males received higher scores for online research, compared to females; however, females

improved after the experience while males remained unchanged. Juniors received higher scores for computer use and online research than seniors.

With regard to students' perception of their information literacy skills, Gross and Latham (2007) and Ganly and Gilbert (2013) found that students' over-estimated their information literacy skills. The results of the study by Ganly and Gilbert also showed that students used very little peer-reviewed journal articles but, instead, rely heavily on non-scholarly articles found in newspapers and on popular websites. Additionally, students had difficulty evaluating bias and accuracy in articles and eliminating irrelevant sources. Students were also unfamiliar with citation styles. Several other studies, including those of Stevens and Campbell, (2006) and Polkinghorne and Wilton, (2010) have provided evidence that information literacy is a predictor of personal and institutional development.

Bundy (2002) emphasized the importance of information literacy skills as a prerequisite for the development of both a country's citizenry and its economy. He argued that information literate individuals: (a) would likely acquire the essential skills that support lifelong learning, (b) would be empowered to participate in the democratic process, and (c) would develop skills for accessing and applying information that eventually lead to their country's' economic growth.

Several agencies and organizations have also articulated the importance of information literacy to student success and social and economic development. For example, the Association of American Colleges and Universities (AAC&U) has recommended that information literacy be included as a student learning outcome in higher education (AAC&U, 2007). The Lumina Foundation (2014) lists information

literacy competencies among the intellectual skills required for academic success by students, from the associates' to the master's degree level of education. And, according to the Hart Research Associates (2015), about 68% of employers have communicated that information literacy skills are necessary requisites for workplace endeavors.

Accrediting bodies have also shown strong support for information literacy as a component of academic programs in colleges and universities. For example, in 2003 the Middle States Commission on Higher Education (MSCHE) published a handbook with recommendations for integrating information literacy in the higher education curriculum. They emphasized the importance of students being able to analyze content, create new knowledge, and use knowledge to develop products (*Middle States Commission*, 2003, p. 2). Similarly, the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) have included information literacy as an option in Florida International University's quality enhancement plan as a requirement for reaffirmation of accreditation (Apps & Erazo, 2012; Bright, Askew, Dottin, Driver, & Pearson, n.d.).

Likewise, the ACRL (2000; 2016) has recommended the incorporation of information literacy across the higher education curricula to create lifelong learners with enhanced critical thinking and intellectual abilities. Consistent with these desired benefits of information literacy on student success, in 2009, President Barack Obama proclaimed the month of October as National Information Literacy Awareness Month. The recognition highlighted the benefits of information literacy skills for educational success, for career preparation and for navigating the global marketplace (Obama, 2009).

Despite the research findings and recommendations regarding the importance of information literacy to the higher education curriculum, there is little in the literature

about its relationship to global learning. No existing study was found that explored the relationship between global learning and information literacy.

### **Global Learning**

The concept of global learning is an important component of curricula in higher education. Global learning focuses in part on students' application of critical thinking skills in evaluating and contextualizing information related to national and international issues. By definition, global learning refers to "the process of diverse people collaboratively analyzing and addressing complex problems that transcend borders" (Landorf & Doscher, 2015). Global learning is not a new concept; in fact, it came about in direct response to globalization (CED, 2006; Reimers, 2009; Suarez-Orozco, 2009). The effects of globalization have permeated all aspects of people's lives and have resulted in tremendous benefits such as ease of communication and business transactions, and better systems of transportation. However, negative consequences including, but not limited to, violence, diseases, and environmental problems have also arisen.

Studies in global learning often focus on three main outcomes: (1) global perspective, (2) global awareness, and (3) global engagement, for *global citizenship*. Braskamp and Engberg (2011) conducted a study to find out how students' cognitive, interpersonal and intrapersonal development influence the development of their global awareness, perspectives, and engagement. This study was facilitated by the *Global Perspective Inventory* (GPI), a 64-item instrument that measures holistic student development, on three dimensions – (1) cognitive, (2) intrapersonal, and (3) interpersonal - within the social and academic environments of their college experience.

Within these three dimensions were six items of measurement across the GPI domains: (1) knowing, (2) knowledge, (3) identity, (4) affect, (5) interaction and (6) responsibility. The study was conducted among 5,352 students in 46 private and public colleges during the 2009-10 academic year. Results for this global perspective-taking study were measured in terms of (a) gender, (b) race/ethnicity, (c) age, and (d) class status.

In terms of gender, female students received higher scores on social responsibility, knowing, social interaction, and affect. Males received higher scores on knowledge and identity scales. The report in terms of ethnicity showed that Black and Hispanic students scored higher on the interpersonal and intrapersonal dimensions than White students. The finding on age indicated that older students had higher scores, especially in social responsibility, identity and affect scales.

Though seniors scored highest on all dimensions, the learning differences were most noticeable between the freshman and sophomore years. The researchers concluded, from this outcome, that the highest learning gains on all three dimensions took place during the early college years for “traditional-aged students” (p. 37). Students who were involved in co-curricular activities were found to score high on all three dimensions, especially on the scales for social responsibility where students actively participated in community service. Attending social events was positively associated with students’ level of social interaction, their knowing, knowledge and affect.

Other findings that positively reflected students’ perspective development included enrollment in diversity courses, and study abroad experiences. The researchers



concluded that the infusion of global learning in the curriculum was positively related to the development of students' global awareness, perspective and engagement.

*Global awareness* is defined as “Knowledge of the interconnectedness of local, global, international, and intercultural issues, trends, and systems” (FIU, 2016). Global awareness implies familiarity with and understanding of issues and processes that have local, national and global impact (Gibson et al, 2008; Lemke, 2003; Burnouf, 2004). Students who are globally aware also learn about the benefits and understanding that can accrue when individuals and communities work collaboratively to solve problems that are not confined to national borders (Landorf & Doscher, 2015; Hanvy, 1976).

*Global engagement* is the “willingness to engage in local, global, international, and intercultural problem solving” (FIU, 2016). Globally engaged students are involved in experiential activities both locally and through remote interactions with students in other countries and cultures (Gibson, Landwehr-Brown & Rimmington, 2008; Gillespie, Braskamp & Dwyer, 2009). Global engagement may also include participation in study abroad programs. These activities represent curricular and co-curricular undertakings which, in part, prepare students for global citizenship (Braskamp, Braskamp & Merrill, 2009; Tarrant, Stoner, Borrie, Kyle, Moore, & Moore, 2011).

Tarrant et al., (2011) investigated the relationship between study abroad and global citizenship. The purpose of their investigation was to determine whether students who participated in short-term study abroad programs were likely to support environmental policies relating to justice-oriented, participatory, and responsible citizenship. Study participants were composed of 623 students from 10 universities, who took part in a study abroad program to the South Pacific, during the summers of 2008 and

2009. The data collection method was a pre- and posttest survey with questions addressing environmental and social issues. Study results indicated that study abroad programs are likely to increase support for environmental policies. Tarrant et al. (2011) concluded that study abroad programs are possibly instrumental in fostering global citizenship, particularly in environmental responsibility.

Global engagement activities may also influence an individual's *global perspective*. Landorf & Doscher, (2015) defined *global perspective* in terms of an individual's ability to analyze "local, global, international, and intercultural problems" from multiple points of view. In 2009, Braskamp et al. investigated the influence of study abroad experiences on students' global perspective. The study was conducted in spring 2008 among 245 students enrolled in 10 study abroad programs at five private and public institutions of higher education. The main method for data collection was the GPI. The researchers utilized the pretest and posttest model to measure the potential influence of study abroad on students' global perspective.

Braskamp et al. (2009) found that students improved significantly on all scales of global perspective, except on the scale of knowing. On the basis of these results, the researchers concluded that study abroad experiences are likely to influence students' holistic development in a positive manner. The purpose of involvements, like study abroad, is to support the development of a student's global perspective and to provide them the necessary skills to participate in and interact with members of the global community

In his discussion of competencies required for global citizenship, Becker (1982) outlined four competencies of global citizenship. These competencies are: (1)

competence in perceiving that one is involved in a diverse global society; (2) competence in making decisions, and recognizing their far-reaching local, national and international consequences; (3) capabilities to reach judgements which involve using information to address world problems; and (4) competencies in exercising influence over processes, issues and institutions that shape one's quality of life. Becker argued that the competencies for reaching judgements include the ability to "acquire and analyze information and to use reflective moral reasoning when making judgements about world problems" (p. 230). In the same vein, Case (1993) argued that when individuals are able to analyze information, both individuals and society would benefit in terms of open-mindedness, awareness of differing worldviews and being able to adopt a perspective on issues after analysis of information. Adams and Carfagna (2006) placed analysis of information in the context of solving world problems, and successful citizenship. They conclude that

It is more important to find, analyze and synthesize information to advance knowledge and solve problems. The workers and citizens of the twenty-first century will be successful not because they own more information, but because they locate and use information to find solutions (p. 158).

Adams and Carfagna also argued in support of information literacy skills among the abilities required for achieving global citizenship.

Since the 1990s, a growing number of institutions of higher education have embraced the idea of global citizenship as part of their strategic principles (Lewin, 2009). Many higher education institutions have implemented educational initiatives such as study abroad and service learning, which are aimed at encouraging young people to think

and live as global citizens. The notion of global citizenship is not new. It is believed to have its roots in ancient Greece where Diogenes and Socrates both claimed to be citizens of the world. According to Appiah (2008), Diogenes also espoused the idea of cosmopolitanism, which involves caring for our fellow human beings in our immediate community as well as in the wider world community.

The cosmopolitan ideal is also present in the religious belief that all human beings are the children of God, and hence, are members of the same human family. According to Osler and Starkey (2010), “the concept of the idealized family implies a feeling of belonging and pride in being part of the human community in all its diversity and varied histories, cultures and achievements” (p. 45). As supportive members of the same family, we work together to “raise standards of living by adopting new policies on trade and aid, prevent or treat diseases with vaccines and pharmaceuticals, take measures against climate change, encourage resistance to tyranny and a concern for the worth of each human life” (Appiah, 2008, p. 87). According to Appiah, while an individual has a duty to fulfill his obligations to his own country, he also has the responsibility to work with other citizens of the world to address worldwide problems.

### **Grade Point Average (GPA)**

In researching the concept of student success and language, Zwick and Sklar (2005), investigated the accuracy of high school GPA and scholastic aptitude test (SAT) scores in predicting first year college grade point average (FGPA) and college graduation among English-language minorities. The groups identified for this study were native Spanish speakers and native English speaking Hispanics, African Americans and Whites from the High School Background (HSB) longitudinal study conducted between 1980

and 1992. Using regression analyses, Zwick and Sklar (2005) found that high school GPA was a stronger predictor of FGPA than SAT scores. However, the researchers found that the predicted FGPA for the Black/English and Spanish/English groups was higher than was attained – suggesting an over-prediction.

Using survival analysis to estimate college graduation rates, Zwick and Sklar (2005) found that 82% Whites were likely to graduate within five years compared to between 50% and 66% of the other groups. High school GPA and SAT scores were significantly correlated with graduation for White English-speaking natives, while SAT scores only were related to graduation rates for the Hispanic/English-speaking group. Native Spanish speakers were found to have higher college grades than Hispanic/English speakers with similar academic backgrounds.

### **Class Status**

Class status refers to the academic attainment of students in their academic careers. A college student's class status is measured by the level of academic work and average number of college credit hours earned by the end of the academic year. Hence, the college freshman is a student who is in the process of completing a predetermined number of college credit hours in his first year of college. Sophomores, juniors and seniors are, respectively, in their second year, third year and fourth (and final) year in college. Scholars have often argued that there is a correlation between students' class status and their academic success in postsecondary education. For instance, Fauria and Fuller (2015) employed hierarchical modeling and data from the National Survey of Student Engagement (NSSE), between 2010 and 2011, to study students' purposeful educational activities. The authors found that students classified as transfer students tend

to have lower GPA than those classified as non-transfer students. In this same line of findings, Ishitani, (2008) used longitudinal analysis to study the relationship between GPA and retention rates among freshman, sophomore, and junior transfer students in a postsecondary institution.

The main objective of Ishitani's (2008) study was to compare persistence of freshmen, sophomores, and juniors who transferred between higher postsecondary institutions. The results show, among other things, that freshman transfer students were less likely than non-transfer students to be retained, as indicated by a 36% retention rate compared to 52% retention rate respectively. At the same time, sophomore and junior transfers persisted longer than both the non-transfer and junior transfer students. Similarly, Graunke and Woosley (2005) studied the academic success of college sophomores. Particularly, the authors investigated whether the success of sophomore students in a public residential Midwest university was influenced by attitudes and participation in academic activities.

Using survey data and multiple regression analysis, Graunke and Woosley (2005) found that demographic variables such as gender, ethnicity, transfer status, and enrollment in the honors program exerted a significant influence on sophomore success. It was also found that students who confirmed their majors, and were satisfied with their levels of interactions with faculty and staff, had higher grades and were more likely to be motivated and focused than those who did not declare majors.

Sakiestewa, (2000) studied students enrolled in bridge programs at an Indian American academy. The author's main objective was to investigate the achievements of pre-college sophomore and junior high school students in the areas of math, English and

career development. Using a two-tailed test to analyze the data for 135 students, the researcher found that all students significantly improved their math, English and career development scores regardless of gender, grade levels and type of school attended. A grade level comparison showed that sophomores had a post-test gain of 2.06 points and juniors had a 1.72 points gain. Though sophomores had a larger points gain, their overall gains was 4.44 compared to 4.48 for juniors.

Sakiestewa (2000) also reported that both sophomores and juniors showed significant improvements in the English language test by 2.07 and 1.95 points. However, juniors had a higher overall score of 6 compared to 5.68 for sophomores. These findings of correlation between class status and student success have indicated the usefulness of class status as a predictor of student success. Consequently, this inquiry employed class status as an explanatory variable.

### **Gender**

It is the belief of some scholars in education that differences in students' academic achievements are often gender related. For example, Kena et al. (2014) reported that female students, in United States higher education system, outperformed their male counterparts by 7% in the attainment of a bachelor's degree between 1990 and 2013. This was based on the fact that females had a completion rate of 37% compared 30% for males. In addition, between 1995 and 2013, female students had a 9% completion rate at the level of master's degree or higher compared to 6% for their male counterparts. Bailey, Jenkins, and Leinbach (2005), who studied academic outcomes among African American students in community colleges, reported similar outcomes.

Earlier, Davis (1994) compared the academic outcome of Black males enrolled at historically Black colleges (HBCUs) with those enrolled at predominantly Whites colleges and universities (PWIs). Using the 1988 Nettle's Survey of college students' academic and social experiences, and regression analyses, Davis found that Black males who attended predominantly White colleges were academically prepared, and were likely to be from high socioeconomic backgrounds. However, comparatively, Black males in PWIs tend to earn lower grades than males who attended Black colleges.

Similarly, Chen, Ingram, and Davis, (2014) also provided evidence of a relationship between student success and gender. Particularly, the authors compared the levels of satisfaction and engagement of those who were enrolled at HBCUs and those who were enrolled at predominantly White universities (PWIs). Using hierarchical analysis of data from the 2013 National Survey of Student Engagement (NSSE), the researchers found that the relationship between student satisfaction and gender was not significant at both types of institutions. While students were found to be satisfied with their GPA at both the HBCUs and the PWIs, satisfaction was greater at the HBCUs where academic challenge was greater than at the PWIs.

The effect of motivation and emotions and their influence on the persistence and achievement of male and female students in science, technology, engineering and mathematics (STEM) programs was conducted by Simon, Aulls, Dedic, Hubbard and Hall (2015) in Quebec junior colleges. In light of the high levels of student attrition and low enrollment rates in the STEM programs, especially by females, this study investigated the reasons students leave the science programs for non-science majors. The data for 1,309 junior college students and recent high school graduates were analyzed by



structural equation modeling to predict STEM enrollment decisions with attention to male and female differences. Simon et al., (2015) found that students with greater self-efficacy and independence were motivated to persist in science. In terms of gender differences, female persistence were mainly influenced by their self-efficacy beliefs and achievement goals. Males, on the other hand, were mainly motivated by their perception of support by their instructors.

A study by Sakiestewa, (2000) focused on students' success in a science summer bridge program, with attention to gender differences, among pre-college students from Indian nations in the states of Arizona, Utah, Colorado and New Mexico. The background data for male and female students in public and private schools along with their scores from the summer program, were analyzed using a two-tailed test. The researcher found that all students significantly improved their math, English and career development scores regardless of gender.

The math results by gender, as reported by Sakiestewa, (2000), showed that females had a 2.07 points gain compared to a 1.56 points gain for males. At the same time, the results of the English language instruction proved to be advantageous to male students as they improved by 2.03 points while female students improved by only 2.01 points. These gender-related outcomes tend to run contrary to that of Shields, Hewitt, and North, (2010), who found no significant difference in student success by gender in their study of student success among science majors.

In summary, these studies show that gender can be a factor in student achievement. Kena et al. (2014) found that females outperformed males in educational attainment at the bachelor's and master's degree levels, and Black males who attend

Black colleges were more likely to perform better than their counterparts who attend PWIs (Davis, 1994). Males were more likely to persist in STEM degree programs than females while male and female students were found to be differently motivated to pursue STEM degree programs (Simon et al. 2015). Mixed results were found regarding academic attainment for males and females, as was reported by Sakiestewa, (2000).

### **Socio-Economic Status (SES)**

Many studies in education have stressed the importance of socioeconomic status (SES) as a predictor of student academic outcomes. SES in this sense, is defined as a family's household income (National Forum for Education Statistics, 2015). Between 1988 and 2000, Baker (2009) studied college degree and career pathways of students using longitudinal analysis. Baker found, among other things that a direct relationship exists between household income and student success. Particularly, the researcher found that the baccalaureate completion rate for students from high-income households (\$70,184 or more) was 75.5%, compared to 20% for students from low-income households (\$15,000 or less).

In the state of Florida, Borg, Plumlee, and Stranahan (2007) studied student success in the Florida Comprehensive Achievement Test (FCAT). The authors' main objective was to investigate the effects of FCAT requirements on high school completion rates. They analyzed FCAT and other explanatory data, including the household income of 10<sup>th</sup> graders between 1999 and 2000. Analytic results indicated a direct relationship between SES and FCAT pass rates. In fact, the authors found that students from households with income of \$30,000 or more, had a 60% chance of passing the FCAT

exam; while students from households with income of \$10,000 or less, had only a 30% chance of passing the FCAT exam.

The direct relationship between SES and student outcome observed by Baker (2009) and Borg et al. (2007), was also so reported by Patterson and Pahlke (2011) who explored connections between the success, of girls in a single-gender public middle school, and demographic and academic variables. Patterson and Pahlke (2011) investigated whether family income and prior academic achievement were accurate predictors of student success. This longitudinal investigation, which spanned 2007 to 2009, supported the hypothesis that family income positively influences student success, especially at high-income levels.

