THE RELATIONSHIP BETWEEN ENGAGEMENT AND PERCEIVED ACADEMIC, PERSONAL, AND SOCIAL OUTCOMES FOR SENIOR INTERNATIONAL UNDERGRADUATE STUDENTS IN RESEARCH UNIVERSITIES

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ABSTRACT

The purpose of this study was to examine the extent to which five engagement benchmarks that encompass educationally purposeful activities namely: (i) level of academic challenge , (ii) active and collaborative learning ,(iii) student-faculty interaction , (iv) enriching educational experiences and (v) supportive campus environment predict various dimensions of self- reported or perceived academic, personal, and social development/ growth for senior international students at Research Universities. The benchmarks were regressed against the following self-reported outcomes: i) acquiring a broad general education, acquiring job or work-related knowledge and skills, thinking critically and analytically, working effectively with others learning effectively on your own, and understanding yourself. Results indicated that for this sub-population, a supportive campus environment and the level of academic challenge were the best predictors of the self- assessed outcomes. Students had lower means in the student-faculty interaction and enriching educational experiences indicating less engagement in these benchmarks. On average, students reported gaining more in thinking critically and analytically and acquiring a broad and general education, although their average gains were still lower compared to the grand mean for the overall NSSE 2005 sample.

DEDICATION

To my husband John Irungu Kirika, and my children: Beth Wairimu Irungu, Polly Njoki Irungu and Matthew Kirika Irungu

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CHAPTER ONE

Introduction

In recent decades, higher education has become an increasingly important global commodity traded across political and geographical boundaries (Swail, 2002). Students seeking higher education have become mobile and are pursuing educational opportunities outside their countries of origin. According to the *Organisation for Economic Cooperation and Development* [OECD] *2007 Report*, 2.7 million students are enrolled in foreign institutions worldwide. This number is twice the number of students who had been enrolled a decade earlier. OECD (2007) also reports that 52 % of these students are enrolled in institutions in France, Germany, the United Kingdom, and the United States [U.S.], and these countries are competing to enroll more international students in their institutions of higher learning (Andrade, 2006).

In the last decade, research has consistently documented that in the U.S. nearly half a million students enrolled in colleges and universities are from abroad (Andrade & Evans, 2009; Keller, 2001; Lee & Rice, 2007; Poyrazli & Kavanaugh, 2006; Tomich, McWhirter & Darcy 2003; Tomich, McWhirter & King, 2000; 2006; Zhai, 2002). According to the *Institute of International Education's Open Doors Report* (IIE, 2008), a total of 623,805 graduate and undergraduate international students were enrolled in U.S. colleges and universities in the year 2007-2008, an increase from the earlier total of 582,984 in the academic year 2006-2007. These students currently account for 3.5% of the total U.S. higher education enrollment (IIE, 2008). International student recruitment has become an industry as institutions compete for foreign students both nationally and internationally (Lee, 2007; Mahat & Hourigan, 2006). The students are being sought after for academic, social, economic, and political reasons.

Although the majority of international students enroll as graduate students (Labi, 2006, 2007), almost a quarter of a million (243,360 in 2007-2008) were undergraduates. This research will focus on undergraduates whose numbers have seen a 2.9% cumulative increment in the last couple of years, after four consecutive years (2002-2006) of negative gains (IIE, 2008).

As the world becomes more and more interconnected, international students have been sought and welcomed as agents of diversification and internationalization of higher education in the U.S. Many universities and colleges hope that by increasing the numbers of undergraduate and graduate students from different world cultures, domestic students will have opportunities to learn about other cultures. This, it is believed, will provide the much needed intercultural awareness and interconnectedness in this era of globalization (Dillion & Swann, 1997). Mahat and Hourigan (2006) agree that the presence of international students on campuses provides "domestic students with greater opportunities for understanding other cultures and being exposed to different viewpoints about academic and social ideas" (p.1). For some American students, international students are the first close and extensive contact with foreigners (Klomegah, 2006, p. 303). On the other hand, international students learn more about their host countries, and thus act as ambassadors, strengthening relations with various countries in world trade and developing social networks that promote global understanding (Lee, 2007; Mahat & Hourigan, 2006). As America continues to work to improve its foreign relations and image abroad, international students constitute an "exceptional reservoir of good will" and are a foreign policy asset that is probably undervalued (Klomegah, 2006, p. 303).

Perhaps, the most mentioned reason for international students' recruitment is the financial aspect. The cost of higher education has sky rocketed in the last few years. Inflation has been growing faster than the federal and state allocations for higher education support each year

(Archibald & Feldman, 2008; Hauptman, 1997; Johnstone, 2001; Supiano, 2008) .For many universities and colleges, international students provide much needed revenue through out- of-state tuition (Andrade, 2006; Chapdelaine & Alextich, 2004; Zhai, 2002).

International students' presence has also become a great boost to the U.S.'s economy. As the country's fifth largest service sector export, international students and their families injected more than 15 billion dollars into the U.S economy in 2007-2008 (IIE, 2008). The government, higher education administrators, and other stakeholders, therefore understand that international students have become an important segment of the U.S. higher education landscape. This landscape will continue to change as higher education continues to expand its recruitment well beyond its borders. For this reason, the collegiate experiences of international students in an area as critical as their engagement patterns and outcomes of their educational experience should be given more attention by researchers.

The above section has provided a background on international students in the U.S. The following section outlines the problem statement and the research questions that will be addressed.

Statement of the problem

The continued push for accountability in, and assessment of the quality of higher education is raising serious focus on learning productivity in all types and for all segments of the college populations (Shulman, 2007; U.S. Department of Education, 2006). Students are looking at themselves more as customers of a commodity that has become increasingly expensive, and stakeholders are insisting that colleges show evidence that higher education is taking learning seriously for all students without "leaving any student behind." Learning is the ultimate goal, and there is need, therefore, to assess whether students are learning. Engagement, which is defined as

"the time and energy students devote to educationally sound activities inside and out-side of the classroom, and the policies and practices that institutions use to induce students to take part in these activities" (Kuh, 2003 p. 25) has become a popular approach of assessing the quality of student experiences and a means to measure whether students are benefiting from the varied educational activities in which they are engaged. Previous research has examined engagement patterns among different sub-populations: gay, lesbian, bisexual, and transgender (Gonyea & Moore, 2007), African –American students (Chen, Ingram, & Davis, 2007; Harper, Carini, Bridges & Hayek, 2004), Latinos (Laird, Bridges, Holmes, Morelon, & Williams, 2004), commuting students (Kuh, Gonyea & Palmer, 2001), first and second-generation students (Pike & Kuh, 2005a), first generation and low income students (Filkens & Doyle, 2002), Greek students (Hayek, Carini, O'Day & Kuh, 2002) and engagement by gender (Kinzie, Gonyea, Kuh, Umbach, Blaich & Korkmaz, 2007; Umbach, Kinzie, Thomas, Palmer, & Kuh, 2007). While research has answered questions about engagement for different groups, there is a growing concern that not much research has been directed to international students' engagement experiences in the United States (Bevis, 2006). Most specifically, there is minimal research that has been directed to understanding their engagement in educationally purposeful activities and whether these activities are producing desired learning outcomes (Bridges et al., 2005; Zhao et al., 2005). As researchers (Carini et al., 2006; Klein et al., 2005) note, a study that connects engagement and outcomes not only helps to inform about what activities affect desired outcomes, but also helps to measure institutional effectiveness. Such a study also gives a clearer picture of student learning, than do studies that focus exclusively on outcomes or engagement patterns without linking the two.

The case for international students is especially unique given the fact that they come from varied cultures and varied educational systems whose perspective on learning styles, resource utilization, and engaging of support services may be very different from what they experience in the U.S. (Frey & Roysircar, 2006; Poyrazli & Grahame, 2007). There exists voluminous literature that has documented personal, academic and social problems that international students face while trying to adjust to unfamiliar norms and cultures in the United States. Personal transitional problems range from social- cultural shock (Brown, 2008; Chapdelaine & Alextich, 2004; Lacina, 2002; Lin & Yi, 1997; Tomich, et al., 2000; Wilton & Constantine, 2003) to psychological and emotional distress (Al-Sharideh & Goe, 1998; Constantine, Okazaki & Utsey, 2004; Westin, 2007; Ying, 2002; Zhai, 2002) that can sometimes lead to mental problems and depression. Researchers have also documented serious academic challenges common to international students (Dee & Henkin, 1999; Dillion & Swann, 1997; Furnham, 1997; Jung & McCroskey, 2004; Lacina 2002; Senyshyn, Warford, & Zhan, 2000; Tomich et al., 2003; Ying, 2002, 2003). These academic challenges range from inadequate English proficiency to unfamiliar pedagogy, classroom culture, and expectations. Socially, international students suffer loneliness and alienation (Klomegah, 2006; Trice, 2007), prejudice and discrimination (Bonazzo & Wong, 2007; Lee, 2007; Lee & Rice, 2007; Poyrazli & Lopez, 2007) and a lack of belonging that translates into feelings of loss, powerlessness, and low self-esteem (Campbell & Li, 2007; Frey & Roysircar, 2006; Poyrazli & Lopez, 2007). Thus, international students enter the American higher education system with some unfamiliarity of what is ahead of them.

Given the personal, academic and social transition that international students have to deal with in the new societal and educational system, and given the probability that the adjustment issues they experience can negatively influence their educational and social engagement, there is

a need to understand whether international students are engaging in educationally purposeful activities and whether they are reaping desired learner outcomes. As noted before, there remains a gap in the body of literature that deals with engagement in educationally purposeful activities for this sub-population. Research in student engagement (Bridges et al., 2005; Carini et al., 2006; Kuh, 1995, 1996, 1999, 2001, 2003, 2005; Kuh, Kinzie, Schuh, Whitt & Associates, 2005; Pascarella & Terenzini, 2005; Pike & Kuh, 2005b; Zhao et al., 2005) has identified engagement by students in educationally purposeful activities as highly correlated to desired academic, personal, and social outcomes. The more students engage in a wide range of educationally purposeful activities, the more likely it is that they will exhibit development personally, academically, and socially (Astin, 1993; Kuh & Hu, 2001). There is caution, however, about the assumption that all students have the desired outcomes as a result of engaging in educationally purposeful activities. As Pascarella and Terenzini (2005) underscore, closer attention should be given to the different sub-populations and their particular experiences because, "any given college experience may have a different effect on different kinds of students" (p. 626). Kuh (2003) emphasizes that it is important to examine different student sub-populations in order to gain an understanding of their engagement patterns independent of other groups. This is underscored by Kuh et al. (2005) who note that many schools work hard to provide quality experiences for their students and most students may already be engaged, but "for every student who has such an experience, there are others who do not connect in meaningful ways with teachers and their peers, or take advantage of learning opportunities" (p. 9). In his research, *High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter*, Kuh (2008) laments that, "on almost all campuses utilization of active learning practices is unsystematic, to the detriment of student learning" (p.1).

To get the most out of the collegiate experience, international students have to learn the necessary classroom and out-of class culture and have to fit into a new society. The question remains whether the effort by institutions to engage international students in educationally purposeful activities is yielding the necessary outcomes. Kezar and Kinzie (2006) observe that, "Within the American higher education there has long been concern about whether campuses effectively create engaging learning environments, especially as they have grown in size" (p.149). In large institutions, especially those in the research university category, where in most cases more focus may be geared towards research, and faculty are rewarded better for research productivity than for excellence in undergraduate teaching (Kuh & Hu, 2001), students may find themselves in "impersonal and passive learning environments" that may result in less satisfaction with the college experience and less learning (Kezar & Kinzie, 2006, p. 149).

Engagement in educationally purposeful activities has been touted as the best way to assess the quality of the undergraduate experience. It has been documented as the better evidence and more accurate measure of the quality of undergraduate education (Carini et al., 2006; Kezar & Kinzie, 2006; Kuh, 2007; Pike 2003). Educational outcomes, students' perception of the institution as supportive or not supportive, affirming or not affirming have all been linked to students' level of engagement in these activities (Filkins & Doyle, 2002; Kuh, 1995; Pike & Kuh, 2006; Pike, Kuh & Gonyea, 2003). Researchers are drawing the conclusion that there is a link between engagement and outcomes and that engagement in various educational purposeful activities may influence desired gains/outcomes in academic, personal and social development. It is expected that a student who is engaged in a variety of educationally purposeful activities will exhibit learning outcomes. However, we do not know if this holds true for international students and therefore the need for such a study. The next section highlights this study's significance.