Using structural modeling analysis, Yavuz (2009) investigated the effect of SES on students' success in math and science. The author studied Turkish students' success in a standardized Education Institutional Exams (OKS). This exam qualifies students for admission to selective high schools, which in turn prepares them for admission to universities with competitive science programs. The authors reported that family income was directly related to increases in students' math and science scores. Student success was also tied to fathers' education since the most educated fathers in Turkey were the highest income earners. This means that fathers had the ability to pay for private tutoring for their children who, in turn, received high scores in math and science. These findings of direct relationship between SES and student success, dictates that SES is a strong predictor of student success.

## **Academic Discipline**

Examples of research comparing undergraduate student success across academic disciplines are rare. Discipline-specific studies examine a variety of concepts other than student academic performance. For example, Breen and Lindsay (2002) investigated undergraduate students' motivation for learning and contribution by disciplines. The study was conducted among students who majored in biology, history, computing, planning, anthropology, geology, food science and nutrition, and education programs. The results showed that students' confidence in their abilities was important for five of the eight disciplines. Interest in the subject was also important.

The researchers concluded that discipline-specific knowledge, expectations, and enjoyment of discipline-specific learning tasks were important to students' persistence and success. Additionally, incentives were found to explain 11-52% of variances in student assessment. The findings in the research by Suliaman and Mohezar (2006) were also discipline-specific; they used students' GPA as the measurement for success in a business program. Their findings showed that undergraduate academic discipline is a predictor of students' academic performance within a specific graduate program.

Brint, Cantwell and Saxtena (2012) investigated whether students' academic discipline made a difference in their analytical and critical thinking experiences. The study which was conducted among students in physical sciences, life sciences, engineering, social sciences, humanities, and the arts, found no high level of difference among the disciplines. However, the results of the study indicated that students in the sciences, particularly biology, chemistry, and engineering, spent more hours studying than students in the social sciences and humanities.

A study by Veenstra, Dey, and Herrin (2008) compared the academic performances of engineering and other students to identify factors that contribute to academic success of engineering students. Engineering students were compared to students in pre-med, STEM and non-STEM disciplines, using factor and regression analyses. The researchers found that SAT scores, high school GPA, and first year college GPA were significant predictors of student success. The major differences between students in engineering and in other disciplines were the levels of confidence in math and computer skills, knowledge of math and science, and career goals.

### **Analytic Models**

In addition to the research findings, this literature review also provides information about the analytical approaches employed in the different studies.

Some of these analytic approaches include, but are not limited to structural equation modeling (SEM) (Davis-Kean, 2005; Simon, Aulls, Dedic & Hubbard, 2015); hierarchical linear modeling (HLM) (Chen, Ingram, & Davis, 2014; Greene, Marti, & McClenney, 2008); regression analyses (Borg et al., 2007; Davis, 1994; Kuh et al, 2008; Patterson & Pahlke, 2011; Shields, Hewitt & North, 2010); Van der Veen, 2003; and ANOVA (Martirosyan et al, 2015). The current study employed a member of the regression family in the form of a multiple regression model with dummy variables, also called dummy variable regression. The reason for this classification is that the model included continuous and categorical variables (Hinkle et al., 2003).

### **Chapter Summary**

This chapter reviewed the literature relevant to information literacy and global learning and presented literature that focused on factors such as information literacy,

global learning, socioeconomic status, class status, gender and academic discipline, which are likely to have some bearing on student success. The analytic models of prior studies were also explored. Chapter 3 discusses and reviews the methodology used in the study. Chapter 4 presents the results of this study, and Chapter 5 reviews the results described in Chapter 4 in relation to the research questions, the hypotheses and the literature.

## **CHAPTER III**

### **METHODOLOGY**

The purpose of this study was to investigate the relationship between undergraduate student performance on an information literacy assessment activity and their performance in global learning assessment activities.

#### **Research Questions and Hypotheses**

With the problem of uncertainty about how information literacy is related to global learning, and the desire to investigate this relationship, three important research questions have arisen. The questions are:

##### **Research Question 1**

Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global awareness assessment activity?

##### **Research Question 2**

Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global perspective assessment activity?

##### **Research Question 3**

Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global engagement assessment activity?

To evaluate the stated research questions, three sets of null hypotheses were tested.

**Null Hypothesis 1:**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global awareness assessment activity.

**Null Hypothesis 2:**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global perspective assessment activity.

**Null hypothesis 3:**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global engagement activity.

To facilitate this research process, a methodological approach that included: research design, model development, variable description and data sources, survey and information literacy component, setting and participants, sampling, sample size determination, data collection procedures, and test of statistical assumptions was implemented.

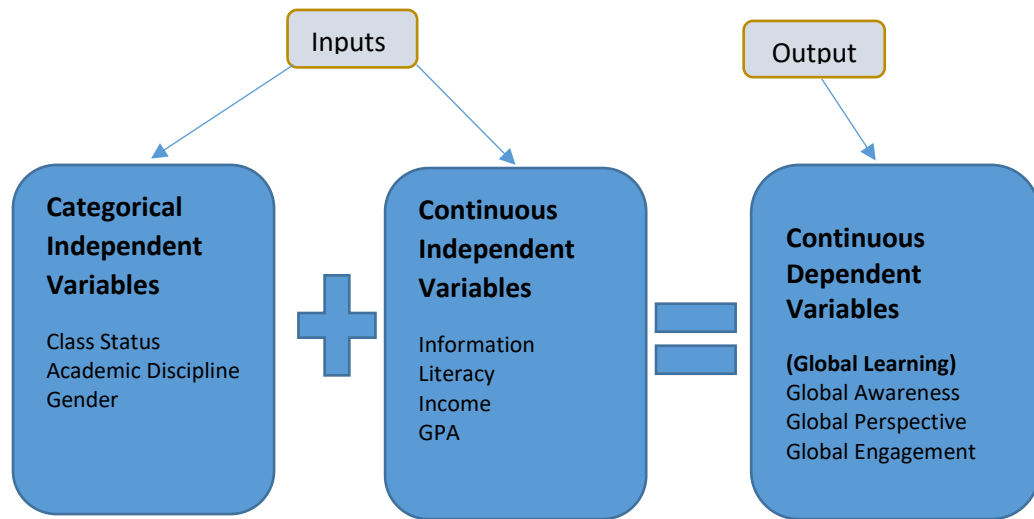
**Research Design**

This inquiry was developed using a non-experimental design. The type of non-experimental study conducted herein is often represented as an input-output design that relates a dependent/output variable to a set of independent/input variables (See Fig. 1). The input-output approach is non-experimental and observational in the sense that, there is no manipulation of input variables (Ary, Jacobs & Sorensen, 2010; O'Dwyer &



Bernauer, 2014). Instead, this inquiry sought to investigate the relationship between input and output variables using observational data.

The input (independent) variables in this study are both categorical and continuous in characteristics, with information literacy being the main input (independent) variable, and global learning as output (dependent) variable. The three global learning outcomes (global awareness, global perspective, and global engagement) were proxies for global learning in this study, and were independent variables in this investigation with three separate regression models created to facilitate analyses of data. In conceptual form, the input/output model may be represented in Figure 1.



*Figure 1.* Input and output model with variables

In this model, global learning represents the output variable, and was measured as student scores received on assessment of one global learning activity for each of the three global learning outcomes: global awareness, global perspective and student engagement.

The main independent variable was information literacy, the scores of which came from an information literacy assessment that was embedded in a survey administered to survey participants. The remaining independent variables, also designated as control variables, included: household income (socioeconomic status), class status, academic discipline, gender, and grade point average.

### **Model Development**

The input/output model can be written in functional form as:  $GL (GA, GP, GE) = f(IL, I, CS, D, G, GPA)$ ; where  $GL$  = global learning, ( $GA$  = global awareness,  $GP$  = global perspective,  $GE$  = global Engagement),  $IL$  = information literacy,  $I$  = household income/socioeconomic status,  $CS$  = class status,  $D$  = academic discipline,  $G$  = gender, and  $GPA$  = grade point average. In explicit form, these models can be written as:

Model 1: Global Awareness as dependent variable:

$$Y_1 = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \varepsilon$$

Model 2: Global Perspective as dependent variable:

$$Y_2 = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \varepsilon$$

Model 3: Global Engagement as dependent variable:

$$Y_3 = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \varepsilon \text{ (Hinkle et al., 2003).}$$

Where:

$Y_1$  = Global Awareness

$Y_2$  = Global Perspective

$Y_3$  = Global Engagement

$x_{i1}$  = Information literacy

$x_{i2}$  = Income/Socioeconomic Status (SES)

$x_{i3}$  = Class status

$x_{i4}$  = Academic Discipline

$x_{i5}$  = Gender

$x_{i6}$  = GPA

$\beta_0$  = Intercept of the model

$\beta_1 \dots \beta_n$  represent regression coefficients (partial slopes) of the overall predictor model

$\varepsilon$  = Error term.

The type of input/output model is a member of the family of analytic models called regression (Cohen et al., 2003). The specific model is called a multiple regression model with dummy variables, also referred to as dummy variable regression. It is categorized as dummy variable regression because it comprises variables with continuous and categorical properties (Ary et al., 2008; Cohen et al., 2003; Green & Salkind, 2011; Huck, 2012). The model for this present study includes four continuous variables (GL, IL, GPA, I) and three categorical variables (CS, G, D).

## **Variables Description and Data Sources**

### **Dependent Variables**

The dependent variable for this inquiry is *Global learning (y)*, and it is represented by GA ( $Y_1$ ), GP ( $Y_2$ ), and GE ( $Y_3$ ). Data for  $y$  came from students' scores on global learning activities representing each of GA, GP, and GE. Professors scored all assessments for global learning activities with the aid of analytic rubrics which outlined the criteria for assessment. A rubric is "a set of rules that allow tasks or activities to be scored" (Lerner & Lerner, 2006). It has predetermined standards of performance,

organized in categories with expected outcomes in a narrative format. In addition to helping the instructor to assess student performance on an assignment, it also provides students with clarity regarding performance expectations and students are able to see how the instructor grades their work (Shuman, Olds, & Besterfields-Sacre, 2015).

Rubrics may be analytical or holistic. An analytic rubric will outline, in detail, the criteria for assessment of the students' assignment. For example, a students' group presentation for a global awareness assignment may be assessed in terms of students' knowledge of the subject matter, their organization of the presentation, collaboration within the group, and their appearance/professionalism and creativity during the presentation. The rubric would be organized in columns and rows with the performance criteria in the left column, and performance levels listed in the top row. Descriptions of expectations for each performance level would be listed in the middle boxes. The instructor would score each criteria, independently, by circling the level of performance that matches the students' performance on that assignment. An assignment may be graded on a scale of 1-5 with 1 being "poor" and 5 being "excellent." Holistic rubrics are mainly used to score assignments in summative assessments, usually at the end of a course, semester, project, or school year. When using a holistic rubric, a single scoring criteria is stated (Lerner & Lerner, 2006). The dependent variables in this present study were assessed by analytic rubrics.

### **Independent Variables**

There are six independent variables in the model: (1) information literacy ( $x_{i1}$ ), (2) Income ( $x_{i2}$ ), (3) class status ( $x_{i3}$ ), (4) academic discipline ( $x_{i4}$ ), (5) gender ( $x_{i5}$ ), and (6) GPA ( $x_{i6}$ ).

### **Information Literacy (X<sub>1</sub>)**

Information literacy is the primary independent variable, while the others are considered control variables. Data for information literacy represent the scores students received from taking an information literacy assessment exercise (questions #7-24) which was included a 31-point data collection survey used for the study. Students were expected to demonstrate proficiency of knowledge in: (a) assessment of information needs, (b) information search strategies, (c) information resource, and (d) economic, legal and ethical implications surrounding information use. Further description of the assessment activity is provided in the Survey and Information Literacy Component section below.

### **Income/Socioeconomic Status (X<sub>2</sub>)**

In the survey, SES data were collected using household income levels as proxy. Participants were asked to select a household income category that best represent the combined annual income of the home in which they live. The income categories were: Under \$25,000; \$25,000 to \$49,000; 50,000 to \$74,000; \$75,000 to \$ 99,000 and \$100,000 and above. Household income was represented by question #29 on the survey.

### **Class status (X<sub>3</sub>)**

In this study, class status data were collected based on whether a student is considered: (a) freshman, (b) sophomore, (c) junior, (d) senior, or (e) not sure. Survey question #1 asked students to select one of the four class statuses that best represents them. Each of these class statuses were coded into dummy variables as zero or one (0, 1) to facilitate analysis of this categorical variable. For example, the freshman class status was coded as 1= freshman, and 0 = otherwise (Ary et al., 2010; Cohen et al., 2003). In the actual data analyses, the class status for seniors was used as reference group.

#### **Academic Discipline (X<sub>4</sub>)**

Data for academic discipline were collected from question #31 on the survey instrument, which asked each participant to select a college, or school of his/her major. Participants chose from among 11 academic disciplines: (1) College of Arts, Sciences and Education; (2) College of Business; (3) College of Communication, Architecture & The Arts; (4) College of Engineering & Computing; (5) College of Law; (6) College of Medicine; (7) Nicole Wertheim College of Nursing & Health Sciences; (8) Robert Stempel College of Public Health & Social Work; (9) Honors College; (10) Chaplin School of Hospitality & Tourism; and (11) Steven J. Green School of International & Public Affairs. Because academic discipline is a categorical variable, each discipline was coded into a dummy variable as; 1= a student's major, and 0 = otherwise. The College of Engineering & Computing was designated to serve as the reference group for the disciplines in data analyses.

#### **Gender (X<sub>5</sub>)**

Data for gender were collected from participants' response to question #25 on the survey. Question #25 asked students choose one of three gender descriptions that best represents them. The three gender descriptions were: male, female, and "other." The gender variable is categorical in characteristic, and as such, each category was dummy coded in to zeros and ones (0, 1), with female serving as the reference group for data analyses.

#### **Grade Point Average (GPA) (X<sub>6</sub>)**

In this study, data for grade point average were collected by asking each participant to select the range of GPA that best described their overall academic

performance. The range of GPAs was taken from the University's GPA chart, with listings from 2.00 to 4.0, on a 4.0 scale.

### **Language (X7)**

Language was represented by question #26 on the survey. Participants were asked to indicate whether they spoke one or more languages in addition to English. Because this was a categorical variable, participant responses were coded as 1 = yes (for one or more languages), and 0 = no (for English only).

### **Survey and Information Literacy Assessment Component**

The data for information literacy in this study were generated from a 31-point survey (See Appendix E), tailored on "*Beile's Test of Information Literacy for Education*" instrument (Beile O'Neil, 2005) and on the National Survey of Student Engagement (NSSE). An 18-question information literacy assessment was embedded within this 31-point survey. The 18-question information literacy assessment was used to test students' proficiency of knowledge in information research and evaluation, and their ethical use of academic information. The information literacy questions were formatted in Likert scale and multiple choice questions forms, and were mapped (See Appendix B) to the ACRL's (2015) *Framework for Information Literacy for Higher Education* (See Appendix A).

To address potential issues of validity and reliability, the survey was evaluated by four information literacy and library experts, using a table of specifications, (See Appendix C). These experts also provided inter-rater reliability. These information literacy experts are practicing librarians in three academic institutions of higher education.

After expert evaluation, the survey was pilot tested with 15 preservice teachers, in a global learning course, in summer of 2016. Data collected from the pilot study were evaluated for comprehension and consistency using an item analysis approach. The overall item analysis showed on average that, the percentage of respondents who selected correct answers to survey questions ranged from a low of 13% to a high of 80%. The range of values suggested that there is no established pattern of responses, and hence, variability exists within and among the questions, which is highly desired in quantitative studies.

After the pilot study, the full survey was rolled out in six global learning courses, and 257 valid student responses were obtained. The resulting data for information literacy and global learning scores were subjected to the Gauss-Markov conditions/statistical assumptions; outliers, linearity, normality, multi-collinearity, and homogeneity of variance. During these statistical tests, the data series for global engagement was subjected to a log 10 transformation because it did not conform to the statistical assumptions of normality. Tests of these statistical assumptions are described in the section entitled *Tests Statistical Assumptions* section below.

### **Setting and Participants**

This study was conducted at Florida International University, a public higher education institution in Southeast Florida. The student population at this institution comprises approximately 55,000 students, representing 61% Hispanic, 15% White, 13% Black, 4% Asian or Pacific Islander, and 7% of other ethnic make-up (Florida International University [FIU] 2016b; FIU, 2016c).



Survey participants were undergraduate freshmen, sophomore, juniors and seniors enrolled in one of the following six global learning courses: (1) Comparative Criminal Justice Systems (CJE 4174); (2) Cultural and Social Foundations of Education (EDF 4604); (3) Technology, Humans and Society (EGS 1041); (4) Health without Borders (IDS 3183); (5) Sustainable Tourism Practices (HFT 3701); and (6) Developing a Global Perspective (SSE 4380).

Prior to graduation, all undergraduates at this university are required to complete at least two global learning courses, and participate in co-curricular activities to augment classroom theory with practical skills necessary for global citizenship (Landorf & Doscher, 2015). Skills in global awareness, global perspectives and global engagement promote students' (a) understanding of interactions among countries and systems; (b) collaborative analysis of global problems and search for potential solutions; and (c) willingness to participate in local, national and international problem-solving activities.

### **Sampling**

In the data collection process, a purposive sampling approach was employed. In the approach, participants were selected based on common or shared criteria (Ary et al., 2010; Huck, 2012; O'Dwyer & Bernauer, 2014). This present study surveyed students, who were enrolled in one of six global learning courses, during the final five weeks of the fall 2016 semester. The six courses shown in Table 1 were offered in 10 sections.

Table 1.

*Global Learning Courses and Sections*

Courses in the Study	No. of Sections
CJE 4174 - Comparative Criminal Justice Systems	4
EDF 4604 - Cultural and Social Foundations of Education	2
EGS 1041 - Technology, Humans, and Society	1
IDS 3183 - Health Without Borders	1
HFT 3701 - Sustainable Tourism Practices	1
SSE 4380 – Developing a Global Perspective	1

**Sample Size Determination**

The number of participants required to facilitate this study was determined using an empirical sample size determination formula. This empirical approach can be written

as:  $n = \left(\frac{z\sigma}{E}\right)^2$

Where:

$n$  = the required sample size,

$z$  = the standard normal value corresponding to the desired level of confidence,

$\sigma$  = the population standard deviation,

$E$  = the maximum allowable error (Lind, Marchal & Wathen, 2012).

To derive the standard normal value corresponding to the desired level of confidence ( $z$ ), a 95% level of confidence was selected, thus resulting in a  $z$ -value = 1.96 (Lind et al., 2012). To derive the population standard deviation ( $\sigma$ ), enrollment data for students in five global learning courses were collected across three spring and two fall

semesters. These prior enrollment data (See Appendix D) were used to compute the standard deviation ( $\sigma = 55$ ) required for the sample size determination formula.

The maximum allowable error component of the sample size determination formula was estimated at 10 students per class. On the basis of this allowable error component, it was estimated that about  $\pm 10$  students were likely to enroll in the selected global learning courses. Substituting  $z = 1.96$ ,  $\sigma = 55$ , and  $E = 10$  into the sample size determination formula  $n = \left(\frac{z\sigma}{E}\right)^2$  generated a sample size  $n = 117$ . The actual number of surveys collected was 280, and after screening for response error, the final sample size for information literacy resulted in 257 observations.

### **Data Collection Procedures**

Study participants were selected through the process of purposive sampling. Students were identified because they would have taken or were enrolled in an undergraduate global learning course. Efforts were also made to include courses taught by professors who had exposed their students to information literacy in the past. These efforts included identifying courses and contacting professors who participated in a prior information literacy study conducted in 2015 - 2016. After courses were identified, email invitations were sent to professors who were scheduled to teach in fall 2016 semester. Two professors from the previous study agreed to participate in this study.

Data collection procedures began in summer of 2016 when IRB-approved letters (See Appendix J) of request to participate were emailed to professors and some chairs of the selected undergraduate global learning courses. After a second set of requests were sent in early September, 10 professors agreed to participate. Follow-up communications

with professors, included agreement on dates for survey administration and requests for scores of global learning activities.

Survey administration began in the last week of October 2016, with in-person data collection in five face-to-face classes, with the remaining five online through Qualtrics. Links to the online Qualtrics survey, and consent form (See Appendix J) were emailed to professors, at the beginning of the data collection period. Letters reminding students to complete the surveys were emailed to professors for all online participants in the second week of administration. At the end of the data collection period a total of 280 surveys were received, 78 of which were online responses.

Follow-up emails to professors regarding scores of three global learning activities were made in the second week of November 2016, and scores were collected from two professors. The professors for EGS 1041 (Technology, Humans and Society) and HFT 3701 (Sustainable Tourism Practices) provided students' scores for class activities in global awareness (GA), global perspective (GP) and global engagement (GE).

To assess for global learning outcomes, students in both classes were required to collaborate and create a written report and give a group presentation (See Appendix K - Assignment Description). These activities were assessed with a 5-point and 4-point analytic rubric for the EGS 1041 and HFT 3701 classes, respectively. The students in both classes were expected to earn a minimum of 3 points for the completed projects.

These assignments allowed for students to show their cognizance of and the interconnections among “local, global international and intercultural issues, trends and systems” (FIU, 2016) which relates to global awareness. For example, in HFT students were asked to “Examine what stage of the destination life cycle it is in, what type of

tourists it attracts, and what major impact tourism has on the environment, society and culture as well as the local economy” (HFT 3701 course syllabus). The activities for both classes required students to work in groups and analyze and present a subject from multiple points of view (such as economic, political, historical, environmental and cultural) to demonstrate their growth of global perspective. Finally, in the EGS 1041 class students had to write an individual short essay discussing actions that can be taken locally, globally, internationally, and culturally to address the impact of modern technology on the quality of life. In the HFT 3701 class students are required to describe what can or is being done in their chosen tourist destination to enhance sustainability. These two activities address the global engagement outcome.

Overall, the activities for GA, GP and GE were similar, the scoring methods were similar and the percentage of final scores were similar. After all scores were collected, those for the three global learning activities and for the information literacy assessment could be matched for 43 students. The GA, GP and GE scores for these 43 students were analyzed for their relationship with information literacy, using multiple regression correlation analysis (Cohen et al, 2003; Huck, 2012).

### **Tests of Statistical Assumptions**

To ensure accuracy of the research outcomes, a series of statistical assumptions, often referred to as statistical controls, were evoked and tested (Osborne & Waters, 2002; Poole & O’Farrell, 1971). In other words, the test of statistical assumptions was used as a control measure for issues of validity and reliability and to account for lack of randomization. According to Osborne and Waters (2002):

...we have a rich literature in education and social science, but we are forced to call into question the validity of many of these results, conclusions, and assertions, as we have no idea whether the assumptions of the statistical tests were met (p. 1).

Poole & O'Farrell asserted that for regression analysis "to be totally valid" it "requires that so many assumptions are satisfied" (p. 152). These assumptions include those for normality and linearity.

In this multiple regression study, five primary statistical controls were evaluated. The statistical controls of interest include: (1) outliers, (2) linearity, (3) normality, (4) homogeneity of variance and (5) multicollinearity (Lomax, 1998). Once all the research data were collected, statistical assumptions were tested, and where necessary, adjusted before being fitted into the regression model. The outcomes of testing and adjustments are described hereafter.

### **Outliers**

Outliers are extreme values found in a series of data. The presence of outliers will distort the (a) mean of the distribution, (b) the standard deviation, and (c) the shape of the distribution. The presence of all three abovementioned conditions will also affect interpretation of the overall data analysis and accurate reporting of results. Huck (2012) posits that outliers may occur when survey respondents (a) do not understand the instructions, (b) do not make an effort to correctly answer the questions posed or (c) they deliberately attempt to "sabotage" the investigation (p. 41). Outliers can be identified by using a boxplot (Hinkle et al., 2003; Huck, 2012). To prevent the occurrence of problems

associated with outliers, it is recommended that these extreme values be removed from the dataset prior to further data analysis (Cohen et al., 2003; Huck, 2012).

In this study, tests for outliers were conducted on all variables using boxplots in SPSS. Initial test results of these plots indicated the presence of extreme values in four variables: global awareness, global engagement, race/ethnicity and discipline (See Appendices 6, 7, 8 and 9). Data identified as outliers in each variable were cross-referenced for entry errors, by comparing actual survey responses with data in the final data matrix. Entry errors identified were corrected by replacing outlying values with original values from the surveys. There were three cases of identified outliers that required removal from the data matrix – one from awareness and two from global engagement.

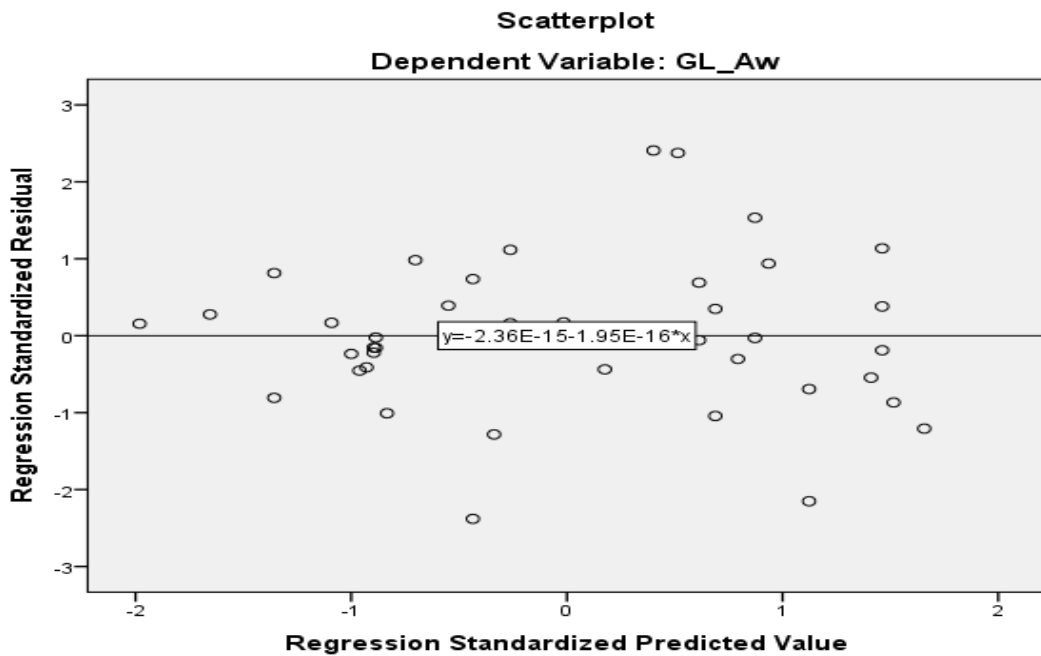
### **Linearity**

Linearity is a condition that requires a straight-line relationship between the dependent variable and the covariate (Ary et al., 2010). In other words, the rate of change in the scores for both variables will remain constant for the entire range of data. That is, a change in one variable will result in a corresponding change in the other. In multiple regression, the relationship between the dependent variable and the covariate is assumed to be linear. Linearity signals that there is no bias in the relationship between the dependent or output variable and the independent covariate. Failure to achieve linearity will result in bias relationships between dependent and independent variables.

A test of linearity is often conducted using a scatter plot, (Green & Salkind, 2011). If linearity exists in the data, the scatter plot will show the data points scattered along the straight line. Correcting for linearity can be accomplished by transforming the

data series using logarithmic methods, to achieve a linear relationship (Lomax, 1998; Hinkle et al., 2003). In this study, test of linearity was done by regressing dependent variables (global awareness ( $Y_1$ ), global perspective ( $Y_2$ ), and global engagement ( $Y_3$ )) and independent variables followed by a plot of predicted values vs. residuals.

Results of plots for *global awareness, global perspective, and global engagement* show randomly scattered residuals about a zero line (See Figures 2; 3; 4), thus indicating the presence of linearity among the continuous dependent and independent variables (Hinkle et al., 2003). Because these tests of linearity revealed no anomalies, no corrections or adjustments were made to the research models.



Figure

2. Plot of residuals vs. predicted values global awareness ( $Y_1$ )



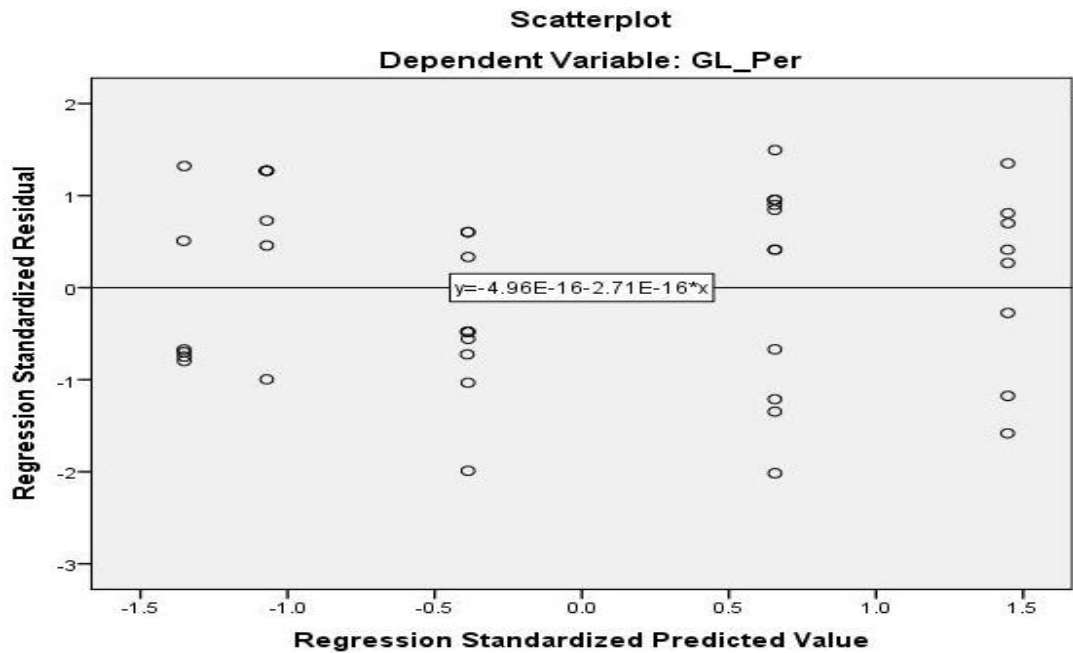


Figure 3. Plot of residuals vs. predicted values global perspective ( $Y_2$ )

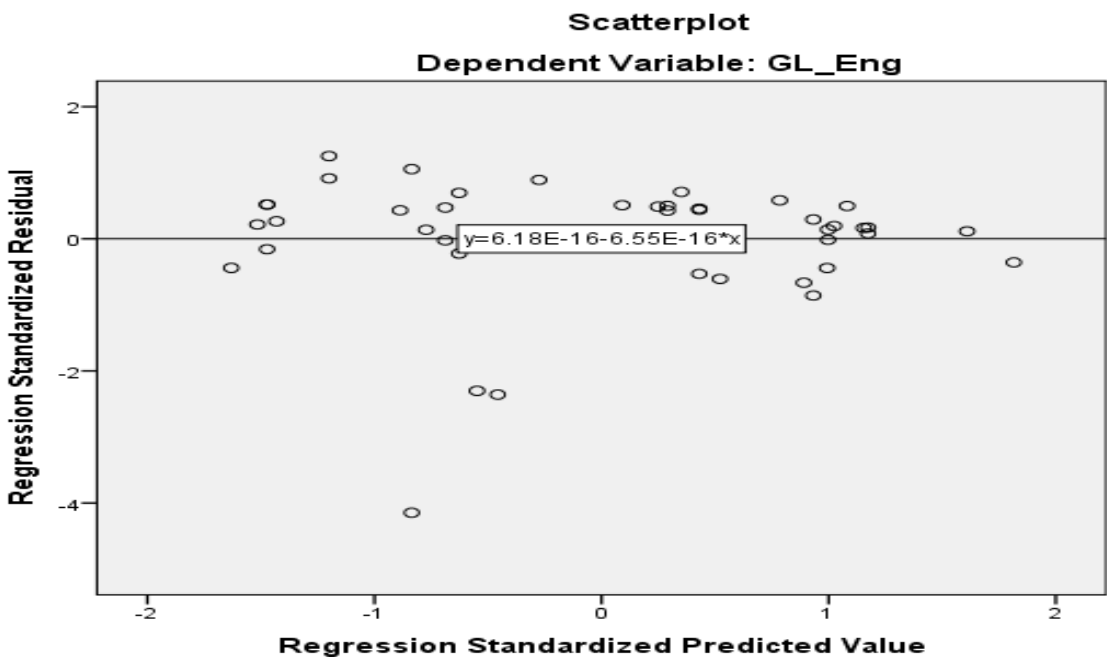


Figure 4. Plot of residuals vs. predicted values global engagement ( $Y_3$ )

### Normality

The normality assumption refers to a condition where all values of the input and output variables are distributed with symmetry. In other words, the data points of a

variable forms a bell-shape about the mean of the series. When data are normally distributed, the values for different populations within the distribution are easily compared. If a data series has issues of normality, its distribution will be skewed where data points may also cluster around the mean with very few dispersion in the tail of the distribution, or values may converge in the tail of the distribution (Cohen et al., 2003; Lomax, 1998). Regression coefficients/slope might not provide valid outcomes.

Test for normality can be conducted using the Shapiro-Wilk test (Lomax, 1998) and visual examination of the histograms and plots. The presence of non-normality requires data transformation that might include converting all values in the distribution to  $z$ -scores (Boslaugh & Watters, 2008), or by square root, or log 10 transformations. In this study, tests of normality were conducted for all quantitative variables in the regression model: (1) global awareness, (2) global perspective, (3) global engagement, (4) information literacy, (5) household income, and (6) grade point average. Visuals for Q-Q plots and histograms were examined for non-normality. For the dependent variable, *global awareness* ( $Y_1$ ), a visual of the Q-Q plot showed that the figure was approximately normal (see Figure 5). Hence, there was no need to transform the data. This acceptance of normality is supported by the Central Limit Theorem which says that when the sample size, which in this case was 43, is significantly larger than 30, the sampling distribution is close to normal “even if the population is not normally distributed” (Hinkle et al., 2003, p. 164).

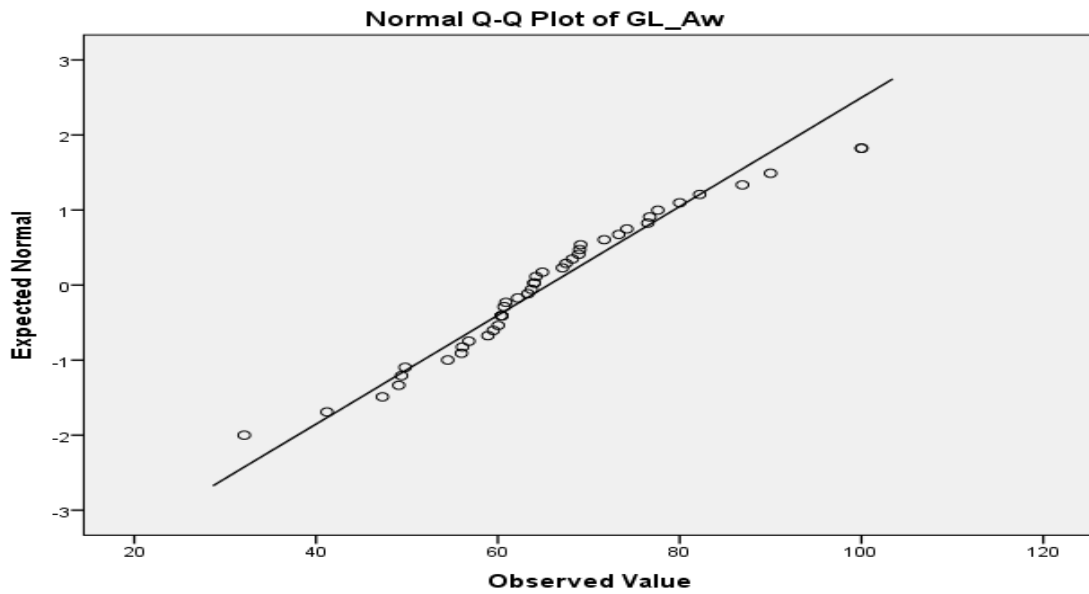


Figure 5. Q-Q plot of Global Awareness

For the dependent variable *global perspective* ( $Y_2$ ), a visual of the Q-Q plot showed that the figure was not normally distributed (See Figure 6). Test of normality showed negative skewness with coefficient of -0.251 (See Figure 7). However this level of skewness fell within the acceptable range of [-1.00, 1.00] (Huck, 2012; p. 270).