Purpose of the study

The purpose of this study is to examine how the five engagement benchmarks (Kuh, 2003) that encompass educationally purposeful activities namely: (i) level of academic challenge [LAC], (ii) active and collaborative learning [ACL], (iii) student-faculty interaction [SFI], (iv) enriching educational experiences [EEE] and (v) supportive campus environment [SCE] predict various dimensions of self reported or perceived academic, personal, and social development/ growth for senior international students at Research Universities [RU]. Senior students are those who are in their fourth year of study. Research Universities in this study refer to institutions that were labeled as Doctoral/ Research Extensive and Doctoral/ Research Intensive under the Carnegie Classification of Institutions of Higher Education in 2004. Listings have since been revised to include other categories (The Carnegie Foundation for the Advancement of Teaching, 2009). The five benchmarks highlight specific educationally purposeful activities that are linked to different learning outcomes (see Appendix B for specific items under each benchmark).
The following specific questions will guide the study:

Research questions

1. To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their acquisition of a broad general education?
2. To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their acquisition of job or work-related knowledge and skills?

3. To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to think critically and analytically?
4. To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to work effectively with others?
5. To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to learn effectively on their own?
6. To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to understand themselves?

These research questions have been framed in the context of what engagement means and how it is linked to perceived outcomes. The following section discusses the theoretical framework that anchors engagement within current research on the collegiate experiences of college students.

Theoretical framework

Research in higher education has identified involvement and engagement by students in educationally purposeful activities on and off campus as highly correlated to learning, social and personal development, and satisfaction with the college experience (Bridges, Cambridge, Kuh, & Leegwater, 2005; Carini, Kuh & Kuh, 2006; Kuh, 1995, 1996, 2001, 2003, 2005; Pascarella, 2001; Pascarella & Terenzini, 2005; Pike & Kuh, 2005; Kuh, Kinzie, Schuh, Whitt & Associates 2005; Kuh, Kinzie, Buckley, Bridges & Hayek, 2006; Zhao, Kuh, & Carini, 2002). The theory of

student engagement (Kuh, 2001, 2003) provides a framework for this research because it conceptualizes how engagement practices affect outcomes in academic, personal and social development. Student engagement is defined as "the time and energy students devote to educationally sound activities inside and out-side of the classroom, and the policies and practices that institutions use to induce students to take part in these activities" (Kuh, 2003 p. 25). Kuh has combined ideas from Astin's (1987, 1993, 1996, 1999, 2003) theory of involvement, Chickering and Gamson's (1987) seven principles for good practice in undergraduate education, and Pace's (1980, 1984) quality of effort measures to establish student engagement theory. These three concepts are discussed below, to give a clearer insight into each.

Astin defines involvement as "the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1987, p. 134). He links involvement theory to learning by exploring three major interactive components: input, environment and outcome. *Inputs* are characteristics and experiences that students bring to college, namely: high school experiences, family background, marital status, age, gender, race, parental education, housing, and social experiences. *Environment* refers to programs, policies, faculty, peers, and educational experiences that a student will be exposed to while in college. *Outcomes* refer to students' characteristics, knowledge, skills, attitudes, values, beliefs, and behaviors *after* exposure to the environment. Students who are involved reap desired learning outcomes from their college experience.

Chickering and Gamson (1987) note that good practices in undergraduate education encourage student-faculty interaction, cooperation among students, active learning, prompt feedback, time on task, high expectations plus diverse talents and ways of learning. The assumption underlying these principles is that, when students are exposed to effective

educational practices, and when they are engaged at a high level in these activities, and when faculty use methods that are compatible with these practices and give timely feedback, students take more responsibility for their education and significant gains are reported in learning (Hu & Kuh, 2002).

Pace (1980,1984) emphasizes the contribution that students make to their own success; that what they get out of college is in part a product of what they have invested in terms of time and effort, and that what counts most in the college experience is not what students are or where they are, but what they do. He underscores the fact that "all learning and development require an investment of time and effort by the student" (Pace, 1980, p.10). The amount of effort that students expend towards the educational experience is unquestionably crucial to their academic, personal and social development and understanding. Pace makes it clear that the quality of effort leads to a quality experience and therefore "the likelihood of having high quality experience depends on investing high quality effort" (Pace, 1984, pp.5-6). The student, Pace notes, has to make use of the physical and non-physical facilities and opportunities that the institution provides in order to bring into fruition a good educational experience. The physical facilities include but are not limited to: libraries, classrooms, and laboratories; cultural, recreational and athletic facilities. The opportunities include: contact time with faculty and peers, involvement in clubs and organizations, informal dialogues on different topics, personal and interpersonal experiences, as well as academic experiences in and outside the classroom.

The principles discussed above are the foundation and backbone of engagement theory. Educators use them to identify and focus faculty and staff pedagogical behavior to practices that have been known to have positive outcomes for all students across all types of institutional settings (Kuh, Pace & Vesper, 1997). What students get out of their undergraduate education can

be correlated to an institutions' use of the above good practices in undergraduate education. Thus engagement theory brings together elements from different principles and applies it to students learning experiences.

Although engagement theory is an integration of the three principles discussed above, more often than not it has been used interchangeably with involvement theory. It is useful to note that there is a distinction between the two. Wolf-Wendel, Ward and Kinzie (2007) posit that engagement theory is distinct from involvement theory. Engagement theory differs from involvement theory in that it seeks to link student outcomes and effective educational practice, thus focusing a lot on what the institution is doing to help students achieve their goals, whereas involvement focuses more on what a student does. This conclusion was reached after interviewing the researchers who formulated the theories. The distinction helps in the understanding of the concepts- engagement and involvement- that are always used interchangeably without much thought to the different focus of each theory. I have tried in this research to use research that focuses on engagement. A more detailed understanding of engagement theory is outlined in the next section.

Student engagement theory

"Education is both a process and a product" (Pace, 1984).

The student and the institutions are two important components of engagement theory. The student has to do his or her share of getting involved by putting meaningful effort and time into their academic and other non-academic high impact educationally effective practices. According to Kuh (2007), these practices are marked by six conditions:

i. The devotion of considerable time and effort by the students to purposeful activities on a consistent basis,

ii. Interaction with faculty and peers about substantive matters over extended periods of time,

iii. Exposure to activities that promote diversity and cross-cultural understanding inside and outside the classroom,

iv. Working closely with faculty or academic mentors while receiving prompt and frequent feedback,

v. Working in different settings beyond the classroom e.g. research projects, study abroad or service learning and making sure that,

vi. All activities are done in the context of a coherent, challenging, active and collaborative curriculum.

A student who expends a lot of effort in order to fulfill these conditions is considered highly engaged. A student who expends less effort in these activities is considered less engaged or "dis-engaged" (Hu & Kuh, 2002). On the other hand, the institution has to offer the opportunities for engagement in terms of physical resources, curriculum, and support services. The latter, help to facilitate the knowledge acquisition, the satisfaction, the persistence, and graduation; all of which can be contextualized as student success (Bridges et al., 2005; Kezar & Kinzie, 2006). Proponents of student engagement underscore that it is the most important factor in student learning and personal development during college (Hu & Kuh, 2002) because it is about the student and the institution entering into an agreement about the educational experience (Wolf-Wendel et al., 2007). Each party has to fulfill its end of the bargain for outcomes to be realized. Kuh et al. (2005) insist that it is what students *do* (engaging in effective educational practices) during college that "counts more in terms of what they learn and whether they will persist in college than who they are or even where they go to college" (p. 8). Therefore, all

research on engagement is based on "the simple, but powerful premise that students learn from what they do in college" (Pike & Kuh, 2005b, p.1) and institutions have to do their part to make this happen. This concept is consistent with Pace's (1980) theory of student effort. There is evidence that the cumulative effect of engagement in the varied experiences have a positive impact on student learning, personal development and growth (Pascarella & Terenzini, 2005; Terenzini, Pascarella & Blimling, 2003). The more students engage in effective educational practices, the more they learn and develop academically, personally, and socially.

Evidence of learning can be noted from outcomes such as acquisition of a broad general education, acquisition of job or work- related knowledge and skills, ability to think critically and analytically, ability to work effectively with others, ability for students to understand themselves, and ability to learn effectively on their own. These outcomes account for a productive and satisfying life after college because during their engagement, students are able to develop "habits of the mind and the heart that enlarge their capacity for continuous learning and personal development" (Carini et al., 2006, p.2)

The concepts for student engagement are reflected in the National Survey of Student Engagement [NSSE], commonly known as *The College Student Report.* This survey assesses the extent to which students are engaged in educationally effective practices. In responding to the survey, students are asked to indicate the frequency with which they engage in these activities. The survey questions address student behavior and institutional conditions that provide a framework for understanding what matters to student learning and success (Kuh, 2006). The NSSE survey is divided into five clusters of effective educational practice. They are: level of academic challenge, active and collaborative learning, student –faculty interaction, enriching educational experiences and supportive campus environment (Kuh, 2001). These benchmarks

(which will be examined in detail in the literature review section) reflect the aspects of the student experience that help measure the extent to which a student is engaged and subsequently give an insight into whether students are achieving desired outcomes. How students score on these benchmarks provides “a tool for campuses to understand their performance and a mechanism for creating change” (Kezar & Kinzie, 2006, p. 151). The NSSE benchmarks also serve as a “window” into student performance, collegiate experience, and institutional quality (Kuh, 2003).

Although the survey does not assess student learning directly, responses on the survey give guidance on institutional improvement pointing out “aspects of student and institutional performance that a college or university can address almost immediately to improve the quality of the student experience” (Kuh, 2005, p.12). The responses are also revealing as to whether students are making gains in learning and whether the institution has created practices, cultures, programs, services or policies that support student success (Schroeder & Kuh, 2003). Effective student engagement is credited with being vital for student growth and the establishment of educationally powerful, supportive, and satisfying environments. In engaging environments, students deepen their learning and as a result they, “better understand themselves in relation to others and the larger world, and acquire the intellectual tools and ethical grounding to act with confidence for the betterment of the human condition” (Kuh, 2007, p. 8).

The following section highlights the contribution and significance of this study to research and practice in higher education.

Significance of the study

As the higher education demographics become diverse (Cole, 2007; Keller, 2001), and as measurement of educational experiences and institutional quality shift from ranking and

reputations to levels and quality of student engagement in different effective educationally activities for students (Carini et al.,2006; Kuh, 2003), there is a need for more specific and intentional studies that look at specific aspects of the college environment for specific sub-populations in order to provide more targeted advising and informed programming. Stakeholders in higher education are also demanding more accountability and evidence of learning. They insist there be more focus on student outcomes for all sub-populations. Studies on engagement have not examined in-depth acquisition of intended outcomes by international students (Bevis, 2006; Zhao et al., 2005). Pascarella and Terenzini (2005) suggest that some research may be focused on how different sub-populations experience college to gain a better understanding of different types of students' behavior because college environmental effects can impact students differently, a fact that is collaborated by other researches (Harper et al., 2004; Kuh, 2007; Zhao et al., 2005). As noted by Hayek and Kuh (1999), postsecondary education will continue to pose challenges for faculty, administrators and student affairs professionals as demographics continue to change and more research is required as to what works in student learning. Hayek and Kuh suggest that researchers examine individual activities that students engage in for more accuracy in trying to re-align resources, programs and services.

This study adds to the research on engagement by offering additional insights into international students' engagement and academic and personal outcomes. It is necessary to do research that seeks to provide evidence of linkages between desired outcomes and particular aspects of the college experience in order to facilitate and offer guidance to policy makers on useful strategies that can enhance learning productivity and assessment on what activities are linked with what outcomes. This research further help institutions identify whether international students are taking advantage of engagement activities and other learning opportunities available

to them for enrichment of their learning experience. Findings on what students are doing and whether outcome goals are being achieved will be useful to inform policy decisions that focus on international students' personal, academic and social needs. Faculty and staff will also find results useful as they interact with international students and as they establish pedagogical approaches and structured learning experiences that can help international students succeed in college.

CHAPTER TWO

Review of the literature

College students are diverse in terms of their demographics, their characteristics and their abilities. The college environments that they find themselves in are also heterogeneous with varied aspects that the student can interact with yielding varied academic, personal, and social developmental outcomes. International students have become a major segment of the college population in American higher education institutions and understanding their experiences and specifically how they engage with the academic and social environment that they find themselves in has become a legitimate concern for researchers, given the fact that they struggle to adjust to the new ways of learning in a new academic and social culture (Klomegah, 2006; Olivas & Li, 2006).

This chapter reviews literature pertaining to international students' engagement patterns. There is limited literature on international students that has been contextualized in engagement theory, but a lot has been written on their collegiate experiences. This review will therefore draw heavily from the international student literature that focuses on their academic, personal, and social collegiate experiences. The literature is organized into four sections that will explore the following: the five benchmarks of student engagement, student engagement and role of the institution, student engagement and developmental outcomes.

Benchmarks of student engagement

The NSSE benchmarks represent student behaviors and institutional factors that are related to student success. Although representing distinct educational concepts, the benchmarks are not mutually exclusive but are "complementary and interdependent" (Kuh et al., 2005) and

engagement can only be maximized if student experiences in these areas interact to promote levels of engagement, and if institutional practices support and affirm these pathways to success. The following section will examine the benchmarks of effective educational practices related to learning outcomes.

Level of academic challenge

This benchmark focuses on challenging intellectual and creative work that is considered central to student learning and collegiate quality (Kezar & Kinzie, 2006; NSSE, 2007; Kuh et al. 2005; Schroeder & Kuh, 2003). Institutions must focus on high student achievement by emphasizing student effort and setting high expectations for students and faculty. The items in this cluster focus on the extent to which students prepare for class or work harder than expected, use critical thinking skills, synthesize information and organize ideas. The numbers of written papers or reports by the students are also evaluated. They are considered of high impact if they are twenty pages or more.

According to Kuh (2001), students need to adequately prepare for class and work harder than required to meet high standards in assigned class work. The level of academic challenge and time invested in academic tasks has to be high enough to affect desired outcomes. Research has corroborated the fact that, the amount of time spent studying and how efficiently that time is used affects students' academic achievement (Kuh, 2001, 2003). The level that students engage in academic tasks and activities positively influences knowledge acquisition, skills development, and is linked to desirable learning outcomes such as critical thinking and grades (Carini et al., 2006).

When international students enroll in foreign institutions of higher learning, they find themselves in an unfamiliar, competitive and challenging academic environment. Most have no

idea that the educational culture and academic expectation differ significantly from what they are used to in their home countries (Bevis, 2006; Tatar, 2005). In their examination of barriers to adjustment and needs of international students, researchers have detailed the frustrations with the academic experience that international students have to go through: the classroom culture, the language difficulties in oral and written communication and sometimes the anxiety of trying to learn new learning styles (Lacina, 2002; Poyrazli & Grahame, 2007).

One of the issues that influence the level of academic challenge for international students is how the material is presented by faculty. Because learning and writing take place within the context of one's experiences (Trice & Yoo, 2007), and pedagogies are contextualized in societal values and norms (Campbell & Li, 2007), faculty normally transmit knowledge within the context of their culture and most international students feel they are being asked to learn within a context that is divorced from their own experiences and worldview (Tatar, 2005).

The other challenge involves pedagogical styles. Most international students come from teacher-centered environments where the faculty's role is to impart knowledge and the student's role is basically that of a passive recipient (Tatar, 2005). In such environments, the students become totally dependent on the teacher to provide knowledge, and the teachers expect the students to reproduce that knowledge without necessarily critiquing it. Thus, many international students who come to the U.S. to a start college level curriculum find it challenging to cope with pedagogical approaches and skills that emphasize critical thinking, analyzing, synthesizing, making judgments, questioning, debating and persuading (Campbell & Li, 2007; Lee, 2007; Robertson, Line, Jones, & Thomas, 2000; Westin, 2007). These multidisciplinary approaches are essential because they introduce students to complex and diverse perspectives that help contextualize learning and promote critical thinking (Zhao & Kuh, 2004).

Although contextualized learning and pedagogical approaches are critical in raising the level of engagement in learning for internationals students, the challenges with the English language remain greatest. English language proficiency is an important factor in predicting international students' academic development (Dee & Henkin, 1999; Poyrazli & Grahame, 2007) and the level of challenge that is posed by their academic and social activities depends on their level of proficiency in the English language. Several studies have focused on the issues of language ability and its effects on adjustment to the American culture and education system (Al-Sharideh & Goe, 1998; Dee & Henkin, 1999; Dillion & Swann, 1997; Furnham, 1997; Jung & McCroskey, 2004; Lacina 2002; Lin & Yi, 1997; Senyshyn et al., 2000; Stoynoff, 1997; Tomich et al., 2003; Ying, 2002, 2003; Zhai, 2002). Findings in these studies have shown that international students encounter great problems when communicating in English in academic and social settings whether written or oral. The findings were consistent with the importance of English language proficiency in the adjustment process, and that communication related problems were one of the toughest challenges for international students in the academic and social adjustment process. Students with better language skills have less difficulty in the adjustment process and exhibit better reading and writing skills, and more engagement with classmates and faculty. The difficulties with the English language are due to various reasons: differences in accent, pronunciation, slang, and use of special English words. All these have a negative effect on oral and written assignments (Zhai, 2002) .Although this challenge cuts across the board for most international students, researchers seemed to infer that Asian students' challenges with English proficiency was much worse than for other international students (Heggins & Jackson, 2003; Hsieh, 2006; Lee, 2007; Lin & Yi, 1997; Meyer 2001; Wilton & Constantine 2003; Zhiheng & Brunton, 2007). An investigation of adjustment among Turkish

college students (Poyrazli et al., 2001; Tatar, 2005) revealed the same challenges with English language skills and indicated proficiency in English was a predictor of academic performance and their general adjustment as well. Results indicated that those with better English language skills reported having higher GPA's. Other population specific studies drew the same conclusions. Studies detailed the same problems for international students from Africa (Blake, 2006; Constantine, Anderson, Berkel, Caldwell & Utsey, 2005; Constantine et al., 2004), and Latin America (Wilton & Constantine, 2003; Constantine et al., 2004), discounting what some researchers referred to as "stereotypes common to Asians" (Bonazzo & Wong, 2007, p.4)

Literature reveals that international students struggle to adjust to an educational system whose norms and learning styles are new, and this heightens the level of academic challenge. Nevertheless, although the level of academic challenge is unusually tough for them, it suffices to note that international students are hard working and very highly motivated. They set high expectations for themselves (Stoynoff, 1997). They also devote a lot of time to academic work and place a high value on academic success (Meyer, 2001). Whether this is out of self motivation or because of pressures put on them by their families back home (Poyrazli & Grahame, 2007), most international students work hard to meet the challenges of their new academic environment. Whether they achieve desired outcomes is part of what this study explores.

Active and collaborative learning

The central premise of this benchmark is that students learn more when they are intensely involved in their education and have opportunities to think about and apply what they are leaning in different settings (Kezar & Kinzie, 2006; Kuh et al., 2005; NSSE, 2007; Schroeder & Kuh, 2003). In assessing this benchmark, NSSE survey questions focus on student ability to collaborate with others in the acquisition of knowledge in and outside class, the ability to

participate in community-based projects, tutoring other students, and being actively engaged in class discussions.

Pedagogies that seek to invest in active and collaborative learning have been applauded as the best way to achieve intended outcomes for learners (Kuh et al., 2005). These pedagogies assume a more engaging approach e.g., classroom discussions, learning communities, internships, peer tutoring, service learning, and field trips. Engaging pedagogies as opposed to passive ones, foster student learning and help students achieve desirable outcomes in academic, personal, and social development. Student engagement theory emphasizes the need for students to be actively engaged in their learning inside and outside the classroom, and also be able to work collaboratively with others in problem solving and experiential learning in different settings. When students work collaboratively in groups to make class presentations or to participate in community projects together, they develop the ability to connect with others and enhance their interpersonal skills (Zhao & Kuh, 2004).

International students have scored low on engagement in active and collaborative learning. Zhao et al. (2005) compared international and American students' engagement in effective educational practices and concluded that senior international students were less engaged than their American counterparts in active collaborative learning, community service, and were less satisfied with their overall college experience. This study particularly noted that Asian international students scored lower in this benchmark compared to White and Black international students.

Researchers have tried to figure out why international students are not eager to engage in collaborative learning. Ladd and Ruby (1999) found that this mode of pedagogy is not so familiar to international students who are more often than not used to the passive methods of rote

and lecture. The interactive methods that seek active engagement of the student tend to intimidate international students who are unsure of their English language skills and are afraid to speak or engage in classroom discussions (Andrade, 2006; Robertson et al., 2000). International students have been found to be passive and non-assertive in collaborative learning approaches (Poyrazli, Arbona, Nora, McPherson & Pisecco, 2002; Poyrazli & Kavanaugh, 2006).

In a study by Wilton and Constantine (2003) focusing on Asian and Latin American students, research findings indicated that deficiency in language skills hindered the students from being active in social and academic settings. This resulted in stress and other psychological problems. Participants in the study were 125 students from 5 different Asian countries, and 65 students from 4 different Latin American countries, who were attending a predominantly white university in the U.S. Educational levels of the participants ranged from freshmen to graduate students. Data were collected through a survey packet consisting of a general psychological distress checklist, a demographic questionnaire and analyzed in a multiple regression.

In another study, Liu (2002) found that, Chinese students did not actively participate in academic and social interactions in the American classroom. They were frustrated and disillusioned and blamed it on the challenge of negotiating a second language. They resorted to silence during participatory activities.

These studies are consistent with earlier findings by Dillion and Swann (1997) who in an exploratory study with Asian students from Thailand, Indonesia, and Malaysia had concluded that students who were uncertain of their English skills interacted less and were less satisfied with their learning process. In a more recent study, the same findings were reported by Poyrazli and Grahame (2007) who did a study with both undergraduate and graduate students from Germany, Korea, India, China, Turkey, and Mexico. Students in this study expressed their fear of

participation in class discussions. They indicated that they were afraid of making mistakes because of their perceived inadequacy in the English language. They were also afraid that their classmates and professors would ridicule their inability to be proficient. The students also expressed frustration and disappointment for loss of participation points because this impacted their final academic grades.

Inadequacy in spoken English may be a problem for international students, but it may not be the only reason why their level of participation is lower than for American students. In a qualitative study involving 338 international students from Turkey, Tatar (2005) found out that unfamiliarity with discussion as a learning and teaching method raised anxiety among international students and hence most of them preferred not to participate in classroom discussions. Students reported having problems in coping with the spontaneous nature of classroom discussions and preferred more structured discussion where the instructor took the lead in asking the students questions. Students reported that they did not find oral participation a major contributor to their own academic learning and were frustrated with the perception that their peers had on their silence during class. Most international students expressed that fact that their silence was not incapacity to learn as interpreted by some of their peers and they just preferred to work alone to avoid the risk of being misunderstood (Ladd & Ruby, 1999).

In other studies, the idea of lack of active and collaborative learning among international studies was doubted. Heggins and Jackson (2003), and Campbell and Li (2007), had ambivalent results about the lack of collaboration by international students. The authors noted that, in cases where the students felt valued by the group, they were more likely to collaborate using those opportunities to enhance their English skills, broaden their understanding of the course or assessment-related issues, and develop their negotiating, teamwork, interpersonal

communication skills, and to make friends (Campbell & Li, 2007). In other findings, the culture of silence and passivity by international students was due to living in countries whose social and political cultures discouraged autonomy, assertiveness, and self promotion (Essandoh, 1995). Some students come from countries ruled by dictators and self expression in whichever way is discouraged, while for other students speaking up in class without being called upon to by the instructor was "inappropriate and disrespectful" (Liu, 2002, p. 49). Liu gives an example of China where the classroom culture dictates that, "the students' major role is to listen attentively and understand the lecture. Unless expected to speak up, students are supposed to be quiet in class and take notes if they have any questions" (Liu, 2002, p. 49).

Collaborative learning has been lauded as a new way of learning that helps students to be more creative and take some ownership of their learning. As discussed above, international students are often uncomfortable with collaborative learning approaches especially where they have to make oral contributions. However, because of the importance of active learning in knowledge acquisition and intellectual development, there is need for instructors to find ways to be inclusive of diverse learners. As Beykont and Daiute (2002) conclude in their exploratory study of inclusiveness in higher education courses:

> Assumptions about teaching and learning in higher education have to be reexamined to respond to the growing diversity of the student population….the design of teaching/learning experiences in universities should include closer attention to the nature and purposes of classroom interaction, how diverse interaction patterns relate to participants' assumptions and theories of teaching and learning, and what kinds of contexts support diverse types of interaction (p. 41).

Student –faculty interaction

Student-faculty interaction is one of the college sub-environments that have been identified as having a positive contribution to students' acquisition of knowledge and other intellectual competencies (Anaya & Cole, 2001; Cole, 2007; Pascarella & Terenzini, 2005). These interactions between students and faculty have been lauded as essential for student development and essential to high quality learning experiences (Kuh et al., 2005).

The student-faculty interaction benchmark focuses on the amount and quality of interactions in and outside the classroom between students and faculty. Interactions could range from discussing class assignments, readings, grades and career plans. When interactions are frequent and enriching, they enhance students' cognitive and affective growth because students are able to learn directly from faculty by mentorship while being offered prompt feedback about their progress (Filkins & Doyle, 2002; Kezar & Kinzie, 2006; Kuh et al., 2005; NSSE, 2007; Schroeder & Kuh, 2003). As a result, their teachers become role models, mentors, and guides for continuous, life-long learning. Astin (1999) posits that, frequent interaction with faculty is strongly related to satisfaction with college than any other type of involvement, student or institutional characteristic. He underscores:

> Students who interact frequently with faculty members are more likely than other students to express satisfaction with all aspects of their institutional experience, including student friendship, variety of courses, intellectual environment, and even administration of the institution (p. 525).