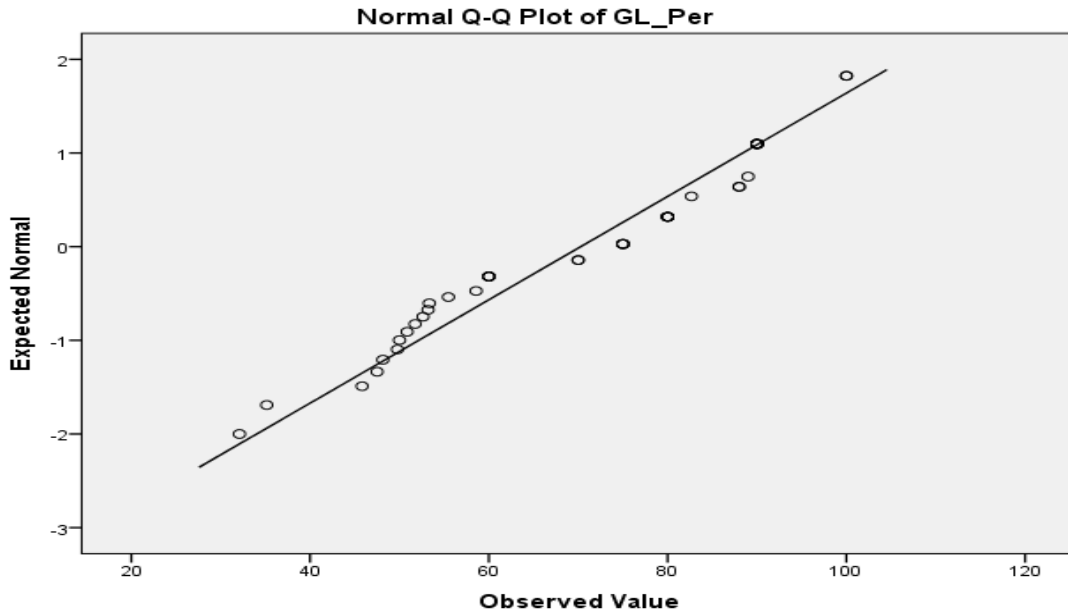


Figure 6. Q-Q plot of Global Perspective

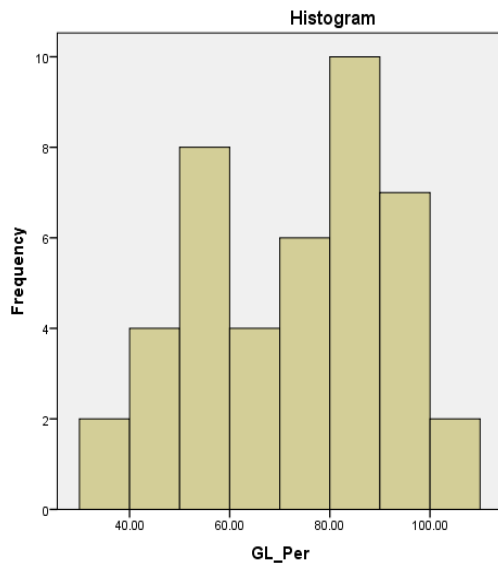


Figure 7. Normality plot Global Perspective

Normality test for the dependent variable *global engagement* ( $Y_3$ ) show significant negative skewness of -2.727 (see Figure 8). A log 10 (Ln) transformation was conducted to improve on normality. Results of this Ln transformation showed a positive skewness

value of 0.070 (See Figure 9), which was an acceptable improvement in the data series.

Based on the normality transformation of the variable global engagement ( $Y_3$ ), the

research model was adjusted to:

Model 1: Global Awareness as Dependent Variable

$$Y_1 = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \beta_7x_{i7} + \epsilon$$

Model 2: Global Perspective as Dependent Variable

$$Y_2 = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \beta_7x_{i7} + \epsilon$$

Model 3: Global Engagement as Dependent Variable

$$Y_{ln3} = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \beta_7x_{i7} + \epsilon$$

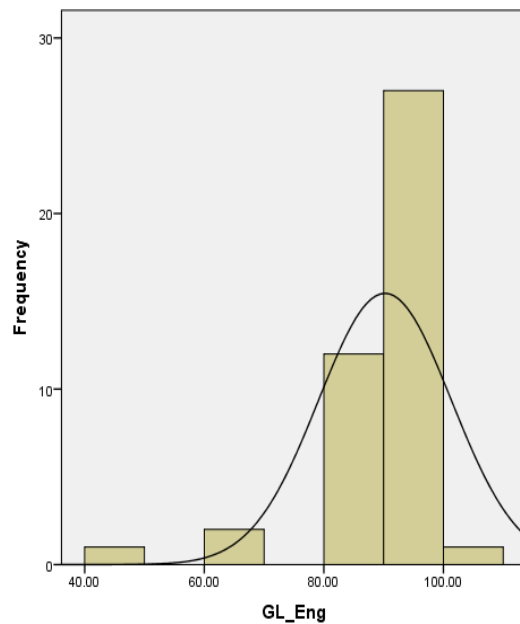


Figure 8. Normality plot Global Engagement

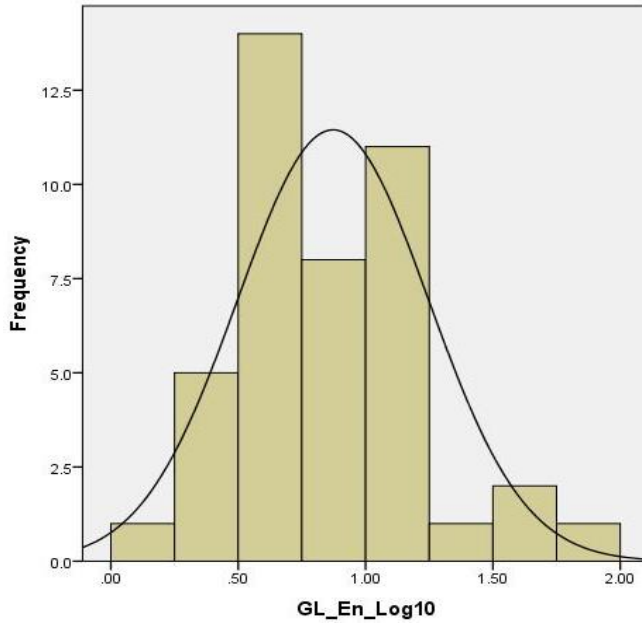


Figure 9. Transformed Global Engagement

Normality test for the independent variable *information literacy* ( $X_1$ ) showed negative skewness of -0.276 (See Figure 10), which falls within the acceptable range of [-1, 1]. A log 10 (Ln) transformation to improve normality generated a significant negative skewness of -1.910 (See Figure 11). This did not generate improvement; hence the data series was accepted in its original state.

Test of normality on the income ( $X_2$ ) variable showed positive skewness with coefficient of 0.340 (See Figure 12). This level of skewness fell within the acceptable range [-1, +1], and therefore, was accepted.

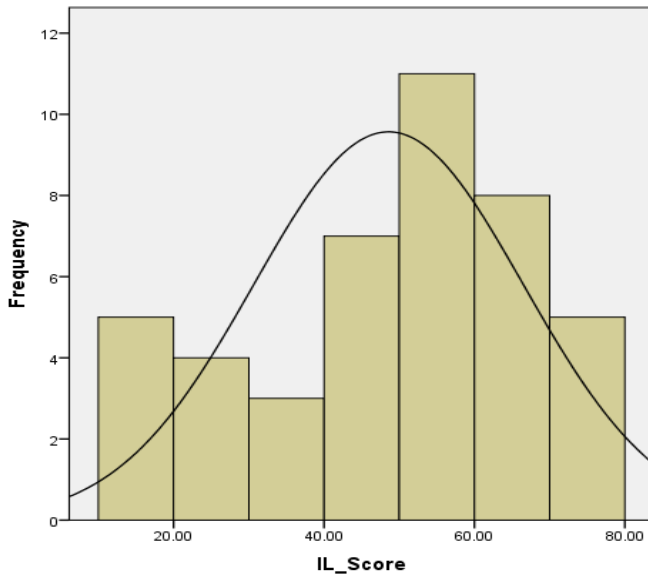


Figure 10. Normality plot for IL

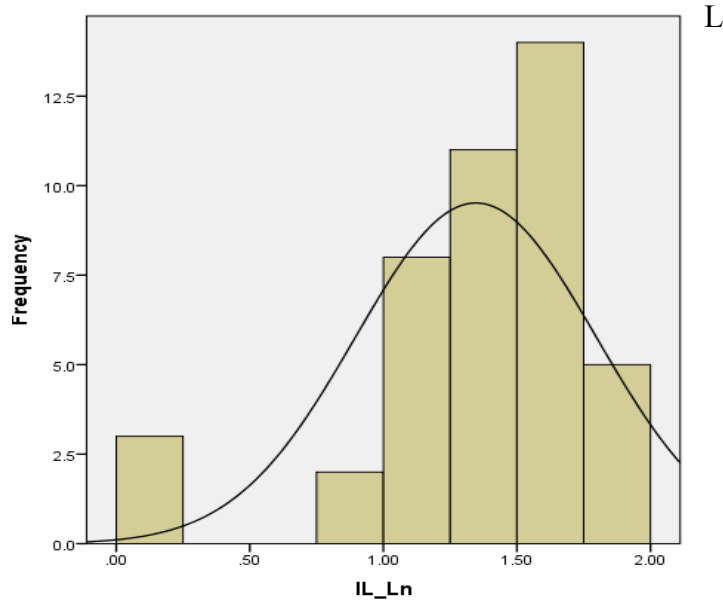


Figure 11. Plot of transformed IL

### Grade Point Average (GPA)

Test of normality for the independent variable  $GPA (X_5)$  showed a skewness of -0.325. A Ln transformation was applied to the data series, but the skewness was not improved. Therefore, the data series was accepted in its original state.

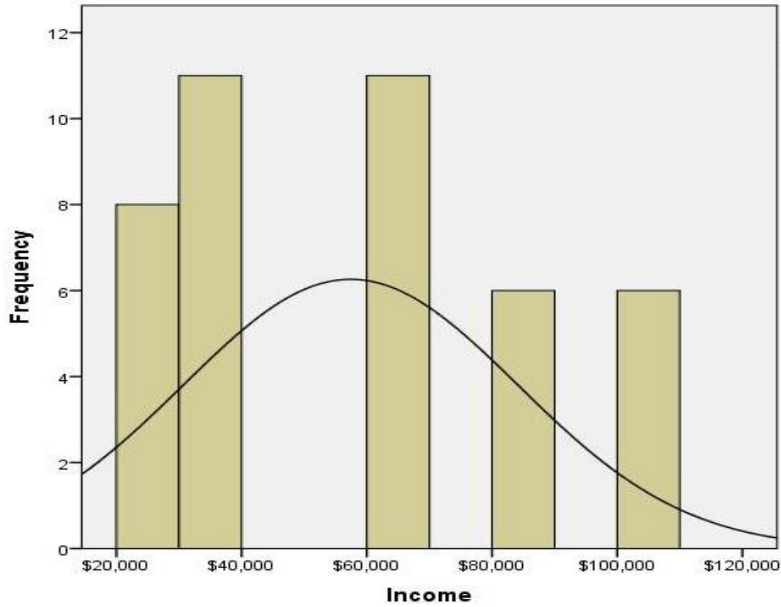


Figure 12. Normality plot of income

### Homogeneity of Variance

This statistical control assumes that the variances of all populations within the combination of all variables are not significantly different. The homogeneity of variance is confirmed if the hypothesis of equal variances is not rejected. However, if the hypothesis is rejected, the homogeneity assumption is not supported. The test of homogeneity of variance assumption can be performed by using the Levene's test or the F Max test (Hinkle et al., 2003).

A violation of this assumption may lead to errors in the sum of squares as well as the increase of a Type I error and the possibility of Type II error. The effect of this violation is dependent on the sample size. If the two samples are of equal sizes, then the effect is not serious. If the sample sizes are unequal, then alternative procedures such as the variance stabilizing transformations may be used (Hinkle et al., 2003; Lomax, 1998).



In the present study, test for homogeneity of variance was conducted for (1) global awareness, (2) global perspective, (3) and global engagement using the Levene's test in SPSS which tests the null hypothesis that the error variance of the dependent variable is equal across groups. The dependent variable  $y$  was regressed on the continuous independent variables of information literacy ( $X_1$ ) and income ( $X_2$ ).

For *global awareness*, the Levene's test generated a  $p$ -value of 0.055 (See Table 2). This  $p$ -value of 0.055 indicated that the test result is slightly higher than the significance level of 0.05. Hence, there was no statistically significant difference in the population means. In other words, the data are showing constant variance, and there is no need to adjust the model.

Table 2.

*Levene's Test of Constant Variance: Global Awareness*

<i>F</i>	<i>df1</i>	<i>df2</i>	Sig.
2.403	29	12	.055

*Note.* Design: Intercept + IL\_Score + Income\_Log10 + IL\_Score \* Income\_Log10

For *global perspective* ( $Y_2$ ) the Levene's test is 0.029 as shown in Table 3, indicating that the test is significant and the variances in the population are unequal.

Table 3.

*Levene's Test of Constant Variance: Global Perspective*

<i>F</i>	<i>df1</i>	<i>df2</i>	Sig.
2.850	29	12	.029

*Note.* Design: Intercept + IL\_Score + Income\_Log10 + IL\_Score \* Income\_Log10

For *global engagement*, the Levene's test was 0.000 as shown in Table 4, indicating that the test is significant and the variances in the population are unequal.

Table 4.

*Levene's Test of Constant Variance: Global Engagement*

<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
21.510	29	12	.000

*Note.* Design: Intercept + IL\_Score + Income\_Log10 + IL\_Score \* Income\_Log10

### **Multicollinearity**

Multicollinearity is a problem which occurs when two or more independent/predictor variables in a dataset are found to be highly correlated in the regression model (Cohen et al., 2003). If multicollinearity is present, there will be difficulty in determining the unique contribution of each variable to changes in the dependent variable. Multicollinearity may also lead to an inability to correctly interpret the results of a simultaneous regression analysis. Multicollinearity may be corrected by combining the highly correlated variables into a single variable, or by removing one of the correlated variables (Cohen et al., 2003; Huck, 2012).

### **Model Redefinition**

The application of correction procedures for violation of statistical assumptions requires that model 3 be adjusted to reflect data transformation. Toward this end, the initial model of:

$$Y_3 = \beta_0 + \beta_1X_{i1} + \beta_2X_{i2} + \beta_3X_{i3} + \beta_4X_{i4} + \beta_5X_{i5} + \beta_6X_{i6} + \varepsilon$$

was transformed into a final predictive model written as:

$$Yln_3 = \beta_0 + \beta_1X_{i1} + \beta_2X_{i2} + \beta_3X_{i3} + \beta_4X_{i4} + \beta_5X_{i5} + \beta_6X_{i6}$$

Hence, the final research models were:

**Model 1: Global Awareness as Dependent Variable**

$$Y_1 = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \beta_7x_{i7} + \varepsilon$$

**Model 2: Global Perspective as Dependent Variable**

$$Y_2 = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \beta_7x_{i7} + \varepsilon$$

**Model 3: Global Engagement as Dependent Variable**

$$Y_{ln3} = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \beta_3x_{i3} + \beta_4x_{i4} + \beta_5x_{i5} + \beta_6x_{i6} + \beta_7x_{i7} + \varepsilon$$

These final models were used to compute the study's analytic outcomes.

### **Chapter Summary**

This chapter presented information relating to the research design, the model development, data sources and description and the tests of statistical assumptions for this study. A key component of this section was that of the data collection process. Data were collected from an information literacy assessment and from students' scores received for GA, GP and GE activities. Data collection for information literacy involved a three-step process to ensure cohesiveness in data collection.

First, the data collection instrument (survey) for information literacy was tailored based on the *Beile Test of Information Literacy* survey. It was evaluated for inter-rater reliability by information literacy experts from three higher education institutions. Second, the tailored survey was pilot tested over the summer of 2016 with a sample size of 15 students from the targeted pool of study participants. The results of this pilot test

were analyzed to see how well the students navigated the questions. Third, the full survey was rolled out, and 257 valid student responses were obtained.

Additionally, scores for three global learning outcomes (GA, GP, and GE) were collected from two global learning courses. The resulting data were subjected to the Gauss-Markov conditions/statistical assumptions and model redefinition. Chapter 4 presents the results of this study, and Chapter 5 reviews the results described in Chapter 4 in relation to the research questions, the hypotheses and the literature.

## CHAPTER IV

### RESULTS

The purpose of this study was to investigate the relationship between undergraduate student performance on an information literacy assessment activity and their performance in global learning assessment activities. To facilitate quantitative analysis of data for the three global learning outcomes, (1) global awareness, (2) global perspective, and (3) global engagement, one regression model was created for each global learning variable. Each regression model with continuous and indicator variables, was fitted to survey data and global learning scores for 43 students. These students were enrolled in two global learning courses over the fall semester of 2016. Analytic results from fitting the regression models are described hereafter in terms of: (a) descriptive statistics, and (b) independent variables.

#### Descriptive Statistics

Selected summary statistics from fitting regression models to global awareness, global perspective and global engagement are shown in Table 5. They indicate that: there were 43 survey participants, the mean GA score from students' activities was 65.55 ( $SD = 13.79$ ), the mean GP score from students' activities was 70.27 ( $SD = 18.13$ ), the mean GE score from students' activities was 90.22 ( $SD = 11.10$ ), and the mean IL score was approximately 49% ( $SD = 17.93$ ). Additionally, the mean household income reported was approximately \$58,000 ( $SD = 26,757.32$ ) and participants were from 2 colleges and one school (College of Engineering and Computing [CEC], College of Law, and School of Hospitality and Tourism) within the university. (It should be noted that the College of Law is a graduate school and this study was conducted in undergraduate courses. Hence,

students who self-reported their schools on the basis of the questions on the survey, may have been prelaw students). In addition, more than 67.5% of all participants were *Hispanic* ( $n = 29$ ), almost 14% were *Black or African American* ( $n = 6$ ), and 9.5% were *White* ( $n = 4$ ).

In terms of language spoken, 65% ( $n = 28$ ) of the participants spoke 2 or more languages, and 36% ( $n = 15$ ) spoke English only. With regard to the *class status* of participants, the majority of respondents were 23 freshmen (53.5%), followed by 11 sophomores (25.6%), 6 juniors (14%), and 3 seniors (7%). The sample of 43 participants was represented by 74.4% males ( $n = 32$ ), 19% females ( $n = 8$ ), and 3 identified as “other” (7%). Finally, of the 43 students, only 20.9% students ( $n = 9$ ) reported receiving information literacy instruction from a librarian.

Table 5.