For student-faculty interactions to generate meaningful gains, time and consistency is of essence. Faculty has to be accessible and responsive to students' needs allowing substantial contact on a regular basis. When this is done, it fosters affirmation, confidence, self-worth,

knowledge acquisition and development of academic skills (Kuh, 1995). Kuh drew this conclusion after doing a qualitative study with 149 students from different student sub-populations that included White, African American, Hispanic, Asian Americans, and international students. In a different study, Kuh (2003) cautioned that the nature of the student - faculty interaction should be balanced in nature and time contact, too much or too little, would have a negative impact and zero gains. The same observation was made by Sax, Bryant and Harper (2005) who cautioned that frequency of interactions did not always result to desired gains. The authors underscored that, "quantity of students' involvement must be understood in the context of the quality that defines such interactions. …frequent encounters do not necessarily translate into beneficial outcomes" (p. 644). On the other hand, Sax et al. noted that effects of the interactions may be dissimilar for different student sub-groups. Although their research examined the differential effects of student-faculty interaction on college outcomes as mediated by gender, results indicating that effects of interaction are different for different students would be a logical conclusion to infer when making the case for the need to understand whether different sub-populations (i.e. international students) gain from these interactions.

After analyzing voluminous literature on how college impacts students, Pascarella & Terenzini (2005) concluded that, student-faculty interaction had positive effects on educational aspirations, persistence, student growth and development, and overall educational attainment even after controlling for other personal and institutional characteristics. They noted that, this process helps in the socialization of students to the normative values and attitudes of the academy and facilitates the bond between the student and the institution but cautioned on generalizing results to all undergraduates.

Lacina (2002) highlighted the effects of international students leaving familiar networks and support system, and the adjustment problems that they struggled with in the new environment. Research indicated that they suffered from feelings of alienation and loneliness. In such cases, even perception that faculty is available and interested in students' well being would have significant positive effects in their college experience. As underscored by Cole (2007), students who are members of sub-populations that perceive discrimination or prejudice are at risk of neglecting interactions and consequently missing out on the mentorship faculty offer; consequently, missing out on the academic and social development benefits of such interactions.

Faculty interactions have the net effect of making students more comfortable in the academic environment (Hu & Kuh, 2002), and may increase the sense of belonging and "fit" with the institutions (Tinto, 1993). For this reason, international students should be encouraged to interact more frequently with faculty. Charles and Stewart (1991) noted that there are differences among cultures in the perception of authority figures like faculty and staff, and some international students may find it hard to interact with ease with their professors and advisors, and hence the need for the encouragement. There is a tendency to seek help and support from family members and other co-nationals than from host nationals like faculty and American classmates (Frey & Roysircar, 2006). Therefore, concern still exists whether international students take advantage of interacting with their faculty. A study done by Zhao et al. (2005) indicated that some international students do actually interact with their faculty especially during their first year. The study however noted that engagement differed by ethnicity with Black students scoring higher than White and Asian students.

Institutional type is another variable considered in student-faculty interaction research. Researchers have concluded that the institutional type and characteristics have an effect to what

extent students interact with faculty. More gains by students were noted in liberal arts institutions than in larger more complex research institutions (Kuh et al., 1997). These researchers noted that:

> The structural arrangements of baccalaureate institutions (i.e., small size, residential character) foster interaction among peers and faculty, which makes it easier for the institutions to communicate expectations for academic performance and establish a normative press consistent with these expectations. Conversely, at larger institutions, cultivating such institution wide norms is much more difficult (p. 446).

Other research discounted institutional type as playing a big role in student-faculty interactions. What matters most, according to Kuh et al. (2005), is how institutions, regardless of type, configure their mission, ethos, policies and practices to help students achieve "deep" learning and consequently achieve intended outcomes. More on institutional type and deep learning is discussed in a separate section of this chapter.

Enriching educational experiences

Enriching educational experiences are those that infuse diverse perspectives, diversity experiences, activities, and dialogues into the academic and non academic curriculum, providing deep learning for students (Kuh et al., 2005). These intellectual learning opportunities inside and outside the classroom make learning more meaningful and useful for students because students are able to incorporate what they learn and reflect on who they are, or what they want to become, on the basis of acquired knowledge through the various experiences (Kezar & Kinzie, 2006; Kuh et al. 2005; NSSE, 2007; Schroeder & Kuh, 2003). NSSE survey questions on this benchmark asks students to respond to questions on whether they have been encouraged to, or have interacted with, students who are of a different race or ethnicity, who have different religious

beliefs, political, economic or social opinions. Students also respond to whether they have participated in extra-curricular activities like internships, study abroad, volunteer work, community service or foreign language course work. In becoming actively involved in community service, internships, study abroad, co-curricular activities, diversity dialogues and capstone courses, students learn to synthesize, integrate, and apply knowledge more meaningfully. In doing this, they ultimately shape who they are and how they relate to their peers and the world around them. In these experiences, students are able to develop more complicated views on personal, academic and other diverse issues (Kuh, 1995) and this positively influences their academic personal and social development (Umbach & Kuh, 2006).

Pascarella and Terenzini (2005) have noted the consistent evidence of research on the positive effect of diversity experiences. There are positive net influences in cognitive and psychosocial outcomes e.g., acquisition of subject matter knowledge, critical thinking, analytical competencies, complexity of thought, self esteem, locus of control, civic engagement, awareness of other cultures, commitment to promoting racial understanding and openness to intellectual challenge and diversity. While engagement in diversity experiences has unique and positive impact on students, Pascarella & Terenzini note that,

> The most salient diversity experiences appear to be informal interactions with racially and culturally diverse peers and involvement in more formal programs such as racial-cultural workshops and coursework focusing on social-cultural diversity and intergroup relations (p. 209).

These intergroup experiences would be very helpful to international students as they seek to integrate into new environments and work through culture shock that engulfs most of them in the first few months after arrival to American universities (Chapdelaine & Alextich, 2004).

Consistent with other research, Zhao and Kuh (2004) note that "interaction with peers from different cultural and disciplinary backgrounds is one way to introduce disequilibrium, thus setting the stage for students to think in different, more complex ways about their experiences" (p. 6). This diversity of thought helps them to have broader perspectives and accommodation of others who may not have the same experiences or are from a different school of thought or race. Astin (1993) notes that peers are a powerful socializing agent and can help shape values, beliefs, and aspirations impacting persistence and degree completion. He underscores the importance of peers by insisting that, "the student peer group is the single most potent source of influence on growth and development during the undergraduate years" (p. 398). This is consistent with Kuh's (1995) conclusion that peers were the "single most important influence in the areas of Humanitarianism, Interpersonal Competence, and Cognitive Complexity, especially for traditional-age students who lived in campus residences" (p.146).

Out-of-class activities are "the other curriculum" (Kuh, 1995, p.1) that provides enriching educational experiences for students. Kuh noted that the curriculum outside the classroom impacted students just as significantly as curriculum inside the classroom. Conclusion from studies with a heterogeneous sample of undergraduates revealed that students with out-of-class engagement had gains in self-awareness, autonomy and self- directedness, confidence and self-worth, altruism, reflective thought, social competence, practical competence, knowledge acquisition, academic skills and application of knowledge. In this study, seniors reported greater gains in these outcomes than in other levels. The fact that seniors reported more gains was corroborated by Terenzini et al. (2003) and Pascarella and Terenzini (2005) who noted that, college impact is cumulative in nature and gains are as a result of varying interrelated experiences sustained over an extended period of time.

Social interaction and support by hosts is part of the enriching educational experiences for international students. Developing meaningful interpersonal relationships with the members of the host society is the key to a successful transition, which in turn, affects academic and personal development which translates into success in college (Al-Sharideh & Goe, 1998; Chapdelaine & Alextich, 2004; Furnham, 1997; Mallinckrodt & Leong; 1992 ; Tomich et al. 2000, 2003; Zhai, 2002;). As Tomich et al. (2003) puts it, "the adaptation process does not occur simply by being on foreign soil. The individual must interact with the host population in order to develop more than a superficial understanding of the culture" (p. 2). It is particularly important for Asian, African and Latin American students whose level of acculturation is less because they perceive more prejudice from their hosts more than their European counterparts (Rahman & Rolluck, 2004; Tomich et al., 2000;). However, for international students, this kind of engagement sometimes tends to be problematic because they do not feel comfortable interacting with and establishing interpersonal relationships with the host culture. Nevertheless, when willing to interact with the host culture, it helps mitigate the stress that they face while negotiating a new culture (Meyer, 2001; Perucci & Hu, 1995; Trice, 2004; Yeh & Inose, 2003). Interacting with the host culture also exposes the students to a culturally diverse and rich experience outside the classroom; this allows for opportunities for the development of cross-cultural friendships which play a crucial role in the adjustment process.

In a study done by Ying (2003) concerning academic achievement and quality of overseas study among Taiwanese students in the U.S., students who formed more relationships with Americans felt less lonely, they facilitated entry and engagement with American culture and this ensured a quality overseas experience and their likelihood of persisting in school. Ying examined academic performance and quality of oversees study for 155 Taiwanese graduate

students at 14 months post arrival. Performance was assessed by GPA and quality of oversees study was measured by assessing how well students were able to interact and form social networks with Americans.

Further research on this issue concluded that international students tended to feel more comfortable relating with co-nationals/co-culturals and working within environments where there are opportunities to establish social relationships with other persons of the same cultural background and /or nationality (Al-Sharideh & Goe, 1998). Al-Sharideh and Goe's study of 226 international students, provided evidence indicating that relationships with those of the same co cultural [ethnic group] provided comfort, security and a means by which an international student could resolve and cope with problems associated with a foreign social environment, thereby promoting positive self-attitude. The co- culturals also serve to buffer students from the effects of problems associated with a lack of assimilation of American culture and an inability to effectively interact with Americans. The researchers, however, did warn that their research findings suggested becoming too extensively integrated into a co-cultural appeared to create problems that negatively affected the self-esteem of international students and the ability to interact with hosts. Chapdelaine and Alextich (2004) were unclear about their findings on whether the size of the ethnic group that the student belonged to affected his or her cross cultural relationships. In their study, they had hypothesized that international students that belonged to large ethnic or co- national groups in the host country would rely mostly on their groups for social interactions, and this would make it less likely for them to learn culture-specific social skills which would lead to higher degrees of difficulties in cross-cultural interactions.

One of the consistent themes about enriching educational experiences was that international students need to engage more in interactive activities with members of the host

society. Many campuses offer opportunities for students to form student groups and organization where students from different ethnic groups of interact. Others offer diversity dialogue forums where the different ethnic groups and students who have divergent perspectives on issues can come together and discuss their views.

Supportive campus environment

The educational environment that students interact with greatly influences their gains in learning and intellectual development (Kezar & Kinzie, 2006; Pascarella & Terenzini, 2005; Pike & Kuh, 2006). Kuh, Schuh, Whitt and Associates (1991) describe the campus environment as all the conditions and influences (inside and outside the classroom) that affect the growth and development of all the individuals that dwell in it. The conditions may be physical: the size and the location of the campus, or they may be social: the interactions between individuals that are guided and shaped by the norms, the culture, the expectations and different student subcultures and faculty groups, as well as organizational and policy issues. Kuh et al. (2005) further summarizes the conditions that characterize a supportive campus environment as follows:

> "(1) An institutional emphasis on providing students the support they need for academic and social success, (2) positive working and social relationships among different groups, (3) help for students in coping with their nonacademic responsibility, and (4) high-quality student relationships with other students, faculty, and the institution's administrative personnel" (p. 241).

Student behavior becomes a product of interactions with these sub-cultures and sub-environments. The results of these interactions could range from being "discouraging, confusing and alienating, or orderly, predictable, coherent and encouraging" (Kuh et al., 1991, p. 99).

Gauging from how they interact with these sub-environments, a student may form a positive or a negative perception of the institution. A positive perception is formed when students feel nurtured and supported for success. This means making available the physical (classrooms, libraries, laboratories, residences halls, etc.) and supportive services (i.e. transitional programs, professional and peer advising etc) and at the same time creating the conditions that "encourage students to take advantage of these resources" (p. 241). A positive perception is also formed when relationships with faculty, staff and other students are devoid of prejudice or discrimination in regards to race, ethnicity, gender or other social categories. In such environments faculty are approachable, accessible, helpful, supportive and encouraging (Hayek & Kuh, 1998; Kuh et al., 2005).

Negative perceptions of the environment are formed when students feel unsupported, discriminated against or are without adequate services. Negative perceptions may also be formed when relationships between students and their faculty or staff are poor. These kinds of perceptions have a negative effect on learning and can inhibit students' knowledge acquisition, social development and persistence (Cabrera, Nora, Terenzini, Pascarella & Hagedorn, 1999; Carini et al., 2006; Kuh et al. 2005; NSSE, 2007; Schroeder & Kuh, 2003).

Minority students, including international students, are more impacted by perceptions of discrimination and racism than their Caucasian counterparts. Literature documents that international students, especially those from the non -mainstream populations of the Middle East, Africa, Asia, and Latin America are the most affected (Lee, 2007; Lee & Rice, 2007; Poyrazli & Grahame, 2007). These negative perceptions have negative effects in cognitive, analytical thinking and quantitative skills (Cabrera et al., 1999).

The fact that students in non-mainstream cultures have more negative perceptions of their college environment may be factual in some cases, but literature revealed that that this is not always the case. Results from a study done by Klomegah (2006) in a small minority serving institution were not definite on the notion that international students generally perceive more prejudice and lack of support than other students. The 94 participants, 51 of whom were international students did not view their campus negatively. Both European and non-European students felt equally supported by the policies and campus programming and there were no differences in variation to alienation among the students. Klomegah's findings indicated that it would be incorrect to conclude all minority groups feel discriminated in their institution. This conclusion raises the importance of campus mission, ethos, structures and policies and the role played by institutions in student engagement.

In a study by Trice and Yoo (2007), there was a similar observation that not all international students felt un-supported. International students in this study reported feeling accepted and supported in the classroom. Nevertheless, there are more studies that qualify the argument that most international students perceive a non-supportive, discriminatory environment where they experience hostile attitudes, cultural intolerance and an unwelcoming atmosphere, a cause for dissatisfaction with their learning (Lee, 2007; Lee & Rice, 2007; Poyrazli & Grahame, 2007). For this reason, Kuh (1995), Kuh and Hu (2001) suggest that institutions should work to remedy such negative perceptions of their institutions by offering opportunities for out-of-class involvement that the affected students can get involved in. This can positively shape students' perceptions of the campus environment "which is very important because it directly contributes to the effort they put forth which consequently affects satisfaction and their gains" (Kuh & Hu, 2001, p. 329). The direct or indirect effect that involvement has on changing students' perception

creates in the student a sense of belonging and satisfaction that in turn fosters a positive impact on students' self-reported gains in learning.

Student engagement: The role of institutions

Student engagement, as mentioned earlier, involves both the student and the institution. The student has to expend some effort and be engaged in educationally purposeful activities, but the institution has to avail opportunities and environments that are conducive for engagement. It is therefore important that this literature reviews student engagement from an institutional perspective. The following section will explore how institutional type, policies and practices influence the extent to which students engage in educationally purposeful activities.

Institutional success is to be judged on how effectively students are being engaged in educationally purposeful activities (Pike & Kuh, 2005b). For student engagement to be effective, institutions must also do their part; making sure that there are policies and practices that support student engagement; and that there are opportunities available for students to engage in. As Astin (1999) notes:

> Administrators and faculty members must recognize that virtually every institutional policy and practice can affect the way students spend their time and the amount of effort they devote to academic pursuits. Moreover, administrative decisions about many nonacademic issues can significantly affect how students spend their time and energy (p.523)

Great universities make students matter and help students get most out of their collegiate experience (Hayek & Kuh, 2002). Although the amount of time and energy the student invests in effective educational practices can determine whether they will succeed or not, institutional policies and practices influence students' levels of engagement (Pike & Kuh, 2005b). Liberal arts

colleges, which tend to be small in size, have been lauded as more engaging (Pascarella, Wolniak, Cruce & Blaich, 2004; Umbach & Kuh, 2006). Research universities, which tend to be large, are normally relegated as passive, too caring about research and not the quality of their undergraduate education, and students have reported negative perceptions of such campus environments (Kuh & Hu, 2001). However, recent research indicates that although students may feel unwelcome in large campuses, and although their perception of the campus environment may be negative, these universities tend to have more opportunities for students to engage in (Pike & Kuh, 2006).

A study of different institutions by Kuh et al. (2005) revealed that using institutional type as a proxy in grading a students' engagement level or institutional quality could be inaccurate. The study involved twenty colleges that had participated in the NSSE survey and scored higher than predicted in student engagement. The authors documented the characteristics of institutions that have effective practices and policies that facilitate student engagement. The study of these colleges was over a span of two years in a project named "DEEP"-Documenting Effective Educational Practices. Schools ranged from small, large, urban, rural, historically black, predominantly white, residential, highly selective and non-selective. The team that did the study used student engagement in effective educational practice as a proxy for institutional quality. The study revealed that these highly scoring schools, hereafter referred to as "DEEP schools," have a relentless improvement-oriented ethos, and so are constantly working to improve the quality of learning and teaching. In DEEP schools, student success is a shared responsibility and administrators, faculty, student and academic affairs personnel all work to together to set direction and to create and maintain student success efforts (Kinzie & Kuh, 2004). DEEP schools, institutional mission and philosophy reflect a culture of unshakable focus on student

learning and an environment that offers enriching learning opportunities for the students. Data about student and institutional performance is constantly collected to measure progress and to guide policy and practice in academic and non academic structures and programs. In summary, the DEEP schools have six distinct features that foster student engagement and persistence, (Kuh et al., 2005; Kuh, 2006):

i. A "living" mission and "lived" educational philosophy

ii. An unshakable focus on student learning

iii. Environment adapted for educational enrichment

iv. Clearly marked pathways to student success

v. An improvement oriented ethos

vi. Shared responsibility for educational quality and student success.

Given the clear pathways of success that DEEP schools offer their students, many international students would find these schools a better choice because they offer welcoming, nurturing, and affirming environments where student success is valued and pursued. This kind of environment where the institution feels responsible for students' success is particularly important for international students who run the risk of feeling alienated as they transition into an American university. Nevertheless, Kuh et al. (2005) caution that, DEEP schools may be the gemstones in effective educational practice, but they are not perfect and a close inspection can reveal flaws of one or more groups of students who may not be as engaged as the institutions would like. This is why institutions need to pay attention to engagement levels of the different sub-groups (i.e. international students), because within-group differences are real and some students may not be gaining fully from their college experience no matter how good the institutional policies and practices are.

Student engagement: Development and desired outcomes

The educational gains that students reap from their undergraduate experience can be measured by specific learning outcomes that students exhibit during or at the end of their college career. Engagement in effective educational practices facilitates the attainment of these outcomes. The following section will explore how students develop and attain some of these intended outcomes by examining academic, personal, and social developmental outcomes associated with student engagement.

When students attend college, it is expected that their growth and development will go beyond the normal human maturation process and that they will develop and attain cognitive, affective, and other complexities and competences. These competencies help them mature and be able to navigate the college environment. In their process of development and acquisition of the necessary competencies, they are able to interact with different aspects of the college environment e.g. faculty, staff, peers, classroom and out-of class intellectual activities that matter in their development (Pascarella & Terenzini, 2005). It is expected that students will be able to respond to the college environments surrounding them with good judgment even when the situations are challenging and in disharmony with ordinary alignment of life issues. This development is also helps students move into higher levels of intellectual and psycho- social development with learner outcomes as evidence of this growth (Zhao & Kuh, 2004).

Although a direct casual relationship is not being inferred between educationally purposeful activities and learner outcomes, the two have been closely linked (Klein et al., 2005). The next section will therefore explore the outcomes in academic, personal, and social development and how international students have fared. There is very little written on the subject of internationals' outcomes and therefore this section also includes studies done within the

traditional college population. Reviewing the outcomes gives a context and an understanding of some of the outcomes cited in this study.

Academic development

A broad general education

The Association of American Colleges and Universities [AACU] (2008), underscores that, in a world that has become diverse, global and knowledge-based, students should be broadly and generally educated in "knowledge, skills, and attitudes that all of us use and live by during most of our lives" so that they can have the ability to "understand the similarities and differences among people and to develop the capacities to bring different people together to solve problems, whether in the workplace, one's community, or internationally" (AACU, 2008, n.p).

Klein et al. (2005) agree that general education is an essential outcome for college education today. The broad and general education allows students to acquire knowledge and integrate it across disciplines. It also enables the student to acquire broad abilities that influence overall performance in college than do knowledge structures and domain specific abilities (Klein et al. 2005). Hersh and Benjamin (2002) emphasize the same, noting that education that students receive must go beyond being just a "credential" or a mere "commodity." Students must "learn how to learn." They must learn to make judgments and be engaged in "constructed learning." They must acquire a broad general education that prepares them to not only to learn new facts or new body of knowledge, but also to gain the ability to examine the facts and make meaning of them, by challenging assumptions and drawing conclusions after careful synthesis and analysis of existing facts. This kind of education, that is facilitated by effective educational practices by faculty, students and the institution, can be termed as 'education for a life- time' and it

> prepares students to live responsible, productive, and creative lives in a dramatically changing world……[it] provides students with opportunities to examine the world's major questions from multiple perspectives, to integrate learning across the curriculum by following the threads in an increasingly complex reality, and to wrestle with the ethical implications of differential power and privilege (AACU, 2008, n.p).

Research specifically focusing on whether international students achieve this desired outcome is rare, although (Zhao & Kuh, 2004) indicated that international students are involved in the processes that facilitate the acquisition of a broad and general education. One of those processes that help students in "learning how to learn" is engagement in learning communities. Students who engage in learning communities exhibit gains in personal and social development, practical competence, and general education. Because of their emphasis in mixed pedagogy and interdisciplinary content, learning communities have been identified as effective in helping students achieve broad education and capabilities that help students perform well in college and derive more satisfaction in their overall collegiate experience. Zhao and Kuh's study examined the relationship between learning communities and student engagement. The sample consisted of 80,479 randomly selected first-year and senior students from 365 four-year colleges and universities who completed the NSSE survey in the spring of 2002. 1146 participants identified themselves as international students. Findings from this study indicated that students who participated in learning communities participated more in educationally purposeful activities such as academic integration, active and collaborative learning, and interaction with faculty members. The authors also concluded that students, who were introduced and engaged in these activities early in their collegiate career, were more likely to continue with them through and beyond college. Although results in this study were not categorized according to student status

(international or otherwise), one could infer that results would also apply to the international students as well because they were part of the sample. This means that outcomes reaped by others for participating in these activities would also apply to them, yet questions about how effectively international student participate in collaborative learning is questionable. In earlier discussions, there was evidence that international students tended to shy away from group related or collaborative projects.

One of the few studies on international students' engagement was done by Zhao et al. (2005). The authors used NSSE 2001 data to compare nearly 3,000 first year and senior international students' engagement with that of more than 67,000 domestic students. According to the findings, first year international students scored higher than their American counterparts in general education gains. This article did not, however, specifically indicate gains in general education for senior international students who were also part of the sample and are the main focus of the current study. The study did not report gains across institutional type for the more than 317 four- year colleges and universities that were involved. It might suffice to infer that research universities (a focus in current study), were represented.

Acquiring job or work related knowledge and skills

The question of whether the education students receive enables them to receive job or work–related knowledge and skills that prepare them for a post-graduation world is still open for debate. Hayek and Kuh (1999) note that employers perceive that most students graduate without the necessary skills that can allow them to adequately fit in the work place or face other post-college challenges. The proponents of the student engagement are confident that if students are exposed to a curriculum that effectively engages them in and outside the classroom, then they will graduate with the necessary skills and will be able to adapt to different job environments

(Kuh, 2003). For international students, academic achievement and graduation from college is considered ultimate success (Westin, 2007). The U.S. still remains a popular destination for international students and studying in the United States is a source of family pride for many international students and their families.

The engagement theory links preparedness for work with engagement in educationally purposeful activities. The curriculum that students are exposed to is supposed to prepare students to acquire skills that will prepare them for the workplace. International students studying in the U.S have been ambivalent about whether the education they receive has enabled them to acquire job or work related knowledge skills. Trice and Yoo (2007) noted that some students expressed concerns about curricular relevancy, lack of an international focus, and had doubts about transferability of their acquired skills to their home environments. This study involved 497 international students from East Asia (China, Korea, and Japan), Southeast Asia (Philippines, Indonesia, and Thailand), South Asia (India, Pakistan), Eastern Europe, Latin America, Australia, New Zealand and Africa. Findings from this study revealed that although the students felt supported in the classrooms, they did not feel that the courses met their needs from an international perspective. Nevertheless, 77% felt they had the skills and preparedness to return home and work after graduation although only 32% planned to return home after completing their degree. 11% felt they were not well prepared to work in their home countries, but were well prepared to work in the U.S and so would plan to stay and take advantage of jobs here instead of their home countries. Although this study is relevant because it deals with international students, it would be helpful to note that Trice and Yoo's sample involved only graduate students and perhaps undergraduates would have a different opinion on the relevancy of their skills preparedness.