*Descriptive Statistics*

		GL_Aw	GL_Per	GL_Eng	IL_Score	Income	Gender	Race/ Ethnicity	Discipline	Class status	Lib. Orientation
N	Valid	43	43	43	43	42	43	43	43	43	43
	Missing	0	0	0	0	1	0	0	0	0	0
Mean		65.5516	70.2784	90.2209	48.5814	\$57,404.76	.33	3.79	4.72	1.74	.35
Median		64.0000	75.0000	94.7100	50.0000	\$62,000.00	0.00	4.00	4.00	1.00	0.00
Mode		60.40	90.00	99.00	45.00 <sup>a</sup>	\$37,000 <sup>a</sup>	0	4	4	1	0
Std. Deviation		13.79342	18.12512	11.10292	17.92741	\$26,757.319	.606	.965	1.944	.954	.482
Minimum		32.10	32.10	41.78	17.00	\$25,000	0	1	4	1	0
Maximum		100.00	100.00	100.00	78.00	\$100,000	2	6	10	4	1
Sum		2818.72	3021.97	3879.50	2089.00	\$2,411,000	14	163	203	75	15

a. Multiple modes exist. The smallest value is shown

## Outcomes

The outcomes of the following analyses addressed the statistical significance of information literacy (IL) as an explanatory variable for global learning outcomes (global awareness, global perspective, and global engagement).

Correlational analysis revealed that the demographic variables did not correlate significantly with the research variables. Therefore, the demographic variables were not used as control variables in the regression equations.

### Global Awareness

The regression model for global awareness was fitted to 43 data points to test the first hypothesis, which generated a  $R^2$  value = 0.006 (See Table 6), an analysis of variance (ANOVA) F- statistics = 0.250, and  $p$ -value = 0.620 (See Table 7). The  $R^2$  value = 0.006 indicates that the overall model explains approximately 0.6% of the variance in the dependent variable, global awareness ( $y_1$ ). The F- statistics = 0.250 and the  $p$ -value = 0.620 together, indicate that the overall regression model was not statistically significant. Therefore, the first null hypothesis was supported.

Table 6.

*Model Summary for Global Awareness*

Model	$R$	$R^2$	Adjusted $R^2$	Std. Error of the Estimate
1	.078 <sup>a</sup>	.006	-.018	13.91826

a. Predictors: (Constant), IL\_Score



Table 7.

*ANOVA Output for Global Awareness*

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Regression	48.421	1	48.421	.250	.620 <sup>a</sup>
Residual	7942.438	41	193.718		
Total	7990.859	42			

a. Predictors: (Constant), IL\_Score

**Independent Variable**

The results generated for the global awareness regression model indicate that the model was not statistically significant (See Appendix H). Hence, no conclusion could be drawn from this model regarding information literacy as an explanatory variable for global awareness.

**Global Perspective**

The regression model for global perspective was fitted to 43 data points to test the second hypothesis, which generated a  $R^2$  value = 0.004 (See Table 8), an ANOVA  $F$ -statistic = 0.159, and a  $p$ -value = 0.692 (See Table 9). The  $R^2$  value indicates = 0.004 indicates that the entire model explains 0.4% of the variance in the dependent variable, global perspective ( $y_2$ ). The  $F$ -statistic = 0.159 and  $p$ -value = 0.692 together, indicate that the overall regression model was not statistically significant. Therefore, the second null hypothesis was not rejected.

Table 8.

*Model Summary for Global Perspective*

Model	$R$	$R^2$	Adjusted $R^2$	Std. Error of the Estimate
	.062 <sup>a</sup>	.004	-.020	18.30934

a. Predictors: (Constant), IL\_Score

Table 9.

*ANOVA Output for Global Awareness*

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Regression	53.331	1	53.331	.159	.692 <sup>a</sup>
Residual	13744.513	41	335.23		
Total	13797.845	42			

a. Predictors: (Constant), IL\_Score

**Independent Variable**

The results generated for the global perspective regression model indicate that it was not statistically significant. Hence, no conclusion could be drawn from this model regarding information literacy as an explanatory variable for global perspective (See Appendix H).

**Global Engagement**

The regression model for global engagement was fitted to 43 data points which generated a  $R^2$  value = 0.003 (See Table 10), an ANOVA  $F$ -statistic = 0.125, and  $p$ -value = 0.726 (See Table 11). The  $R^2$  value = 0.003 indicates that the overall model explains 0.3% of the variance in the dependent variable, global engagement. The  $F$ -statistic = 0.125 and  $p$ -value = 0.726, together, indicate that the overall model was not statistically significant. Hence, the null hypothesis was not rejected.

Table 10.

*Model Summary for Global Engagement*

Model	<i>R</i>	$R^2$	Adjusted $R^2$	Std. Error of the Estimate
1	.055 <sup>a</sup>	.003	-.021	.37856

a. Predictors: (Constant), IL\_Score

Table 11.

*ANOVA Output for Global Engagement*

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Regression	.018	1	.018	.125	.726 <sup>a</sup>
Residual	5.875	41	.143		
Total	5.893	42			

a. Predictors: (Constant), IL\_Score

**Independent Variable**

The outcome for the global engagement regression model was not statistically significant with information literacy as an explanatory variable for global perspective. Hence, the model could not explain the relationship between information literacy and global engagement (See Appendix H).

**Chapter Summary**

Chapter 4 presented the outcomes of investigating the relationship between information literacy using multiple regression analyses. In this chapter, global learning outcomes (global awareness, perspective, engagement) served as proxies for global learning with regression models created to address each outcome. Information literacy was the primary independent variable. The outcomes of the analyses were statistical estimates regarding the relationship between the dependent variables, and the independent variable in the models. Chapter 5 reviews the results described in Chapter 4 in relation to the research questions, the hypotheses and the literature along with the discussion, limitations, recommendations and implications, and conclusions of the study.

## CHAPTER V

### DISCUSSION

The purpose of this study was to investigate the relationship between undergraduate student performance on an information literacy assessment activity and their performance in global learning assessment activities. The research questions were:

- (1) Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global awareness assessment activity?
- (2) Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global perspective assessment activity?
- (3) Within the context of a global learning course, what is the relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global engagement assessment activity?

To evaluate the stated research questions, three sets of null hypotheses were tested.

#### **Null Hypothesis 1**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global awareness assessment activity.

## **Null Hypothesis 2**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global perspective assessment activity.

## **Null hypothesis 3**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global engagement activity.

To answer these hypothetical questions, two global learning courses were used: Technology, Humans and Society (EGS 1041); and Sustainable Tourism Practices (HFT 3701).

A 31-point survey, which incorporated an 18-question information literacy assessment exercise, was used to collect data from 43 undergraduate students. Additionally, scores for activities (global awareness, global perspective, and global engagement) in two global learning courses were collected and analyzed. Hence, the main units of analyses were: (1) students' assessment scores for activities in two global learning courses (dependent variables), and (2) student scores generated from the information literacy (independent variable) assessment exercise administered in the survey.

The data for dependent and independent variables were fitted to three separate multiple regression models (one for each dependent variable) and analyzed. The remainder of this chapter provides summary and conclusions of the analytic outcomes; a

discussion of the results, with a review of the limitations; recommendations arising out of the study and a conclusion.

### **Summary and Conclusions of the Analytic Outcomes**

#### **Global Awareness: Null Hypothesis 1**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global awareness assessment activity.

The analytic results indicate that the regression model was not statistically significant ( $R^2$  value = 0.006) as shown in Table 4, an analysis of variance (ANOVA)  $F$ -statistics = 0.250, and  $p$ -value = 0.620 as shown in Table 5. Because the regression model was not statistically significant, it has no explanatory power. Hence, no conclusion could be drawn regarding the relationship between students' scores on an information literacy assessment and their scores on a global awareness assessment activity. These results indicate a failure to reject the null hypothesis.

#### **Global Perspective: Null Hypothesis 2**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global perspective assessment activity.

The results of this analysis indicate that the regression model for global perspective was not statistically significant ( $R^2$  value = 0.004) as shown in Table 7, an ANOVA  $F$ -statistic = 0.159, and  $p$ -value = 0.692 (See Table 8). Therefore, the regression model has no explanatory power. This means that a conclusion could not be drawn from these results regarding the relationship between students' scores on an

information literacy assessment and their scores on a global perspective activity. Hence, the null hypothesis was not rejected.

### **Global Engagement: Null Hypothesis 3**

Within the context of a global learning course, there will be no statistically significant relationship between undergraduate students' scores on an information literacy assessment, and their scores on a global engagement activity.

The regression model for global engagement was found to be not statistically significant ( $R^2$  value = 0.003) as was shown in Table 10, an ANOVA  $F$ -statistic = 0.125, and  $p$ -value = 0.726 (See Table 11). Hence the regression model has no explanatory power regarding the relationship between information literacy scores and an assessment on an activity for global awareness. This means that the null hypothesis was not rejected.

### **Discussion**

This section discusses the results of testing the hypotheses for three global learning outcomes - global awareness, global perspective and global engagement. Multiple regression and correlational analyses did not support an association between undergraduate students' performance on an information literacy assessment activity and their performance in global learning assessment activities. These results indicate that all three of the study's null hypotheses were not rejected. These results may possibly be explained by the following five reasons.

First, descriptive statistics for the study show that, of the 43 participants, only 9 (20.9%) reported that they had received information literacy instruction. The author did not expect to see that such a low percentage of students received this instruction. In a study investigating student academic performance and information literacy instruction,

Wong and Cmor (2011) found a strong positive relationship between student participation in one or more information literacy instruction, and their overall academic performance. The fact that students reported that they did not receive information literacy instruction, in this present study, may be one explanation for the findings of no statistically significant relationship between information literacy and global learning.

Secondly, the classes selected for this study were part of a recent study called *Assessment in Action* in which faculty members from selected global learning classes were paired with a librarian, and students in these classes received information literacy instruction. The assumption for this present study was that the pairing of these classes with librarians was still in place and faculty had incorporated information literacy instruction in each course, on a regular basis. However, when this current study was conducted, in fall 2016, the expected collaboration was no longer in place for the participating courses. Results of prior studies, including those of Devasagayam et al. (2012) and Maitaouthong et al. (2010), have indicated that when information literacy is incorporated in a class, students improved in both the content area and in their information literacy abilities. The results from these studies by Devasagayam et al. (2012) and Maitaouthong et al. (2010) suggest that the failure to reject the null hypotheses, in this present study, may be explained in part, by the non-integration of information literacy instruction in participating classes.

Third, this present study was non-experimental and did not incorporate any type of treatment or intervention. Other studies including that of Stevens and Campbell (2006) incorporated a pretest, an intervention and posttest. The results showed that students improved in both the content area and in their information literacy abilities. This



raises the possibility that the inclusion of an information literacy intervention along with pre- and posttests, in this present study, may possibly have resulted in a statistically significant relationship between information literacy and global learning.

Students' information literacy abilities may have affected the findings in this investigation, where descriptive statistics showed students receiving a mean score of 49% on the information literacy assessment. This score is similar to findings of a study conducted by the Educational Testing Service [ETS], in 2006, which found that students earned approximately half of the potential points on an information literacy assessment (Katz, 2007). These results suggest that students' information literacy scores, in this present study, may be one of the reasons for the finding of non-statistically significant relationship between information literacy and global learning.

The fifth reason may be related to the students' perception of their information literacy abilities. Descriptive statistics in this present study show that the majority of students ( $n = 34$ ) perceived that their information literacy skills were excellent (79%), while only 20.9% ( $n = 9$ ) perceived that their skills were average. At the same time, the actual results of the information literacy assessment showed that students' mean scores were at 49%. This students' perception of their information literacy abilities in this study, is supported by reports of prior studies such as those of Dubicki (2013), Ganley and Gilbert (2013), and Head (2013) who found that actual students' information literacy abilities are much lower than what they perceived. Students' false perception of their abilities suggests a possible unwillingness, on their part, to improve their information literacy competencies and to seek information literacy assistance when completing their assignments (Gross & Latham, 2007). This highly inflated perceptions of their abilities

may possibly signal an indirect relationship between information literacy and students' global learning scores in this current study.

### **Limitations**

There were two major issues that limited full potential of this inquiry. First, the study was designed to investigate the relationship between information literacy and global learning with the three global learning outcomes (GA, GP and GE) as proxies for global learning. Though these activities were in line with the study of global learning, it was discovered that the in-class activities designed to generate data for the dependent variables, GA, GP and GE, were not implemented in several of the global learning courses studied.

In other words, during and after the data collection process, some instructors indicated that they (1) did not implement separate activities for all three global learning outcomes in their course sections; (2) did not generate scores for all three global learning outcomes; and (3) declined to share student scores for global learning activities. One instructor offered global learning activity artifacts and a rubric, but did not provide student ID numbers, so there was no one- to- one mapping of student ID to scores. Another instructor offered global learning scores, but the scores were only for two of the three outcomes for global learning. Only two instructors offered scores for all three global learning outcomes. These scores accounted for 43 students who participated in the study.

The second major limitation was that the sample size for this study was computed scientifically using a sample determination formula:

$$(n = \left(\frac{z\sigma}{E}\right)^2) \text{ (Lind et al, 2012).}$$

The computation indicated that a sample size of 117 students was sufficient for a 95% level of confidence. However, over the data collection process, a sample of 257 surveys was realized after removing those with response errors. Furthermore, only 43 surveys could be matched with students' outcomes for GA, GP, and GE activities. At the conclusion of the analytic processes, the outcomes for the dependent and independent variables were found to be not statistically significant.

Looking back at the sample size computation, it might be that the formula's components, such as level of confidence, or the acceptable margin of error could have been estimated differently.

In addition, the results of this study may not be generalized to other populations because of the small sample size, and the diverse student body at this institution which may not be reflected elsewhere. Ary et al. (2010) suggests that in addition to the size of the sample, the representativeness of the sample should also be considered when analyzing the outcome of a research. It was noted that only the College of Engineering and Computing (CEC), the Chaplin School of Hospitality and Tourism Management and the College of Law represented the sample for this study. The representation by colleges and schools within the institution was small, given that the institution has a total of 11 colleges and schools combined. The small sample size suggest that the results may not be extrapolated to global learning students in the wider institution.

## **Recommendations and Implications**

The analytic results of this study were inconclusive regarding the relationship between students' scores on an information literacy assessment and students' scores on assessments for global awareness, global perspective and global engagement. Based on these findings, the following are the recommendations for future research and practice.

### **Recommendations for Future Research**

The major recommendation is that this study be replicated with a larger sample of global learning students. The sample size for this study was small ( $n=43$ ) and the results of the study indicated that the null hypotheses were not rejected. It is likely that a larger sample size could result in the rejection of the null hypotheses. The second recommendation is to conduct a study involving an information literacy intervention with pre- and posttest components such as the study of Stevens and Campbell (2006). A pretest would allow librarians and professors to see the levels of students' proficiency in applying information literacy skills to complete assignments. With this knowledge of their proficiency, interventions could be tailored to address weaknesses in students' information literacy skills. A posttest would then provide data with which to compare students' progress as well as to determine the effectiveness of interventions.

Thirdly, information literacy training could be offered, prior to conducting the study, to faculty who are potential study participants. Faculty training, in addition to improving their knowledge of information literacy resources, may possibly increase their awareness of likely benefits to students. Furthermore, faculty who receive information literacy training may be more receptive to participating in one or more information literacy study and in other future collaborative activities with librarians. With respect to

this specific study is recommended that future researchers create an item analysis of the information literacy survey and match it with the three GL outcomes. This would provide a comparison of participant responses to questions on the information literacy survey with the scores for GA, GP and GE.

A fifth recommendation for future researchers is that a study of the relationship between information literacy and global learning include an exploration of outcomes according to variables of gender, race/ethnicity, and socio-economic status. Prior studies have found relationships between student success and the above-mentioned variables (Baker, 2019; Borg, et al., 2007; Kena et al., 2014; Patterson & Pahlke, 2011; Simon et al., 2015). Differences in outcomes for these variables and their relationship to information literacy and global learning, within the setting of a higher education institution, may (or may not) support prior findings. The results of such a study may possibly be instructive to administrators, librarians and faculty.

A sixth recommendation would be to include high school seniors in an investigation of the relationship between information literacy and global learning. The results of such a study would provide an indication of the preparedness of this group for college-level academic work. The results may well signal the need for collaboration with high schools in preparing students for college research.

Finally, the global learning assessment measures, in this current study, were rubrics developed by the discipline faculty who also scored the assessments. Future researchers may consider collaborating with the discipline faculty to develop this assessment measure for the study. In this way the rubric would likely be closely aligned

to major concepts in global learning, and both faculty and researcher would be familiar with its contents.

### **Implications for Practice**

The purpose of this study was to investigate the relationship between scores on an information literacy assessment activity and students' performance on global learning assessment activities. Though the relationship between information literacy and global learning proved to be not statistically significant, students' scores on the information literacy assessment have indicated a need for practices that would improve students' information literacy abilities.

The first recommendation is the addition of an information literacy component to the general education core requirements for undergraduate students. This component of information literacy should be closely aligned to the *Framework for Information Literacy for Higher Education* (ACRL, 2016; Mackey & Jacobson, 2014).

Secondly for global learning educators, it is recommended that all global learning courses be comprised of at least one module that requires students to apply information literacy skills and resources for information search, analysis of information, and reference citations. Third, it is recommended that information literacy presentations by library faculty be included in all global learning courses.

### **Conclusions**

Using the summaries of the regression analyses, this inquiry concludes that demographic variables did not correlate significantly with research variables; hence, the demographic variables were not used as control variables in these analyses, and secondly that the regression models were not significant for GA, GP and GE. Hence, the models

had no explanatory power and could not show a relationship between information literacy and these three global learning outcomes.

These results mean that the null hypotheses were not rejected for all three regression analyses. These results were unexpected, and possibly may be explained by the small sample size ( $n=43$ ) in this study, and the limited representation ( $n=3$ ) by discipline or colleges and schools. A larger sample size would likely have provided more precise results (Hinkle et al., 2003). A failure to reject the null hypothesis is generally influenced by an inadequate sample size (Hinkle et al., 2003), as was the case for this study with a sample size of 43.

In addition, the results of this study may not be generalized to other populations because of the small sample size, and the diverse student body at this institution which may not be reflective elsewhere. The small sample size suggest that the results may not be extrapolated to global learning students in the wider institution. However, it does suggest a need for further investigation with a larger and more representative sample size.

Despite the abovementioned issues, the results of the study were insightful. Descriptive statistics revealed that though students lack information literacy skills, only a small percentage actually received information literacy instruction. These outcomes have highlighted the need for librarians and global learning faculty to, collaboratively, work towards integrating information literacy components across the undergraduate global learning curriculum. The abilities that students develop from information literacy exposure will benefit them in their global learning classes, for the rest of their academic careers, and will extend to their social, professional, and community life.