A study with undergraduates by Tomkovick, Al-Khatib, Baradwaj & Jones' (1996) somehow confirms Trice and Yoo's (2007) findings, although the latter underscored differences in gender perceptions. The study involved 282 undergraduate students 51% of whom were international representing 50 countries from Europe, Asia, the Middle East, Africa, and North and South America. One of the findings, based on the survey answers from these participants who attended 25 different educational institutions suggested that international students tended to feel they had limited career opportunities in their home countries and this sometimes affected their perception of the institutions service quality and skills received. In this study the female students were particularly noted for their less favorable perception of their preparedness.

What was consistent from the literature was that international students felt they had acquired job relevant skills, but in evaluating the usefulness of those skills, the answer to this question depended on whether the student would be looking for job opportunities in their home countries or in host countries. Being well prepared to take jobs in the host country is a good thing, but as Trice and Yoo (2007) noted, students perceived preparedness to work in the host country as a negative predictor of plans to return home. This means the intended outcome had been achieved, but it was interpreted positively or negatively by the students depending on what their post graduation plans were.

Thinking critically and analytically

One of the prime indicators of academic development during college is a student's ability to think critically and analytically. This is viewed as the ability to apply judgment on "what to do or to believe by focusing one's thought on it" (Daud & Husin, 2004, p.1). There is a continued focus in higher education to produce students who show evidence of cognitive development. Outcomes of effective teaching and learning are being measured by how well

students can think, communicate, and solve problems effectively (AACU, 2008; El Hassan, 2008). As mentioned in a different section of this study, learning new information is part of educating students, but how well they are able to make meaning, analyze, synthesis and make judgments using what they have learned is a critical measure of whether they have raised their bar in personal social and academic development.

Although I could not find any research that directly addressed international student's cognitive outcomes, there was a lot written about their lack of critical and analytical skills especially in the early years at foreign institutions. Discussing how international students respond to and engage in academic environments, researchers were in agreement that international students struggled when engaged in academic and intellectual activities that called for application of critical and analytical skills (Campbell & Li, 2007; Robertson et al., 2000; Tatar, 2005; Westin, 2007). Nevertheless, other researchers (Laird, 2005; Zhao & Kuh, 2004) noted that, international students were likely to develop- and indeed did develop- critical thinking skills once they were exposed to the effective teaching methods, approaches, and activities that facilitated acquisition of the desired skills. They did better when intervention skills like learning communities were introduced (Zhao & Kuh, 2004) or when exposed to diversity experiences (Laird, 2005). These experiences help in the development of academic self-confidence and disposition toward critical thinking.

In an effort to prove that critical thinking as a skill can also be taught (Daud & Husin, 2004) did a study using a sample of 40 undergraduate students in a Malaysian University who were taking classes in English as a second language. They examined the extent to which a computer concordance developed and enhanced the ability of students to analyze literally texts critically. When the Cornell Critical Thinking Test was used to test the experimental and the

control group, the experimental group did better than the control group confirming the hypothesis that although students may lack skills initially, change in pedagogical methods is helpful. However, Klein et al. (2005) cautioned that, while as measuring critical thinking as an outcome is useful, institutions should not be fixated in measuring just the direct measure outcomes but should also focus on indirect indicators or "proxies for learning" such as those advocated by NSSE. On measuring outcome by just one measure, institutions may miss out on the broader abilities and the inputs that students bring along and integrate in their learning process.

One important observation from literature is that, while there is ambivalence on the level of international students' analytical and critical thinking skills in U.S. colleges and universities, and while international students are depicted as starting off weak on these skills, independent educational research bodies have confirmed students from some foreign countries excel in STEM (science, technology, engineering and math) disciplines. *The National Center for Public Policy and Higher Education [NCPPHE],* in its *2006 Measuring Up report* card, confirmed the U.S. students lag behind other nations in educational attainment especially in the sciences (NCPPHE, 2006). This was consistent with findings by the 2006 *Commission on the Future of Higher Education* (commonly referred to as the Spelling Commission) (U.S Department of Education, 2006). These reports underscore the fact that, while there are many issues that may inhibit academic excellence for international students, exposure to a range of effective educational practices and opportunities in class and outside class can help facilitate acquisition of desired learning outcomes.

Personal and social development

Understanding one's abilities, limitations, interests, and personality and standards of behavior are indicators of student growth in personal and social development (Kuh, 1999; Pascarella & Terenzini, 2005). In attaining this development, students are able to develop interpersonal and intrapersonal competencies that raise their self-awareness, autonomy, confidence, social competence, and sense of purpose that help them live a meaningful life, affecting their self worth, wellbeing, and the quality of interactions with others (AACU, 2008). They are able to work effectively with others or independently on their own and have a deeper and more insightful understanding of themselves.

In a longitudinal study that examined the quality of undergraduate experience for students across four decades- the 1960's to the 1990's- Kuh (1999) collected data from a cross-section of institutional types-doctoral, comprehensive, and liberal arts colleges using the College Student Experiences Questionnaire (CSEQ). Conclusions from this study indicated that for all cohorts in the four decades, college seemed to help students make progress towards self-sufficiency and civic responsibility, improve intellectual and communications skills, and develop more personal and social skills, such as understanding self and others become more polished. Terenzini et al. (2003) corroborated Kuh's conclusions that there was a link between these experiences and various dimensions of personal social development. Nevertheless, Terenzini cautions that this body of literature is dominated by "studies of white, traditional-age, full-time students attending four-year, residential institutions" and studies that focus on groups outside this context are not common.

However, some studies have used heterogeneous samples to assess the link between engagement in educationally purposeful activities and personal and social student outcomes. Carini et al. (2006) used a sample of 1058 students across 14 four year colleges and universities.

5% of this sample identified themselves as international students while others were: 73% White, 9% Black, 7% Asian, 3% Latina, and 7% Multiracial. The study's purpose was to test any linkages between student engagement and student learning outcomes by measuring results from mixed measures; standardized tests such as the RAND and GRE test scores, GPA and self reported outcomes in academic, personal, and social development from *The College Student Report,* NSSE's survey instrument. Results indicated a small but statistically significant positive correlation between student engagement and scores on the standardized tests before and after controlling for student characteristics. Student engagement was also positively correlated, albeit modestly with GPA and self reported gains in general education, personal and social development, practical competence, and satisfaction. These results corroborated other researchers' (Kuh, 1995; Kuh et al., 2006) observations on the link between engagement and positive educational outcomes. One of the weak points in connecting this research to the current study is the fact that, despite the researchers' indication of ethnicity of the participants as whites, black, Asian, Latino, multiracial and 5% international students, results were not specified by these categories and therefore results attributed to international students only was not identifiable. Another observation worth noting is the fact that, the significance of the relationship between engagement and outcomes were rather modest and the researchers observed there could be other undiscovered factors that may explain what generates learning outcomes; an observation that may warrant further research to help unearth what other factors contribute or add value to a students' academic, personal and social development.

In that same context of trying to predict what affects students' academic personal and social development, El-Hassan (2008) did a study whose purpose was to indentify indicators of students' development in college. This study was contextualized in research that focuses on

traditional American college students although his study was focused on a sample that was entirely from a university in Beirut, Lebanon. El-Hassan used the College Outcome Survey (COS) instrument to identify predictors of students' self-reported growth in intellectual, personal and social development. He acknowledged in his study the importance of the theoretical frameworks that deal with understanding the impact of college on students irrespective of geographical region. Results indicated that personal and social development for students cannot be predicted by one experience or encounter, but rather it is a "holistic" process, the result of a "web-like character of factors," ranging from academic programs inside the classroom to out -of -class experiences; a fact that the engagement theory emphasizes. Although I included this study because it involved students from a different culture, it is important to note that the university is based on American ideals of a liberal arts education. Nevertheless, there is enough consensus in literature that personal and social growth among college students is affected by what they do in college (academic and non-academic) as well as what the college does for them (institutional organization and ethos) plus students' individual characteristics, i.e. demographics or countries of origin. These influences may affect the way student react or are changed by different environments.

Recent studies that have shown international students as having problematic progress in the area of establishing interpersonal relationships especially with individuals from the host country (Alazzi & Chiodo, 2006; Constantine, et al., 2005; Lee & Rice, 2007; Poyrazli, et al., 2002; Poyrazli & Grahame, 2007; Poyrazli & Kavanaugh, 2006). Something else noted in these studies was the fact that International students from non-European countries especially from Africa, Asia, Middle East tended to struggle more in establishing interpersonal relationships and moving through the vectors of personal and social development. The explanation was because

students from these geographical regions perceived more discrimination, exhibited more stress, and were more distant culturally and linguistically than students from more mainstream or European cultures (Yeh & Inose, 2003).

Adjustment to life in foreign universities and culture can inhibit students' psychosocial development and interfere with their ability to engage in educationally purposeful activities due to reduced self esteem and efficacy (Poyrazli et al., 2002). This observation is critical for student professionals to note because it would shed light on what kind of educationally effective activities or training international students would need to help them move through the vectors of personal and social adjustment, be able to work effectively with others, and to understand themselves. These outcomes are aspects that are highly correlated to academic and social success. Very few positive conclusions have been drawn about international students and personal development in U.S universities, but in some cases, it has been noted that after familiarizing themselves with the new cultural norms, their academic and psychosocial experience changes for the better (Charles & Stewart, 1991), and in some cases, international students work to change the situation by purposely trying to look for bonding opportunities with host peers in during group discussions. However, the latter was uncommon and happened mostly in cases where contribution in class seminars was graded.

In reviewing literature about international students' outcomes in academic, personal and social development, there seemed to be a consensus that most international students, if not all, struggle to adjust to new ways of doing things in and outside of the classroom. Literature confirmed that socially, Asian students struggled more, although they were the most hardworking academically, and students from Africa, Middle East and Latin America perceived more discrimination. All these adjustment issues can be tied to the inability to effectively engage

in the campus because of the perception of a non-supportive environment which in turn can influence the outcomes required of students. Literature also confirmed that adjustment and positive outcomes are still possible where institutions provide ways and means for students to grow academically, personally, and socially by offering supportive environments and effective educational practices. Due to the difference in culture and educational systems, it is clear that working with international students can pose challenges to faculty, staff, and student affairs professionals, yet understanding how students develop as human beings and how to contextualize their experiences can yield the right educational outcomes.

CHAPTER THREE

Research methods

The purpose of this study was to examine how the five engagement benchmarks (level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environment) predict various perceived or self-reported academic, personal, and social outcomes for fourth year (sometimes referred to as seniors in this study) undergraduate international students in Research Universities. This study was guided by the following research questions:

1. To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their acquisition of a broad general education?
2. To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their acquisition of job or work- related knowledge and skills?
3. To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their ability to think critically and analytically?
4. To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their ability to work effectively with others?
5. To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their ability to learn effectively on their own?

6. To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their ability to understand themselves?

The methods applied for this research were quantitative. Given the large data set, quantitative methods allow for more detailed analysis of the variables than qualitative methods. SPSS statistical software package was used to analyze these data. The next section outlines the data sources, sample, instrumentation, variables, and methods for data analysis.

Data sources

The data sources for this study were responses from the 2005 NSSE survey (Appendix A). Conceived in 1998, NSSE offers the most comprehensive data source on student engagement, with a focus on student and institutional behaviors that are considered important for a good collegiate experience and key desired student outcomes associated with these behaviors. This survey "rests on systematic studies of student learning and development linked empirically to student experiences and behaviors compiled over 40 years" (NSSE, 2007 p. 3). The survey collects information from first year and fourth year (seniors) students from participating institutions across the country and seeks to assess the extent to which students are engaged in educationally effective practices (the latter is also referred in literature as effective educational activities). The survey also focuses on what students gain from their college experience. Students' overall college experience helps gauge collegiate and institutional quality (Kuh, 2004). Students respond to survey questions on the NSSE instrument, *The College Student Report*.

Survey administration

The Indiana University Center for Postsecondary Research [IUCPR] in cooperation with the Indiana University Center for Survey Research administers the survey. Institutions of higher learning across the country are invited to participate. Institutions that accept the invitation are requested to send enrollment data files to survey administrators. The administrators then select a random sample comprising a half of the total sample from each university. With the help of administrators in each participating university, customized letters requesting students' participation in the survey are sent directly to the students together with the survey. Surveys are both in hard copy or electronic format depending on which method the participating school prefers. All survey responses are sent directly to the NSSE survey administrators at IUCPR.

Participants are asked to reflect and respond about what they are putting into and getting out of their college experience in class and out of class. They are also asked to reflect on behaviors that are consistent with learning and personal development outcomes e.g. amount of time and quality of effort in and out-of-class activities, their ability to work with others in academic projects, participation in educationally enriching programs, interaction with faculty, staff, and peers, and their perception of the campus environment These behaviors are grouped into five clusters (benchmarks) previously discussed in the literature review section: i) level of academic challenge, ii) active and collaborative learning, iii) student-faculty interaction, iv) enriching educational experiences and, v) supportive campus environment (see items under each benchmark in Appendix B).

To construct these benchmarks, all items in a benchmark are converted to a 0-100 point scale. For example, items with four responses are assigned scores ranging from 0, 33.33, 66.67, or 100 to match least to highest level of activity for an item. To create the student –level

benchmark score, the average of the individual rescaled benchmark items is then calculated, assuming the respondent answered three- fifths of the items in any particular benchmark (NSSE, 2009). Responses from participants who do not answer at least three-fifths of the items on any particular benchmark do not receive a score. For the level of academic challenge, participants have to respond to at least 7 of 11 items; active and collaborative learning, at least 4 of 7 items; student-faculty interaction at least 4 of 6 items; enriching educational experiences at least 8 of 12 items, and supportive campus environment at least 4 of 6 items. Student scores in these benchmarks vary and it should therefore be noted that when means for benchmarks are calculated to indicate engagement patterns for a certain cohort or multi-institutional group, the mean represents the average student in the said sample, and an examination of individual scores can reveal a range and variance of high and low scores (NSSE, 2005). A detailed report of the conceptual framework and psychometrics properties of the survey instrument is detailed by Kuh (2004) and other notes on survey administration on useful information for researchers and institutions is posted on the NSSE website (http//nsse.iub.edu).

Sample

In 2005, more than 530 different four year colleges and universities participated in the NSSE survey (NSSE, 2005). Surveys were both in web and paper versions. Participating schools can opt for either. In 2005, there was an overall 40% institutional response rate. A 42% institutional response rate was recorded for the web based surveys and 35% was recorded for the paper surveys. Those in research universities made up 19% (*n*=93) of the overall sample. This study utilized a targeted sample of the 2005 participants (*n*=1648) who fulfilled three conditions:

i) Responded in the affirmative to the following survey question: *"are you an international student or foreign national,"?*

ii) Enrollment in a Research University as per Carnegie Classification (2004) and,

iii) A senior in fourth year of study.

Although NSSE surveys both first year and senior undergraduate students, this study focused only on students who were in fourth year of study (seniors). This is because research has indicated that first year and senior students experience college differently (Pascarella & Terenzini, 2005). Additionally, seniors may have more to report because of the accumulation of experiences that the first years may be lacking. Dealing with fourth year students allows the researcher to deal with a cohort who has lived in a foreign country longer, and therefore have had opportunities to be engaged.

Before the request for these data from the Indiana University Center for Postsecondary Research [IUCPR], a proposal for this study was presented and approved by faculty dissertation committee members. An application for this study was also submitted and approved by the Institutional Review Board for Research Using Human Subjects at the University of Kansas, Lawrence (see Appendix C). After the request was placed with IUCPR, a formal contractual agreement between the agency, the researcher's school, the researcher and her advisor was signed. After a payment was made to IUCPR, data for the targeted population were released for use in this study. Therefore, as per the contractual agreement, these NSSE data were used with permission from The Indiana University Center for Postsecondary Research (see Appendix D).

Instrumentation

Validity and reliability

Kuh (2004) notes that, "validity is arguably the most important property of an assessment tool" (p.5). Survey items have to be clearly worded and well defined with high content validity.

The survey questions in the *College Student Report* have acceptable validity (Kuh, 2001). The survey was designed by experts and has been extensively tested to minimize non-response bias and mode effects (NSSE, 2005). Similar types of questions have been used in other highly regarded surveys like the Cooperative Institutional Research Program (CIRP) at UCLA and the College Student Experiences Questionnaire (CSEQ) Research Program at Indiana University (Kuh, 2004). The survey relies on self-reported data. It is known that self reports can sometimes be flawed when students inflate or are untruthful about certain aspects of their experiences (Kuh, 2004), but there is ample research to support the use of self reports (Carini et al., 2006; Hu & Kuh 2002; Kuh 2001, 2004; Pike, 2003; Pike & Kuh, 2005) and conditions under which they can be valid. The conditions, which the *College Student Report* has satisfied (Kuh, 2004, p. 4), are:

1. the information requested is known to the respondents;
2. the questions are phrased clearly and unambiguously;
3. the questions refer to recent activities;
4. the respondents think the questions merit a serious and thoughtful response and,
5. answering the questions does not threaten, embarrass, or violate the privacy of the respondent or encourage the respondent to respond in socially desirable ways.

Due to the large scale nature of the NSSE survey, and due to the fact that student experience is not a static variable, test-retest measure, that is a common way of measuring reliability, is hard to administer. Nevertheless, the questions in the survey are edited before each administration to make sure they meet acceptable reliability standards (Kuh, 2004; Kuh, Hayek, Carini, Quimet, Gonyea & Kennedy, 2001). Students are asked to report about experiences in the recent past and record responses in a simple rating scale, thereby minimizing errors and optimizing accuracy (Kuh, et al. 2001). In reporting, the responses are grouped in five

benchmarks/clusters: Level of academic challenge, active and collaborative learning, student – faculty interaction, enriching educational experiences and, supportive campus environment. The responses also include demographic characteristics, outcomes in academic, personal, and social development, and overall experience of the students' college experience. The responses are clustered into benchmarks because student engagement is a phenomenon that can only be measured by a combination of effective educational practices (Kuh, 2001).

As mentioned earlier, to capture the phenomenon of student engagement, NSSE has grouped items into five clusters whose internal consistency, reliability and validity has been confirmed as very high (Kuh, et al., 2001; Kuh, 2004). The psychometrics of how the scales are created by NSSE has been detailed in writing (Kuh, 2004) and on the NSSE website. Nevertheless, to confirm the internal consistency of this scale for the current sample, a reliability test was conducted for the items in each benchmark. Results indicated satisfactory Cronbach's alpha reliability indexes that ranged from .75 to .68. Reliability coefficients measuring .7 and above are acceptable (MacMillan, 2000). Rounded to whole numbers, all alphas for the five benchmarks hit the .7 mark indicating the items for each benchmark were within acceptable levels. Therefore it can be concluded that the sample for this study fell well within the acceptable scale results of the larger NSSE 2005 survey because in 2005, the internal reliability consistency as noted by the Cronbach's Alpha in each benchmark was as follows: the level of academic challenge.75, active and collaborative leaning measured .67, student-faculty interaction .75, enriching educational experiences .66, and supportive campus environment .77 (NSSE, 2005).

Table 1 presents comparison between alpha reliability indexes for 2005 total sample and for the current sample of undergraduate international students who are a part of the 2005 total sample.

Table 1
Cronbach's Alpha Reliability Indexes for NSSE 2005 Survey and Current Study Sample

NSSE benchmarks	2005 NSSE survey total sample Cronbach's alpha	Current sample Cronbach's alpha
Level of Academic Challenge	.75	.70
Active and Collaborative Learning	.67	.68
Student-Faculty Interaction	.75	.75
Enriching Educational Experiences	.66	.69
Supportive Campus Environment	.77	.75

Variables

Independent (Engagement benchmarks)

This study examined the effect of engagement practices on perceived student outcomes, seeking to understand to what extent engagement measures predict self-reported student outcomes. The engagement benchmarks listed below served as the independent variables:

i. Level of academic challenge

ii. Active and collaborative learning

iii. Student- faculty interaction

iv. Enriching educational experiences

v. Supportive campus environment

Items under each benchmark are listed in Appendix B.

Dependent (Self-reported/perceived outcomes)

The dependent variables used in this study were a selection of self reported or perceived academic, personal, and social outcomes that have been identified as evidence of learning (Kuh, 2001). These are:

i. Acquiring a broad general education

ii. Acquiring job or work-related knowledge and skills

iii. Thinking critically and analytically

iv. Working effectively with others

v. Learning effectively on your own

vi. Understanding yourself

These dependent variables were selected from part of the survey that focused on growth, gains, and students' collegiate educational experience. Participants were asked to respond to the following question: "*To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas*_____ (dependent variables i-vi)?" Participants responded using the following Likert scale: 1=very much, 2=quite a bit, 3=some and 4=very little. Response values were reversed during data entry whereby 4=very much, 3=quite a bit, 2= some and 1=very little. (See Appendix A for a complete list of survey times).

Control variables

There are many factors that contribute to student learning, and outcomes may be affected by various inputs or environmental factors. Such factors include gender, race and students' grades. In studies such as the current one, controlling for all confounding variables may be a difficult task. As Carini et al. (2006) noted in a study that examined the link between student engagement and learning, a complete fool-proof measure of pre-college, demographic, and environmental characteristics may be difficult. Nevertheless, researchers are encouraged to control for variables that could affect results of the targeted sample. For this study, self reported grades, gender, ethnicity, and institutional type were controlled for during the regression analysis. The grades were marked by students reporting their average grade score at their institution for their current year, and ethnicity was representative of racial composition. For

international students, the latter may be problematic because students come from a variety of different countries whose racial identification may not automatically fit into a box. However, since research has cited that engagement patterns can differ by race (Harper et al., 2004; Zhao et al., 2005) and it was necessary to include racial profiles in the descriptive analyses to allow readers some basic insight on that characteristic of the sample since engagement patterns can differ according to students' race. International students indentified their race or ethnicity using the same categories as the American students. This could be cited as a limitation. The survey could be modified to allow foreign students to identify with countries and not necessarily race given the racial diversity around the globe.

Data analysis

Data preparation

This study utilized a data slice from the 2005 NSSE survey (see Appendix A). The data received were only for undergraduate senior or fourth year international students from research universities. The data consisted of 1648 cases and responses to each of the survey questions. Using SPSS software version 17.0, these data were examined and cases with missing responses for the outcome variables were deleted. The latter was necessary because this study was using individual outcome responses as separate dependent variables. Deleting missing data without severely reducing the cases available is an acceptable way of data preparation used by many researchers (Creswell, 2005). The researcher determined that deleting the 24 cases that had incomplete responses would still leave 1624 complete set of cases; these would be a large enough sample to conduct analysis.

The second step entailed examining the independent variables. The independent variables used in this research were the five benchmarks of effective educational practices mentioned

earlier in this chapter. Several items are clustered to form each benchmark (see Appendix B). Items are clustered into groups since engagement is not a single behavior but a combination of factors. In cases where "one item may not capture the complexity of the phenomenon of interest" (DeVillis, 2003, pp. 9-10), it is important to group multiple items that share certain characteristics together to form a scale that can then be used to better measure the concept of interest. This helps the researcher to better capture the phenomenon of interest and understand the behavior to be measured. In doing that, the underlying phenomenon is holistically understood as a combination of factors, rather than a single behavior. As mentioned before, NSSE cites high reliability for their data and for each of the five scales (NSSE, 2005). Nevertheless, reliability measures of the scales for this sample were calculated and contrasted to the 2005 sample (see Table 1).

Methods of analysis

The following procedures were used: descriptive statistics, bivariate correlations, and multiple linear regression analysis.

Descriptive Statistics

To get a general overview and understanding of the data, descriptive statistics were computed for the demographic characteristics revealing frequencies for gender (coded 1=male and 2=female). Data on participants' ethnic/racial identification was as follows: (coded 1=American Indian or other Native American, 2= Asian American or Pacific Islander, 3=Black or African American, 4=White (non-Hispanic), 5=Mexican or Mexican American, 6=Puerto Rican, 7=Other Hispanic or Latino, 8=Multiracial, 9=Otherrace, 10=I prefer not to respond). To minimize the wide range of groups, I recorded the categories into five major racial groups as

follows: 1= Otherrace, 2=Asian, 3=Black, 4=White and 5=Hispanic. Table 2 presents the original and the recorded racial categories.

Table 2

Original Racial and Recorded Categories

Original Racial Category	Original Code	Recorded
American Indian or other Native American	1	1
Asian American or Pacific Islander	2	2
Black or African American	3	3
White (non-Hispanic)	4	4
Mexican or Mexican American	5	5
Puerto Rican	6	5
Other Hispanic or Latino	7	5
Multiracial	8	1
Other	9	1
I prefer not to respond	10	1

Descriptive statistics were also computed for institutional profiles (coded 0= public and 1=private). According to the *NSSE Annual Report* (NSSE, 2005) institutional data was provided by the Integrated Postsecondary Education Data System (IPEDS).