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## APPENDICES



## Appendix A

### Framework for Information Literacy for Higher Education

#### Frames

These six frames are presented alphabetically and do not suggest a particular sequence in which they must be learned.

#### 1. Authority Is Constructed and Contextual

**Information resources reflect their creators' expertise and credibility, and are evaluated based on the information need and the context in which the information will be used. Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required.**

Experts understand that authority is a type of influence recognized or exerted within a community. Experts view authority with an attitude of informed skepticism and an openness to new perspectives, additional voices, and changes in schools of thought. Experts understand the need to determine the validity of the information created by different authorities and to acknowledge biases that privilege some sources of authority over others, especially in terms of others' worldviews, gender, sexual orientation, and cultural orientations. An understanding of this concept enables novice learners to critically examine all evidence—be it a short blog post or a peer-reviewed conference proceeding—and to ask relevant questions about origins, context, and suitability for the current information need. Thus, novice learners come to respect the expertise that authority represents while remaining skeptical of the systems that have elevated that authority and the information created by it. Experts know how to seek authoritative voices but also recognize that unlikely voices can be authoritative, depending on need. Novice learners may need to rely on basic indicators of authority, such as type of publication or author credentials, where experts recognize schools of thought or discipline-specific paradigms.

##### 1.1. Knowledge Practices

Learners who are developing their information literate abilities

- a. define different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event);
- b. use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility;
- c. understand that many disciplines have acknowledged authorities in the sense of well-known scholars and publications that are widely considered “standard,” and

yet, even in those situations, some scholars would challenge the authority of those sources;

- d. recognize that authoritative content may be packaged formally or informally and may include sources of all media types;
- e. acknowledge they are developing their own authoritative voices in a particular area and recognize the responsibilities this entails, including seeking accuracy and reliability, respecting intellectual property, and participating in communities of practice;
- f. understand the increasingly social nature of the information ecosystem where authorities actively connect with one another and sources develop over time.

## 1.2. Dispositions

Learners who are developing their information literate abilities

- a. develop and maintain an open mind when encountering varied and sometimes conflicting perspectives;
- b. motivate themselves to find authoritative sources, recognizing that authority may be conferred or manifested in unexpected ways;
- c. develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview;
- d. question traditional notions of granting authority and recognize the value of diverse ideas and worldviews;
- e. are conscious that maintaining these attitudes and actions requires frequent self-evaluation

## 2. Information Creation as a Process

**Information in any format is produced to convey a message and is shared via a selected delivery method. The iterative processes of researching, creating, revising, and disseminating information vary, and the resulting product reflects these differences.**

The information creation process could result in a range of information formats and modes of delivery, so experts look beyond format when selecting resources to use. The unique capabilities and constraints of each creation process as well as the specific information need determine how the product is used. Experts recognize that information creations are valued differently in different contexts, such as academia or the workplace. Elements that affect or reflect on the creation, such as a pre- or post-publication editing or reviewing process, may be indicators of quality. The dynamic nature of information creation and dissemination requires ongoing attention to understand evolving creation processes. Recognizing the nature of information creation, experts look to the underlying processes of creation as well as the final product to critically evaluate the usefulness of the information. Novice learners begin to recognize the significance of the creation

process, leading them to increasingly sophisticated choices when matching information products with their information needs.

### **2.1. Knowledge Practices**

Learners who are developing their information literate abilities

- a. articulate the capabilities and constraints of information developed through various creation processes;
- b. assess the fit between an information product's creation process and a particular information need;
- c. articulate the traditional and emerging processes of information creation and dissemination in a particular discipline;
- d. recognize that information may be perceived differently based on the format in which it is packaged;
- e. recognize the implications of information formats that contain static or dynamic information;
- f. monitor the value that is placed upon different types of information products in varying contexts;
- g. transfer knowledge of capabilities and constraints to new types of information products;
- h. develop, in their own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys.

### **2.2. Dispositions**

Learners who are developing their information literate abilities

- a. are inclined to seek out characteristics of information products that indicate the underlying creation process;
- b. value the process of matching an information need with an appropriate product;
- c. accept that the creation of information may begin initially through communicating in a range of formats or modes;
- d. accept the ambiguity surrounding the potential value of information creation expressed in emerging formats or modes;
- e. resist the tendency to equate format with the underlying creation process;
- f. understand that different methods of information dissemination with different purposes are available for their use.

### **3. Information Has Value**

**Information possesses several dimensions of value, including as a commodity, as a means of education, as a means to influence, and as a means of negotiating and understanding the world. Legal and socioeconomic interests influence information production and dissemination.**

The value of information is manifested in various contexts, including publishing practices, access to information, the commodification of personal information, and intellectual property laws. The novice learner may struggle to understand the diverse values of information in an environment where “free” information and related services are plentiful and the concept of intellectual property is first encountered through rules of citation or warnings about plagiarism and copyright law. As creators and users of information, experts understand their rights and responsibilities when participating in a community of scholarship. Experts understand that value may be wielded by powerful interests in ways that marginalize certain voices. However, value may also be leveraged by individuals and organizations to effect change and for civic, economic, social, or personal gains. Experts also understand that the individual is responsible for making deliberate and informed choices about when to comply with and when to contest current legal and socioeconomic practices concerning the value of information.

### **3.1. Knowledge Practices**

Learners who are developing their information literate abilities

- a. give credit to the original ideas of others through proper attribution and citation;
- b. understand that intellectual property is a legal and social construct that varies by culture;
- c. articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and the public domain;
- d. understand how and why some individuals or groups of individuals may be underrepresented or systematically marginalized within the systems that produce and disseminate information;
- e. recognize issues of access or lack of access to information sources;
- f. decide where and how their information is published;
- g. understand how the commodification of their personal information and online interactions affects the information they receive and the information they produce or disseminate online;
- h. make informed choices regarding their online actions in full awareness of issues related to privacy and the commodification of personal information.

### **3.2. Dispositions**

- a. Learners who are developing their information literate abilities

- b. respect the original ideas of others;
- c. value the skills, time, and effort needed to produce knowledge;
- d. see themselves as contributors to the information marketplace rather than only consumers of it;
- e. are inclined to examine their own information privilege.

#### **4. Research as Inquiry**

**Research is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field.**

Experts see inquiry as a process that focuses on problems or questions in a discipline or between disciplines that are open or unresolved. Experts recognize the collaborative effort within a discipline to extend the knowledge in that field. Many times, this process includes points of disagreement where debate and dialogue work to deepen the conversations around knowledge. This process of inquiry extends beyond the academic world to the community at large, and the process of inquiry may focus upon personal, professional, or societal needs. The spectrum of inquiry ranges from asking simple questions that depend upon basic recapitulation of knowledge to increasingly sophisticated abilities to refine research questions, use more advanced research methods, and explore more diverse disciplinary perspectives. Novice learners acquire strategic perspectives on inquiry and a greater repertoire of investigative methods.

##### **4.1. Knowledge Practices**

Learners who are developing their information literate abilities

- a. formulate questions for research based on information gaps or on reexamination of existing, possibly conflicting, information;
- b. determine an appropriate scope of investigation;
- c. deal with complex research by breaking complex questions into simple ones, limiting the scope of investigations;
- d. use various research methods, based on need, circumstance, and type of inquiry;

- e. monitor gathered information and assess for gaps or weaknesses;
- f. organize information in meaningful ways;
- g. synthesize ideas gathered from multiple sources;
- h. draw reasonable conclusions based on the analysis and interpretation of information.

#### **4 .2. Dispositions**

- a. Learners who are developing their information literate abilities
- b. consider research as open-ended exploration and engagement with information;
- c. appreciate that a question may appear to be simple but still disruptive and important to research;
- d. value intellectual curiosity in developing questions and learning new investigative methods;
- e. maintain an open mind and a critical stance;
- f. value persistence, adaptability, and flexibility and recognize that ambiguity can benefit the research process;
- g. seek multiple perspectives during information gathering and assessment;
- h. seek appropriate help when needed;
- i. follow ethical and legal guidelines in gathering and using information;
- j. demonstrate intellectual humility (i.e., recognize their own intellectual or experiential limitations).

#### **5. Scholarship as Conversation**

**Communities of scholars, researchers, or professionals engage in sustained discourse with new insights and discoveries occurring over time as a result of varied perspectives and interpretations.**

Research in scholarly and professional fields is a discursive practice in which ideas are formulated, debated, and weighed against one another over extended periods of time.

Instead of seeking discrete answers to complex problems, experts understand that a given issue may be characterized by several competing perspectives as part of an ongoing conversation in which information users and creators come together and negotiate meaning. Experts understand that, while some topics have established answers through

this process, a query may not have a single uncontested answer. Experts are therefore inclined to seek out many perspectives, not merely the ones with which they are familiar. These perspectives might be in their own discipline or profession or may be in other fields. While novice learners and experts at all levels can take part in the conversation, established power and authority structures may influence their ability to participate and can privilege certain voices and information. Developing familiarity with the sources of evidence, methods, and modes of discourse in the field assists novice learners to enter the conversation. New forms of scholarly and research conversations provide more avenues in which a wide variety of individuals may have a voice in the conversation. Providing attribution to relevant previous research is also an obligation of participation in the conversation. It enables the conversation to move forward and strengthens one's voice in the conversation.

### **5.1. Knowledge Practices**

Learners who are developing their information literate abilities

- a. cite the contributing work of others in their own information production;
- b. contribute to scholarly conversation at an appropriate level, such as local online community, guided discussion, undergraduate research journal, conference presentation/poster session;
- c. identify barriers to entering scholarly conversation via various venues;
- d. critically evaluate contributions made by others in participatory information environments;
- e. identify the contribution that particular articles, books, and other scholarly pieces make to disciplinary knowledge;
- f. summarize the changes in scholarly perspective over time on a particular topic within a specific discipline;
- g. recognize that a given scholarly work may not represent the only or even the majority perspective on the issue.

## 5.2. Dispositions

Learners who are developing their information literate abilities

- a. recognize they are often entering into an ongoing scholarly conversation and not a finished conversation;
- b. seek out conversations taking place in their research area;
- c. see themselves as contributors to scholarship rather than only consumers of it;
- d. recognize that scholarly conversations take place in various venues;
- e. suspend judgment on the value of a particular piece of scholarship until the larger context for the scholarly conversation is better understood;
- f. understand the responsibility that comes with entering the conversation through participatory channels;
- g. value user-generated content and evaluate contributions made by others;
- h. recognize that systems privilege authorities and that not having a fluency in the language and process of a discipline disempowers their ability to participate and engage.

## 6. Searching as Strategic Exploration

**Searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops.**

The act of searching often begins with a question that directs the act of finding needed information. Encompassing inquiry, discovery, and serendipity, searching identifies both possible relevant sources as well as the means to access those sources. Experts realize that information searching is a contextualized, complex experience that affects, and is affected by, the cognitive, affective, and social dimensions of the searcher. Novice learners may search a limited set of resources, while experts may search more broadly and deeply to determine the most appropriate information within the project scope. Likewise, novice learners tend to use few search strategies, while experts select from various search strategies, depending on the sources, scope, and context of the information need.



## 6.1. Knowledge Practices

Learners who are developing their information literate abilities

- a. determine the initial scope of the task required to meet their information needs;
- b. identify interested parties, such as scholars, organizations, governments, and industries, who might produce information about a topic and then determine how to access that information;
- c. utilize divergent (e.g., brainstorming) and convergent (e.g., selecting the best source) thinking when searching;
- d. match information needs and search strategies to appropriate search tools;
- e. design and refine needs and search strategies as necessary, based on search results;
- f. understand how information systems (i.e., collections of recorded information) are organized in order to access relevant information;
- g. use different types of searching language (e.g., controlled vocabulary, keywords, natural language) appropriately;
- h. manage searching processes and results effectively.

## 6.2. Dispositions

Learners who are developing their information literate abilities

- a. exhibit mental flexibility and creativity
- b. understand that first attempts at searching do not always produce adequate results
- c. realize that information sources vary greatly in content and format and have varying relevance and value, depending on the needs and nature of the search
- d. seek guidance from experts, such as librarians, researchers, and professionals
- e. recognize the value of browsing and other serendipitous methods of information gathering
- f. persist in the face of search challenges, and know when they have enough information to complete the information task

Source : Association of College and Research Libraries. (2016). *Framework for information literacy for higher education*. Retrieved from ACRL: <http://www.ala.org/acrl/standards/ilframework>

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Knowledge practices and disposition in each frame were itemized, for easy reading, in this current study.

## Appendix B:

### Mapping of Survey Questions to ACRL Framework

The ACRL *Framework for Information Literacy for Higher Education* (2016) has six frames that are presented alphabetically. Each frame has an explanation of its relationship to information as well as the “knowledge practices” and “dispositions” of information literacy learners.

The frames are aligned with the survey for this study and are summarized in the table below.

ACRL Framework	# of Ques	Item # on Questionnaire
<b>Authority Is Constructed and Contextual</b> Information resources reflect their creators’ expertise and credibility, and are evaluated based on the information need and the context in which the information will be used. Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required.	2	1, 23
<b>Information Creation as a Process</b> - Information in any format is produced to convey a message and is shared via a selected delivery method. The iterative processes of researching, creating, revising, and disseminating information vary, and the resulting product reflects these differences.	3	12, 21, 22,

<p><b>Information Has Value</b> - Information possesses several dimensions of value, including as a commodity, as a means of education, as a means to influence, and as a means of negotiating and understanding the world. Legal and socioeconomic interests influence information production and dissemination.</p>	5	24, 25, 26, 27, 28
<p><b>Research as Inquiry</b> - Research is iterative and depends upon asking increasingly complex or new questions whose answers in turn develop additional questions or lines of inquiry in any field.</p>	3	8, 19, 20,
<p><b>Scholarship as Conversation</b> - Communities of scholars, researchers, or professionals engage in sustained discourse with new insights and discoveries occurring over time as a result of varied perspectives and interpretations.</p>	Not Mapped	Not Mapped
<p><b>Searching as Strategic Exploration</b> - Searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops.</p>	8	9, 11, 13, 14, 15, 16, 17, 18,

**Appendix C:**  
**Table of Specifications**

**Table of Specification (ToS) for Evaluation by Information Literacy Experts**

This Table of Specification (ToS) is an effort to assist with the implementation of an Information Literacy survey. The Information Literacy survey is designed to collect data for a study on the relationship between information literacy and students’ performance in global learning courses. This survey was developed from the *Beile Test of Information Literacy* and tailored for this study using the established *Framework for Information Literacy for Higher Education* as a guide. The *Framework for Information Literacy* is a description of knowledge practices and dispositions of learners who are developing their abilities in information literacy.

This ToS aligns concepts from the established *Framework for Information Literacy for Higher Education* to this tailored information literacy survey. Below is an explanation of each column for the survey alignment.

**Column 2** (from left) - the information literacy items in the survey instrument.

**Column 3**– represents a mapping of this information literacy survey to the established *Framework for Information Literacy for Higher Education*.

**Column 4** - Library experts will rate the alignment of the survey items in column 2 with the framework alignment in column 3.

**Column 5** – Library experts will write their comments or recommendations for the item alignments that they do not support.

#	Tailored Information Literacy Survey Items	Framework Alignment	Expert Rating - % item Aligns with Framework	Expert Comment (Alignment less than 100%)
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1	<p>When evaluating articles, which of the following characteristics best indicate scholarly research?</p> <ul style="list-style-type: none"> <li>a. Available in an academic library</li> <li>b. Available by searching Google or Wikipedia</li> <li>c. Reviewed by experts before publication</li> <li>d. Written by university professor</li> </ul>	1.1.a		
2	<p>Your professor has assigned a paper on global warming. You are not familiar with the topic, so you decide to read a brief history and summary about it. Which of the following sources would be best?</p> <ul style="list-style-type: none"> <li>a. A book on the topic, such as <i>Global warming: Looking beyond Kyoto</i></li> <li>b. A historical encyclopedia, such as <i>The Encyclopedia of World History</i></li> <li>c. An article on the topic, such as “Projecting coral reef futures under global warming and ocean acidification”</li> <li>d. A science encyclopedia such as <i>The Gale Encyclopedia of Science</i>.</li> </ul>	4.1.b		
3	<p>The decision to include items found in library subject databases are made based on which of the following criteria?</p> <ul style="list-style-type: none"> <li>a. Owned by your library</li> <li>b. Found on the Internet</li> <li>c. Not found on the Internet</li> <li>d. Relevant subject matter</li> </ul>	6.2.c		

4	<p>ERIC is the most appropriate database to search for:</p> <ul style="list-style-type: none"> <li>a. Education articles, citations and documents</li> <li>b. History publications from 1877 to current</li> <li>c. Full-text articles on literature of the Middle Ages</li> <li>d. US Department of Education statistics</li> </ul>	2.1.c		
5	<p>The search screens in databases (e.g. <i>Academic Search Complete</i>) for articles in journals and magazines have both advanced and basic search screens. Which of the following is <b>not available</b> on the basic search screen?</p> <ul style="list-style-type: none"> <li>a. Add Boolean or search connectors between terms</li> <li>b. Enter multiple search terms</li> <li>c. Search by keyword</li> <li>d. Search multiple terms by field</li> </ul>	6.1.f		
6	<p>Research studies in international education are usually published first in which of the following?</p> <ul style="list-style-type: none"> <li>a. Entries in <i>The International Studies Encyclopedia</i></li> <li>b. Books published by the International Studies Association (ISA)</li> <li>c. Newsletters published by NAFSA: Association of International Educators</li> <li>d. Professional conferences and journal articles</li> </ul>	2.2.c		
7	<p>Your most recent assignment, for your science class, is to write a paper on how</p>	6.1.a		

	<p>science and technological advances have impacted the environment. One requirement is that you must use at least three recent peer reviewed articles to complete this assignment. Where would be the <i>best</i> source for these articles?</p> <p>a. Search a general database</p> <p>b. Search a science database</p> <p>c. Search the library catalog for books</p> <p>d. Search the library catalog for encyclopedias</p>			
8	<p>Select the set of search terms that best represent the main concepts in the statement below. <b>Statement: What are the effects of immigration on development in Africa?</b></p> <p>a. Effects, immigration, development, Africa</p> <p>b. Effects, emigrants, development, Africans</p> <p>c. Effects, immigration, Africans</p> <p>d. Effects, development, Africa</p>	6.1.g		
9	<p>Using the phrase “college students,” select the set of responses that best represents synonyms for the stated phrase.</p> <p>a. Colleges, universities, community colleges</p> <p>b. Gen X, students, undergraduates</p> <p>c. Undergraduate students, freshmen, sophomores</p> <p>d. University, adult learners, educational attendees</p>	6.1.g		

10	<p>After receiving an assignment to write an environmental paper on <i>fracking</i>, you discovered that <i>fracking</i> is also called <i>hydraulic fracturing or hydrofracking</i>. You then decide to search for all three terms in the library database. Which of the following is the best method of combining all three synonymous terms in order to maximize your search results?</p> <p>a. Fracking and hydraulic fracturing and hydrofracking</p> <p>b. Fracking or hydraulic fracturing or hydrofracking</p> <p>c. Fracking, hydraulic fracturing and hydrofracking</p> <p>d. Fracking, hydraulic fracturing or hydrofracking</p>	6.1.d		
11	<p>The database in which you are searching permits you to truncate words by using an asterisk (*). When you type in the word <i>citizen*</i>, the records in your search results would include which of the following group of words?</p> <p>a. Native, responsibility, government</p> <p>b. Native, government, citizens, aliens</p> <p>c. Citizen, citizens, citizenry, citizenship</p> <p>d. Tourists, immigrants, government</p>	6.1.d		
	<p>Your term assignment requires you to write a paper on “the effects of technology on the operations of multinational corporations”. Your search for the term “multinational corporations” in the <i>Business Source Complete</i> database yielded over 20,000 articles. To narrow your search, which of the following steps would you perform?</p>			



12	<ul style="list-style-type: none"> <li>a. Add “businesses” as a keyword</li> <li>b. Add “technology” as a keyword</li> <li>c. Look for articles from 1898 to present</li> <li>d. Include all publication types (e.g. books, magazine, newspapers industry profiles, trade publications) in your search</li> </ul>	6.1.e		
13	<p>What does the following reference citation represent?</p> <p><b>Landorf, H. (2009). Towards a philosophy of global education. In T. F. Kirkwood-Tucker, <i>Visions in global education: The Globalization of curriculum and pedagogy in teacher education and schools: Perspectives from Canada, Russia, and the United States</i> (pp. 47-67). New York, NY: Peter Lang.</b></p> <ul style="list-style-type: none"> <li>a. A book</li> <li>b. A chapter in a book</li> <li>c. A journal article</li> <li>d. An ERIC document</li> </ul>	4.1.d		
14	<p>In preparation for your next assignment on global citizenship, your professor recommended that you read the following article.</p> <p><b>Reimers, F. M. (2013). Education for Improvement: Citizenship in the global public sphere. <i>Harvard International Review</i>, 35(1), 56-61.</b></p> <p>Which of the following terms would you type in the library catalog to find this article?</p> <ul style="list-style-type: none"> <li>a. Author search: Reimers, F. M.</li> </ul>	4.1.d		

	<p>b. Journal search: Harvard International Review</p> <p>c. Journal title search: Education for Improvement</p> <p>d. Subject search: education and citizenship</p>			
15	<p>Take a look at the following item that was retrieved from searching in the ERIC library database. What kind of document is it?</p> <p><b>Title:</b> Engineering Education for Leadership in the 21st Century</p> <p><b>Author:</b> Wirasinghe, Chan</p> <p><b>Publication Year:</b> 2000</p> <p><b>Abstract:</b> The engineering profession and, consequently, the education process for engineers must respond to several new realities in order to be successful in the 21st century. Some aspects of the new reality that are relevant to engineering education are as follows: the globalization of commerce; the information revolution; innovations in technology; the new emphasis on sustainable development . . . the rise of multinational corporations and new start-up companies. . .</p> <p><b>Note:</b> In: TEND 2000: Proceedings of the Technological Education and National Development Conference, "Crossroads of the New Millennium" (2nd, April 8-10, 2000, Abu Dhabi, United Arab Emirates); see CE 080 883. This paper builds further on a previous paper titled "Challenges and Opportunities in Engineering Education."</p> <p>ERIC Number: ED446281</p> <p>a. A book</p>			

	<ul style="list-style-type: none"> <li>b. Journal article</li> <li>c. Conference paper</li> <li>d. Book chapter</li> </ul>	2.1.c		
16	<p>A recent search using an Internet search engine produced the following result. Who owns this website?</p> <p><b><i>2015 World Hunger and Poverty Facts and Statistics.</i></b></p> <p><a href="http://www.worldhunger.org/articles/Learn/world%20hunger%20facts%202002.htm">http://www.worldhunger.org/articles/Learn/world%20hunger%20facts%202002.htm</a></p> <ul style="list-style-type: none"> <li>a. An educational institution</li> <li>b. Business or commercial entity</li> <li>c. Other organization</li> <li>d. A governmental or state agency</li> </ul>	2.2.f		
17	<p>While researching an assignment on the U.S. legislative system, you find the following story on the Internet.</p> <p>WASHINGTON, DC—Hoping to counter ignorance of the national legislative body among U.S. citizens, congressional leaders named the first week in August National Congress Awareness Week. "This special week is designed to call attention to America's very important federal lawmaking body," Speaker of the House Paul Ryan said. The festivities will kick off with a 10-mile Walk for Congress Awareness. The item is from a newspaper website, describes itself as "America's</p>	1.1.e		

	<p>Finest News Source.” Given this information, which of the following action would you take?</p> <ul style="list-style-type: none"> <li>a. You can use the story as it’s obviously from a reputable news source</li> <li>b. You decide to investigate the reputation of the publisher by looking at their Web site</li> <li>c. You decide to investigate the reputation of the publisher by looking at other Web sites</li> <li>d. You should not use the story because web information is not always trustworthy</li> </ul>			
18	<p>Read the following paragraph and select the sentence which is appropriate for you to cite.</p> <p>(1) Women now holds 51.4 percent of managerial jobs and professional jobs. (2) People in the poorest countries are ensnared in a poverty trap. (3) As American economics, politics, and demography become more globalized, so does many sectors of American culture. (4) In his discussion of global citizenship, Appiah (2008) notes that a respect of diversity and culture is the center of modern cosmopolitanism.</p> <ul style="list-style-type: none"> <li>a. 1</li> <li>b. 2</li> <li>c. 3</li> <li>d. 4</li> </ul>	3.1.b		
19	<p>When is it ethical to use the ideas of another person in a research paper?</p>	3.1.c		

	<ul style="list-style-type: none"> <li>a. It is never ethical to use someone else's ideas</li> <li>b. Only if you do not use their exact words</li> <li>c. Only when you give them credit</li> <li>d. Only when you receive their permission</li> </ul>			
20	<p>You are planning to participate in a global learning open house event on campus in which you will do a presentation on human trafficking. Browsing the Internet, you find the report <i>Trafficking in Persons Report 2015</i>, which is a U.S. Department of State publication. If you distribute 30 copies of the report to students at the open house, which of the following copyright choices is the proper action?</p> <ul style="list-style-type: none"> <li>a. Permission is not needed as the report is from a government agency</li> <li>b. Permission is not needed as the report was found on the Internet</li> <li>c. Permission is not needed as you are only distributing 30 copies</li> <li>d. Permission to distribute 30 copies of the report must be acquired</li> </ul>	3.1.c		

21	<p>Your class assignment requires you to use a statistical software to analyze data. Though you have access to the software in the college laboratory, you decided to borrow a copy from your friend who had purchased it. You then loaded it on your computer to complete the assignment. Is this legal?</p> <p>a. No, because this action constitutes a violation of copyright</p> <p>b. Yes, because it is education software and therefore able to be shared</p> <p>c. Yes, because it is already freely available in the lab</p> <p>d. Yes, because your friend owns it and can share as he wishes</p>	3.1.b		
22	<p>In your recent computer class, your teacher brought copies of an article, from a magazine that discusses the importance for everyone to be technology competent. All students in the class received a copy. Which of the following ideas supports the legality of reproducing and distributing works of authors for educational purposes without permission?</p> <p>a. Copyright</p> <p>b. Fair use</p> <p>c. Freedom of information</p> <p>d. Intellectual freedom</p>	3.1.c		

## Appendix D

### Prior Enrollment in Global Learning Courses by Semester

These enrollment data were used to compute standard deviation for the sample size formula

Enrollment in Global Learning Courses by Semester						
	Spring 2016	Spring 15	Spring 14	Fall 15	Fall 14	Average
EDF 4604	142	212	193	145	209	180
HFT 3701	36	83		83	42	61
IDS 3183	79	118	93	87	69	89
PCB 4553	49	35			22	35
EGN 1033	107	.	132	143	186	142

**Standard deviation = 55**

## Appendix E

### Information Literacy Survey Instrument

Please enter your student identification number: \_\_\_\_\_

Please select the best response for each of the following questions.

1. My class status at this university is:
  - a. Freshman or first year
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Not Sure
2. *From the list attached, please select **one** course in which you recently enrolled, or which you are currently taking.*
3. Based on your selection in question #2, which of these best represents the final grade for this course? (If you are currently enrolled in the course you selected in question #2, then select an anticipated final grade).
  - a. A
  - b. A-
  - c. B+
  - d. B
  - e. B-
  - f. C+
  - g. C
  - h. C-
  - i. D+
  - j. D
  - k. D-
  - l. F
4. Please select the word below that best describes your skill in searching for and finding information when using the library databases.
  - a. Excellent
  - b. Good
  - c. Average
  - d. Poor
5. Please select the word below that best represents your ability to search the Internet for information.
  - a. Excellent
  - b. Good



- c. Average
  - d. Poor
6. Please select **all** of the following that apply to you since you enrolled at this university.
- a. Participated in a library tour or library orientation
  - b. Took part in a class session with a librarian either in your classroom or in the library
  - c. Watched the online *Information Literacy Tutorial* found on the FIU library website
  - d. Had a one-on-one consultation with a librarian regarding a research assignment
  - e. Communicated with your campus librarian via chat, tweet, email or text messaging
  - f. None of the above
7. Which of the following characteristics best indicate scholarly research?
- a. Available in an academic library
  - b. Available by searching Google or Wikipedia
  - c. Reviewed by experts before publication
  - d. Written by university professor
8. Your professor has assigned a paper on **global warming**. You are not familiar with the topic, so you decide to read a brief summary about it. Which of the following sources would be best?
- a. A book on the topic, such as *Global warming: Looking beyond Kyoto*
  - b. A historical encyclopedia, such as *The Encyclopedia of World History*
  - c. An article on the topic, such as “Projecting coral reef futures under global warming and ocean acidification”
  - d. A science encyclopedia such as *The Gale Encyclopedia of Science*
9. ERIC is the most appropriate database to search for:
- a. Education articles, citations and documents
  - b. History publications from 1877 to current
  - c. Full-text articles on literature of the Middle Ages
  - d. US Department of Education statistics
10. Research studies in international education are usually published first in which of the following?
- a. Entries in *The International Studies Encyclopedia*
  - b. Books published by the International Studies Association (ISA)
  - c. Newsletters published by NAFSA: Association of International Educators
  - d. Professional conferences and journal articles
11. Your most recent assignment for your science class, is to write a paper on how scientific and technological advances have impacted the environment. One requirement is that you must use at least three recent peer reviewed articles to complete this assignment. Where would be the *best* library source for these articles?

- a. Search a general library database
  - b. Search a science database
  - c. Search the library catalog for books
  - d. Search the library catalog for encyclopedias
12. Please select the set of search terms that best represent the main concepts in the statement below.

**Statement: What are the effects of immigration on development in Africa?**

- a. Effects, immigration, development, Africa
  - b. Effects, emigrants, government, Africans
  - c. Effects, investment, Africans
  - d. I don't know
13. Which of the following set of responses best represent synonyms for the phrase "college students"?
- a. Colleges, universities, community colleges
  - b. Gen X, students, undergraduates
  - c. Undergraduate students, freshmen, sophomores
  - d. University, adult learners, educational attendees
14. The database in which you are searching permits you to abbreviate words by using an asterisk (\*). When you type in the word citizen\*, the records in your search results would include which of the following group of words?
- a. Native, responsibility, government
  - b. Native, government, citizens, aliens
  - c. Citizen, citizens, citizenry, citizenship
  - d. Tourists, immigrants, government
15. Your term assignment requires you to write a paper on "**the effects of technology on the operations of multinational corporations**". Your search for the term "multinational corporations" in the *Business Source Complete* database yielded over 20,000 articles. To narrow your search, which of the following steps would you perform?
- a. Add "businesses" as a keyword
  - b. Add "technology" as a keyword
  - c. Look for articles from 1898 to present
  - d. Include all publication types (e.g. books, magazine, newspapers industry profiles, trade publications) in your search
16. What does the following reference citation represent?
- Landorf, H. (2009). Towards a philosophy of global education. In T. F. Kirkwood-Tucker, *Visions in Global Education: The globalization of curriculum and pedagogy in teacher education and schools: Perspectives from Canada, Russia, and the United States* (pp. 47-67). New York, NY: Peter Lang.**
- a. A book
  - b. A chapter in a book
  - c. A journal article
  - d. An ERIC document

17. In preparation for your next assignment on global citizenship, your professor recommends that you read the following article.

**Reimers, F. M. (2013). Education for Improvement: Citizenship in the global public sphere. *Harvard International Review*, 35(1), 56-61.**

In which of the following resources would you ***not*** be able to find this journal article?

- a. Google Scholar
- b. Wikipedia
- c. The Journal *Harvard International Review*
- d. The articles database on the library website

18. Take a look at the following item that was retrieved from searching in the ERIC library database. What kind of document is it?

**Title:** Engineering Education for Leadership in the 21st Century

**Author:** Wirasinghe, Chan

**Publication Year:** 2000

**Abstract:** The engineering profession and, consequently, the education process for engineers must respond to several new realities in order to be successful in the 21st century. Some aspects of the new reality that are relevant to engineering education are as follows: the globalization of commerce; the information revolution; innovations in technology; the new emphasis on sustainable development; recognition of the need for lifelong learning and gender equality; the role of engineers in nations' future prosperity and the political process; the rise of multinational corporations and new start-up companies. . .

**Note:** In: TEND 2000: Proceedings of the Technological Education and National Development Conference, "Crossroads of the New Millennium" (2nd, April 8-10, 2000, Abu Dhabi, United Arab Emirates); see CE 080 883. This paper builds further on a previous paper titled "Challenges and Opportunities in Engineering Education."

ERIC Number: ED446281

- a. A book
- b. Journal article
- c. Conference paper
- d. Book chapter

19. A recent search using an Internet search engine produced the following result. Who owns this website?

***2015 World Hunger and Poverty Facts and Statistics.***

<http://www.worldhunger.org/articles/Learn/world%20hunger%20facts%202002.htm>

- a. An educational institution
- b. Business or commercial entity
- c. Other organization
- d. A governmental or state agency

20. While researching an assignment on the U.S. legislative system, you find the following story on the Internet.

WASHINGTON, DC—Hoping to counter ignorance of the national legislative body among U.S. citizens, congressional leaders named the first week in August National Congress Awareness Week. "This special week is designed to call attention to America's very important federal lawmaking body," Speaker of the House Paul Ryan said. The festivities will kick off with a 10-mile Walk for Congress Awareness. The item is from a newspaper website, describes itself as "America's Finest News Source." Given this information, which of the following action would you take?

- a. You can use the story as it's obviously from a reputable news source
- b. You decide to investigate the reputation of the publisher by looking at their Web site
- c. You decide to investigate the reputation of the publisher by looking at other Web sites
- d. You should not use the story because Web information is not always trustworthy

21. Read the following paragraph and select the sentence which is appropriate for you to cite.

(1) Women now holds 51.4 percent of managerial jobs and professional jobs. (2) People in the poorest countries are ensnared in a poverty trap. (3) As American economics, politics, and demography become more globalized, so does many sectors of American culture. (4) In his discussion of global citizenship, Appiah (2008) notes that a respect of diversity and culture is the center of modern cosmopolitanism.

- a. 1
- b. 2
- c. 3
- d. 4

22. When is it ethical to use the ideas of another person in a research paper?

- a. It is never ethical to use someone else's ideas
- b. Only if you do not use their exact words
- c. Only when you give them credit
- d. Only when you receive their permission

23. You are planning to participate in an international education open house event, on campus, in which you will do a presentation on human trafficking. Browsing the Internet, you find the report *Trafficking in Persons Report 2015*, which is a U.S. Department of State publication. If you distribute 30 copies of the report to students at the open house, which of the following copyright choices is the proper action?

- a. Permission is not needed as the report is from a government agency
- b. Permission is not needed as the report was found on the Internet
- c. Permission is not needed as you are only distributing 30 copies
- d. Permission to distribute 30 copies of the report must be acquired

24. Your class assignment requires you to use a statistical software to analyze data. Though you have access to the software in the college laboratory, you decided to borrow a copy from your friend who had purchased it. You then loaded it on your computer to complete the assignment. Is this legal?

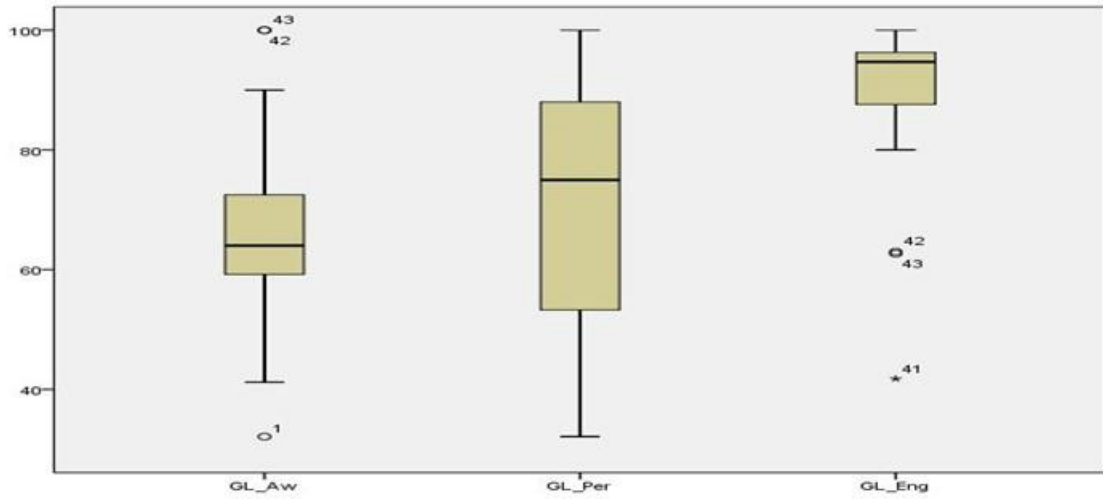
- a. No, because this action constitutes a violation of copyright
- b. Yes, because it is education software and therefore able to be shared

- c. Yes, because it is already freely available in the lab
  - d. Yes, because your friend owns it and can share as he wishes
25. What is your gender?
- a. Male
  - b. Female
  - c. Don't wish to disclose
26. Select, from below, the number of languages that you speak fluently?
- a. One
  - b. Two
  - c. Three or more
27. Which language, other than English, do you speak frequently?  
\_\_\_\_\_ (List only one).
28. Which of the following best represents your race/ethnicity?
- a. Asian, Asian American or Pacific Islander
  - b. American Indian or Alaskan native
  - c. Black or African American
  - d. Hispanic or Latino
  - e. European or White (non-Hispanic)
  - f. Other \_\_\_\_\_
29. Which of the following best represents your household income level?
- a. Under \$25,000
  - b. \$25,000 to \$49,000
  - c. 50,000 to \$74,000
  - d. \$75,000 to \$ 99,000
  - e. \$100,000 and above
30. Which of these ranges is an accurate estimate of your overall GPA?
- a. 3.5 – 4.0
  - b. 3.0 – 3.49
  - c. 2.5 – 2.99
  - d. 2.00 – 2.49
31. Please select your college/school
- a. College of Architecture and the Arts
  - b. College of Business Administration
  - c. College of Arts, Science and Education
  - d. College of Engineering and Computer Science
  - e. College of Law
  - f. College of Medicine

- g. College of Nursing and Health Sciences
- h. College of Public Health and Social Work
- i. Honors College
- j. School of Hospitality and Tourism Management
- k. School of Journalism and Mass Communication

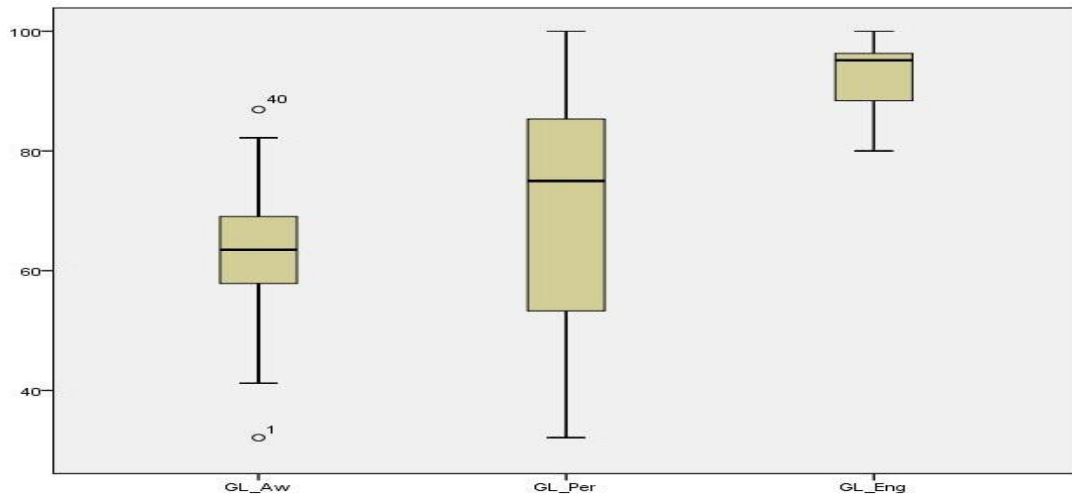
## Appendix F

Test for Outliers in Global Awareness, Perspective, Engagement  
Boxplot for Outliers



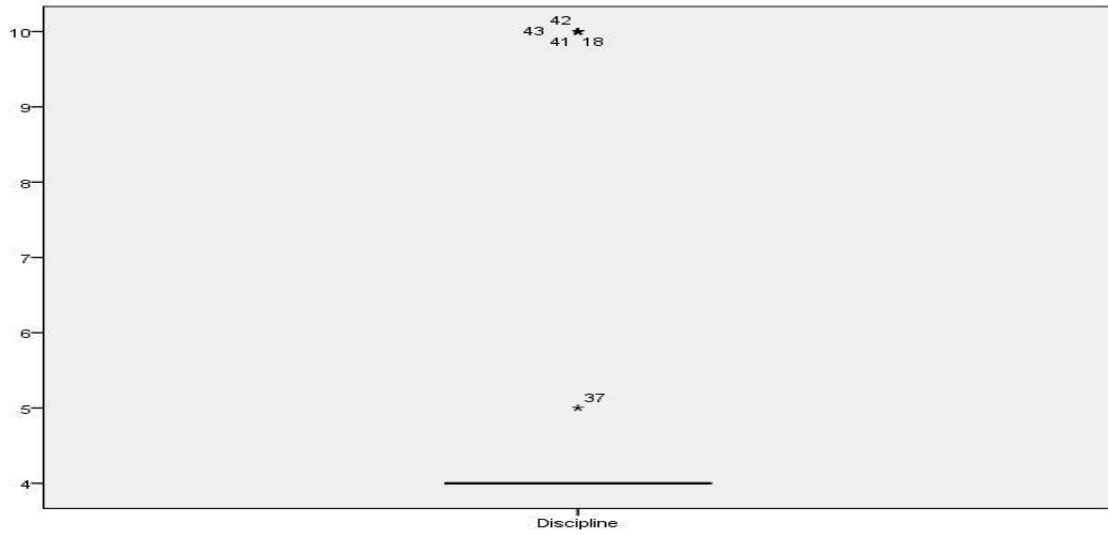
Test for Outliers in Global Awareness, Perspective, Engagement

Boxplot for Outliers - Extreme Value Removed for Global Engagement



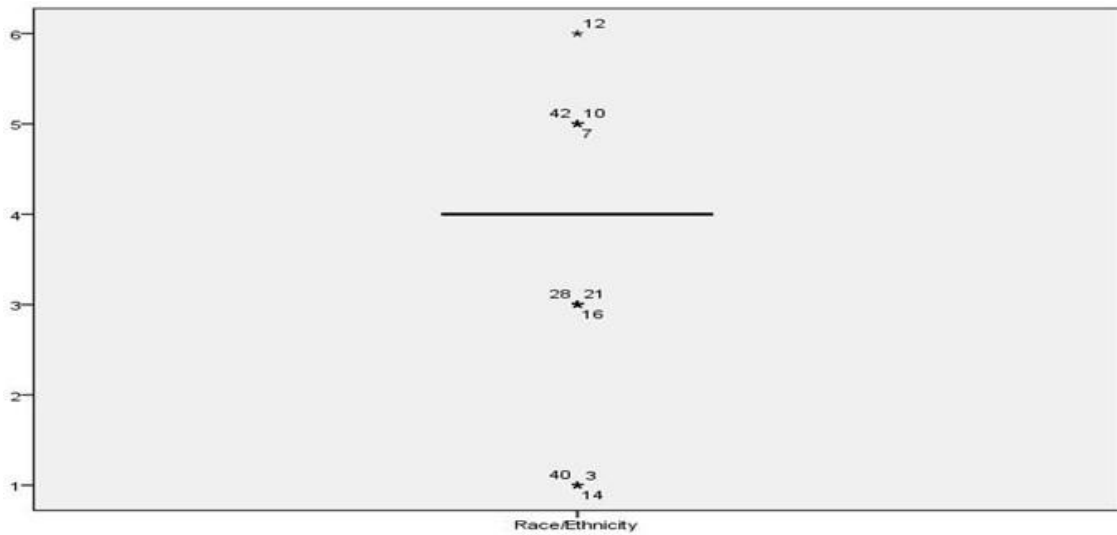
### Test of Outliers for Discipline

Boxplot test for Outliers: Discipline



### Test for Outliers in Race/Ethnicity

Race/Ethnicity: Boxplot test for Outliers





**Appendix G**  
**Multicollinearity**

**Correlations**

		IL_Score	Income	GPA	Gender	Class status	Race/Ethnicity	Lang2	Discipline
IL_Score	Pearson Correlation	1	-.101	.149	.177	-.012	-.015	.032	-.003
	Sig. (2-tailed)		.523	.352	.256	.939	.925	.837	.986
	N	43	42	41	43	43	43	43	43
Income	Pearson Correlation	-.101	1	.212	-.141	-.343*	-.028	-.127	-.360*
	Sig. (2-tailed)	.523		.184	.373	.026	.859	.424	.019
	N	42	42	41	42	42	42	42	42
GPA	Pearson Correlation	.149	.212	1	.091	-.323*	.019	-.174	-.269
	Sig. (2-tailed)	.352	.184		.570	.039	.906	.275	.088
	N	41	41	41	41	41	41	41	41
Gender	Pearson Correlation	.177	-.141	.091	1	-.100	-.328*	-.009	.059
	Sig. (2-tailed)	.256	.373	.570		.525	.032	.952	.708
	N	43	42	41	43	43	43	43	43
Class status	Pearson Correlation	-.012	-.343*	-.323*	-.100	1	-.008	.267	.629**
	Sig. (2-tailed)	.939	.026	.039	.525		.960	.083	.000
	N	43	42	41	43	43	43	43	43
Race/Ethnicity	Pearson Correlation	-.015	-.028	.019	-.328*	-.008	1	-.058	.159
	Sig. (2-tailed)	.925	.859	.906	.032	.960		.710	.310
	N	43	42	41	43	43	43	43	43
Lang2	Pearson Correlation	.032	-.127	-.174	-.009	.267	-.058	1	.122
	Sig. (2-tailed)	.837	.424	.275	.952	.083	.710		.435
	N	43	42	41	43	43	43	43	43
Discipline	Pearson Correlation	-.003	-.360*	-.269	.059	.629**	.159	.122	1
	Sig. (2-tailed)	.986	.019	.088	.708	.000	.310	.435	
	N	43	42	41	43	43	43	43	43

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

## Appendix H

Regression Model for Global Awareness

*Coefficients Table for Global Awareness*

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	68.461	6.195		11.051	.000
	IL_Score	-.060	.120	-.078	-.500	.620

a. Dependent Variable: GL\_Aw

Regression Model for Global Perspective

*Coefficients Table for Global Perspective*

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	73.332	8.149		8.999	.000
	IL_Score	-.063	.158	-.062	-.399	.692

a. Dependent Variable: GL\_Per

Regression Model for Global Engagement

*Coefficients Table for Global Engagement*

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.928	.168		5.509	.000
	IL_Score	-.001	.003	-.055	-.353	.726

a. Dependent Variable: GL\_En\_Log10

## Appendix I

### Letter Requesting Participation in Study

Dear Professor . . . ,

My name is Valda Adeyiga and I am an Ed.D student in the School of Education in the College of Arts Science and Education at Florida International University (FIU). I am writing to request your permission to conduct a survey and collect global learning assessment data in your fall 2016 undergraduate global learning course(s) at FIU.

I am writing to you because you participated in the Assessment in Action study last year, which explored the influence of faculty/librarian instructional collaborations on students' information literacy and global learning outcomes.

The purpose of my study is to investigate the relationship between students' information literacy skills and their performance on assessments of the three global learning outcomes: global awareness, global perspective, and global engagement. The primary research question for this study is: What is the relationship between undergraduate students' scores on an information literacy assessment, and their performance in global awareness, global perspective, and global engagement assessment activities?

Data will be collected using an information literacy assessment survey, as well as students' scores from the course's global awareness, global perspective, and global engagement assessment activities. It is estimated that the survey will take approximately 15 minutes to complete, and can be delivered online; however, if you prefer, paper surveys can be administered in class(es). Ideally, I would like to administer the survey in the last three weeks of class.

The findings from this study may be instructive to students, professors, librarians and university administrators regarding undergraduate students' success. I am attaching a copy of the survey instrument for your review.

Thank you for your consideration of my request. I will be happy to further discuss my study with you, either over the phone, via email or in-person and at your convenience.

Sincerely,

## Appendix J

### Consent to Participate in Study

**FIU IRB Approval:** 06/08/2016

**FIU IRB Expiration:** 06/08/2017

**FIU IRB Number:** IRB-16-0222

Page 1 of 2

#### **ADULT CONSENT TO PARTICIPATE IN A RESEARCH STUDY**

##### **The Relationship between Information Literacy and Global Learning**

You are being asked to be in a research study. The purpose of this study is to investigate the relationship between student performance in information literacy and in a global learning course. If you decide to be in this study, you will be one of 535 people in this research study. Your participation will require 15-18 minutes of your time. If you agree to be in the study, we will ask you to complete this survey. This requires you to respond to multiple choice questions that address your knowledge of information literacy.

There will be minimal risks to you for participating in this research study. The risks may not be more than that which take place in daily life when you go about your business. There will be no direct benefit to you for participating. However, the results from this research project may provide valuable information to students and the university regarding students' success in global learning courses.

If you do not wish to participate in the survey you will be asked to complete the following:

- Access the *Academic Search Complete* library database;
- Locate three scholarly/peer-reviewed articles, published after 2005, that address global awareness, perspective or engagement;
- Create an APA reference list for all three articles.

If you start the survey but did not complete it, you will need to locate two of the abovementioned articles and create the references for them.

The records of this study will be kept private and will be protected to the fullest extent provided by law. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher team will have access to the records. However, your records may be reviewed for audit purposes by authorized University or other agents who will be bound by the same provisions of confidentiality.

You will not receive a payment for participation in this study, and you will not be responsible for any costs to participate in this study. Your participation in this study is voluntary. You are free to participate in the study or withdraw your consent at any time during the study. Your withdrawal or lack of participation will not affect any benefits to which you are otherwise entitled. The investigator reserves the right to remove you without your consent at such time that they feel it is in the best interest.

**FIU IRB Approval:** 06/08/2016  
**FIU IRB Expiration:** 06/08/2017  
**FIU IRB Number:** IRB-16-0222

Page 2 of 2

If you have any questions about the purpose, procedures, or any other issues relating to this research study you may contact Valda Adeyiga at email vadey001@fiu.edu. If you would like to talk with someone about your rights of being a subject in this research study or about ethical issues with this research study, you may contact the FIU Office of Research Integrity by phone at 305-348-2494 or by email at ori@fiu.edu.

**PARTICIPANT AGREEMENT**

I have read the information in this consent form and agree to participate in this study. I have had a chance to ask any questions I have about this study, and they have been answered for me. I understand that I will be given a copy of this form for my records.

\_\_\_\_\_  
Signature of Participant Date

\_\_\_\_\_  
Printed Name of Participant

\_\_\_\_\_  
Signature of Person Obtaining Consent Date

## Appendix K

### Group Project and Description – HFT 3701

#### Group Project

#### Group Presentation and Final Report

#### **Overall Overview**

Your project will be done in group highlighting economic, socio-cultural and environmental impacts from the perspective of different stakeholders and how tourism impacts are interrelated. You will also highlight how sustainable tourism could minimize negative impacts and maximize positive impacts on the economy, local peoples/ cultures and environment.

Here are the steps to take after you are settled in your group:

1. Pick a destination of your choice.
    - a. Briefly describe the destination you chose: Where? How to get there? Is it developed? What type of visitors? Where do visitors come from?
  2. Examine what stage of the destination life cycle it is in, what type of tourists it attracts, and what major impact tourism has on the environment, society and culture as well as the local economy.
    - a. Analyze the socio-cultural, economic and environmental impacts tourism has in the destination. Look at both positive and negative impacts in the three areas.
  3. Describe these through the lenses of various stakeholders such as local people, tourists, and multinational corporations.
    - a. At a minimum, give the perspectives of three different stakeholders.
    - b. Explain the interrelatedness of these stakeholders and issues.
  4. Lastly, describe what can or is being done in the destination to enhance sustainability in these three areas.
    - a. Is there a local certification agency or effort to promote/develop sustainability in your destination? If so, what is it? Briefly explain the effort or ecolabel. What are the major problems in the destination that need to be addressed?
- A presentation and a paper are expected the day the group presents to the class.
  - Write a minimum of 5 pages with a cover page and reference page. APA style 6<sup>th</sup> edition.
  - Your group will have a 35min to 45max minutes to present your findings. Creativity on how to present including interactivities is encouraged.

#### **Presentation Details:**

Presentation will be assessed by professor (see grading standards below). Please refer to the project rubric grid.

#### **Presentation guidelines are as follows:**

- Presentation length should be no longer than 45 minutes

- Presentation should use visual aids (PowerPoint, Prezi, etc.), and include a title slide with group member names, the group number, the course information, and the report topic.
- Presentations should clearly describe and identify all the above on the destination.
- Presentations should provide recommendations as to what actions should be taken by industry in response to sustainable tourism practices.
- Information in presentation must be supported by the research (online, review of academic literature, trade publications, industry professional interviews, data based systems, content analysis, etc.).
- Presentations should include an opportunity for discussion and feedback.
- Presentation visuals (PowerPoint slide title/Prezi link) should be submitted to ‘assignment group project’ no later than day of presentation.

**Report Details:**

- A title page, including group member names, the group number, the course information, and the report topic.
- In-text citations for all direct quotes and an APA style reference list of all sources used in the project and final report.

Failure to contribute equally to the success of the group presentation and report may result in receiving a zero for one or both of the assignments. Should there be a conflict within the group, students should exhaust EVERY effort to remedy the conflict within the group using professional, appropriate, prompt, and regular communication. Students should notify the professor ONLY AFTER every effort has been made to resolve the conflict within the group so that mediation may take place. Failure to notify the professor of a group conflict prior to the end of the semester will be taken as an indication that group members accept equal reward for unequal contribution.

**Individual Project HFT 3701**

**Individual Project Topic**

**Assignment Information**

From the chapter assigned, choose a topic – it can be a not for profit institution, a case study or a new concept. It is suggested for students to look under “On the Net” at the end of each chapter to choose topic.

**Respond to this assignment labeled “Individual Project Topic” for 5 points. Include the reason why you decided on the topic.**

Students will report to the class on this topic with a 20 minute minimum, 30 minutes maximum presentation and an interactive exercise on the day that chapter will be reviewed as indicated in the course syllabus calendar. Students are to post a summary of their topic to the allocated Blackboard discussion board prior to presenting in class. In this post, students may include links to media/articles if appropriate.

## VITA

### VALDA ADEYIGA

Born, Clarendon, Jamaica

1980-1984	B.A., Library Science University of the West Indies Kingston, Jamaica
1984-1990	National Library of Jamaica
1990-1994	Planning Institute of Jamaica
1994-1997	M.A., Library and Information Science University of South Florida Tampa, Florida
1997-2000	Director of Library Resources Trinity International University Miami, Florida
2000 - Present	Librarian Miami Dade College Miami, Florida

### PUBLICATIONS AND PRESENTATIONS

Adeyiga, V. (2013, March 12-14). Human rights in the pursuit of environmental quality. *Paper presented at the International Education Conference*. New Orleans, LA.

Adeyiga, V., Machado Dilon, C., & Porges-West. (2017, April 21). Hot Technologies in Information Literacy. *Presentation at the Dade County Library Association Spring Conference*. Miami, FL.

Nwonko, V., Samms, E., & Adeyiga, V. (2006, March 2). Hiding in plain sight: A look at the hidden curriculum in higher education. *Conference Day speaker at Miami Dade College*. Miami, FL.