Means (*M*), standard deviations (*SD*), frequencies (Freq) and percentages (%) for the independent variables (five benchmarks of engagement and the dependent variables (six self-reported or perceived student outcomes) were also computed This procedure was necessary in order reveal the general tendencies and spread of the scores.

Correlations

As noted by MacMillan (2000), correlations are used in research to measure the relationship of two variables. This relationship is indicated by use of a mathematical number called correlation coefficient (*r*). A correlation between variables ranges between -1 to +1. A perfect positive correlation has a value of 1.00 while a perfect negative correlation has a value of -1.00. These numbers indicate the strength of a positive or a negative relationship between the variables. The higher the number either way indicates a stronger relationship between variables.

For this study, bivariate correlations were computed in order to show the association between each of the five independent variables and the six dependent variables (correlations between the engagement benchmarks and the self- reported outcomes). Independent variables included: level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environment. The dependent variables were: acquiring a broad general education, acquiring job or work-related knowledge and skills, thinking critically and analytically, working effectively with others, learning effectively on your own, and understanding yourself. The Pearson Correlation Coefficient (*r*) between the dependent and independent variables is reported in Table 12 in chapter four. Correlations were also computed to show the relationship between grades and engagement variables.

Regression analysis

Using multiple linear regressions, the five engagement benchmark scales for effective educational practices (independent variables) were regressed against each of the six engagement outcomes (dependent variables). The reason behind conducting the regression analysis was to determine the effect of the engagement benchmarks (the predictor variables) on the self-

reported/perceived student outcomes (the criterion variables), while controlling for student demographic characteristics, (gender, ethnicity/ race), students ability (grades) and institutional profile (public/ private).

Multiple regression analysis was used to help explain the variances in the dependent variables that were attributable to the independent variables, and the unique contribution offered by the different predictor variables. Each model consisted of nine variables: gender, ethnicity/race, grades, institutional profile, and the five predictor variables. Detailed results for the regression analysis: R^2 values, b and Beta coefficients and associated levels of significance (*p* values) are reported in the results section. The R^2 describes the overall proportion of the variance in the dependent variable that can be accounted for by the predictor variables. Beta weights (B) allow for comparison of the strength for each predictor variable and associated levels of significance (*p*) allows the research to make conclusions on whether predictions can be attributed to something better than chance alone.

The following section outlines how variables were entered in the regression models for each research question. Variables entered in blocks one and two for each of the regression models remained consistent for all six regression models, but the order in which the independent variables were entered in the third block varied depending on the strength of the correlation (*r*) between the dependent variable and each of the independent variables. The independent variable with the stronger correlation with the dependent variable was entered first. This process was applied for all six research questions.

Model of analysis for research question 1

To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their acquisition of a broad general education?

Multiple linear regression was computed to determine how engagement in educationally purposeful activities predicted an international undergraduate student's acquisition of a broad and general education.

Dependent variable: Acquiring a broad and general education

Block I: Gender, ethnicity/ race and grades

Before racial groups were entered into the regression models, they were effect coded and the racial category White, was used as the reference group.

Block II: Institutional type: All data was from Doctoral Research/Extensive and Doctoral Research Intensive, Carnegie Classification of Higher Education Institutions (as of Fall, 2004) both public and private. These data were reported to NSSE by the Integrated Postsecondary Education Data System [IPEDS].

Block III: Engagement benchmarks

Supportive Campus Environment
Level of Academic Challenge
Active and Collaborative Learning
Enriching Educational Experiences
Student-Faculty Interaction

Variations on how variables were entered occurred in block three whereby variables were entered depending on the strength of their correlation with the dependent variables. Independent variables with stronger correlations were entered first.

Model of analysis for research question 2

To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their acquisition of job or work- related knowledge and skills?

Multiple linear regression was computed to determine the extent to which engagement contributed to an international undergraduate student's acquisition of job or work related knowledge and skills. Variables were entered as follows:

Dependent variable: Acquiring job or work –related knowledge and skills

Block I: Gender, ethnicity/race, grades

Block II: Institutional type

Block III: Engagement benchmarks

Supportive Campus Environment
Student-Faculty Interaction
Active and Collaborative Learning
Level of Academic Challenge
Enriching Educational Experiences

Model of analysis for research question 3

To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their ability to think critically and analytically?

Multiple linear regression was computed to determine the extent to which engagement contributed to an international undergraduate student's development of critical and analytical thinking skills. Variables were entered as follows:

Dependent Variable: Thinking critically and analytically

Block I: Gender, ethnicity/race, grades

Block II: Institutional type

Block III: Engagement benchmarks

Supportive Campus Environment
Level of Academic Challenge
Student-Faculty Interaction
Active and Collaborative Learning
Enriching Educational Experiences

Model of analysis for research question 4

To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their ability to work effectively with others?

Multiple linear regression was computed to determine the extent to which engagement contributed to an international undergraduate student's ability to work effectively with others. Variables were entered as follows:

Dependent Variable: Working effectively with others

Block I: Gender, ethnicity/race, grades

Block II: Institutional type

Block III: Engagement benchmarks

Supportive Campus Environment
Active and Collaborative Learning
Level of Academic Challenge
Student-Faculty Interaction
Enriching Educational Experiences

Model of analysis for research question 5

To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their ability to learn effectively on their own?

Multiple linear regression was computed to determine the extent which engagement contributed to an international undergraduate student's ability to learn effectively on their own. Variables were entered as follows:

Dependent Variable: Learning effectively on your own

Block I: Gender, ethnicity/race, grades

Block II: Institutional type

Block III: Engagement benchmarks

Supportive Campus Environment
Level of Academic Challenge
Student-Faculty Interaction
Active and Collaborative Learning
Enriching Educational Experiences

Model of analysis for research question 6

To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their ability to understand themselves?

Multiple linear regression was computed to determine the extent to which engagement contributed to an international undergraduate student's ability to understand themselves. Variables were entered as follows:

Dependent Variable: Understanding yourself

Block I: Gender, ethnicity/race, grades

Block II: Institutional type

Block III: Engagement benchmarks

Supportive Campus Environment
Level of Academic Challenge
Active and Collaborative Learning
Student-Faculty Interaction
Enriching Educational Experiences

Summary

This chapter has outlined the methodology used in this study. A description of the dependent and independent variables was outlined and analytical procedures that were used in analyzing the data. The chapter also included how variables were entered for multiple regression analysis. Results of these procedures are presented in chapter four.

CHAPTER FOUR

Results

The purpose of this study was to examine how engagement benchmarks that encompass educationally purposeful activities predict various perceived or self-reported academic, personal, and social outcomes for senior international students at Research Universities. The independent variables were the five engagement benchmarks while the dependent variables were selected self-reported/perceived outcomes that have been linked to gains in learning

Data were analyzed using SPSS software for the following: engagement scales, descriptive statistics for demographic characteristics and independent and dependent variables; bivariate correlations and multiple linear regressions. Results for these analyses are outlined in this chapter. The first section outlines the engagement scales (independent variables), descriptive statistics for both independent and dependent variables; the second section outlines the bivariate correlations between the major and other selected variables and the third section outlines the six regression analysis procedures.

Section one

Descriptive statistics

Demographics

The sample for this study consisted of 1624 senior (fourth year) international undergraduate students from research universities (Carnegie Classification as of Fall 2004). Of these 81.7% (*n*=1327) were from public research universities and 18.3 % (*n*=297) were from private research universities. Further descriptive analysis revealed that 68% (*n*=1116) were from Doctoral Extensive and 31% (*n*=508) were from Doctoral Intensive institutions.

Descriptive statistics were also computed for gender, revealing that 47.4 % (*n*=769) of the participants were male and 52.6% (*n*=855) were female.

Demographic characteristics also included the ethnic/racial status of the students. The NSSE survey asks students to identify their ethnic /racial status. Descriptive statistics revealed that White (non-Hispanic) students comprised 25.6 % of the sample, Asian, 24.6%, Black, 9.1%, Hispanic, 12%, and Other categories totaled 28.7%. A visual presentation of these statistics is outlined in Table 3.

Table 3

Frequencies and Percentages for Ethnicity/Race and Gender

Ethnicity/ Race	Frequency	Percentage %
Other	466	28.7
White	415	25.6
Asian	399	24.6
Hispanic	195	12
Black	147	9.1
Gender	**Frequency**	**Percentage %**
Male	769	47.4%
Female	855	52.6%

N=1624

Independent variables (Engagement benchmarks)

To further understand the sample, means (*M*) and standard deviations (*SD*) were computed for the independent variables. The level of academic challenge (*M*=57.54, *SD*=14.15) and supportive campus environment (*M*=57.12, *SD*=18.97) had higher means while the student-

faculty interaction benchmark and the enriching educational experiences had lower means, (*M*=40.65, *SD*=21.19) and (*M*=39.78, *SD*= 19.26) respectively.

Table 4 outlines the means (*M*) and standard deviations (*SD*) for engagement benchmarks that served as independent variables. Means are presented for both public and private institutions plus the 2005 NSSE grand means for all seniors to allow for comparison.

Table 4

Means and Standard Deviations for Engagement Benchmarks

	Combined (Pub. /Priv.)		Public		Private		2005 NSSE
	M	SD	M	SD	M	SD	M
Level of Academic Challenge	57.544	14.152	57.339	14.060	58.463	14.546	56.5
Active Collaborative Learning	48.676	17.614	48.194	17.730	50.826	16.948	51.4
Student-Faculty Interaction	40.652	21.194	40.301	20.844	42.222	22.662	44.1
Enriching Educational Experiences	39.775	19.260	39.217	19.206	42.266	19.335	42.1
Supportive Campus Environment	57.119	18.965	56.864	18.861	58.249	19.414	57.5

Comparison of means by institutional type

To find out whether there were any significant differences between the means for public and private institutions, an independent- samples *t* test was computed. Results revealed that differences in the means were statistically different for public and private institutions in the active and collaborative learning benchmark (*t*= -2.238, *p*=.02), but were not statistically significant for the level of academic challenge, enriching educational experiences student-faculty interaction, and supportive campus environment. Students in private universities engaged more in active and collaborative learning activities (*M*= 50.826, *SD*=16.948) than their counterparts in

public universities (*M*= 48.194, *SD*=17.730). *T*-test results for all benchmarks are shown in Table 5.

Table 5

T- test Comparison of Means for Public and Private Institutions in Engagement Benchmarks

Benchmark	*T*-test values *t*(1622)=	Significance level (*p)*
Level of Academic Challenge	-1.238	.216
Active and Collaborative Learning	**-2.238**	**.02***
Student-faculty interaction	-1.413	.16
Enriching Educational Experience	-2.470	.158
Supportive Campus Environment	-1.136	.256

***** The mean difference is significant at the .05 level

Comparison of means by gender

An independent-samples *t* -test was also computed to compare means by gender. This allowed for conclusions as to whether the means of the engagement benchmarks differed for males and females. Results indicated that there were statistically significant differences in means for males and females in the active and collaborative learning, and the enriching educational experiences benchmarks. This means that on average, international students who were males engaged more in active and collaborative learning (*M*=49.79, *SD*=18.37) than did the females (*M*=47.69, *SD*=16.86). On the other hand, females, on average, engaged more in enriching educational experiences (*M*=40.87, *SD*=19.22) than did males. There were no statistically significant differences between means for males and females in the other benchmarks. Table 6 presents means and standard deviations for males and females in each benchmark, the corresponding *t*-test comparison value between means, and the significance levels per gender in all five benchmarks.

Table 6

T-test Comparisons of Means according to Gender for Engagement Benchmarks

	Means and standard deviations			
Engagement Benchmarks	Male	Female	*T*-test value *t*(1622)=	Significance level (*p*)
Level of Academic Challenge	M=57.30	M=57.76	-.656	.512
	SD=14.60	SD=13.74		
Active and Collaborative Learning	**M=49.79***	**M=47.69***	2.404	**.02***
	SD=18.37	SD=16.86		
Student-Faculty Interaction	M=41.26	M=40.11	1.098	.27
	SD=21.88	SD=20.56		
Enriching Educational Experiences	**M=38.54***	**M=40.87***	-2.439	**.02***
	SD=19.25	SD=19.22		
Supportive Campus Environment	M=57.39	M=56.87	.552	.58
	SD=19.46	SD=18.52		
	n=765	*n*=859		

***** The mean difference is significant at the .05 level

Comparison of means by ethnicity/race for engagement benchmarks

More data description for engagement benchmarks included testing whether there were any differences between means based on racial groupings. In order to find out, a one way analysis of variance (ANOVA) was conducted. This statistical procedure allows for comparisons when there are two or more groups to be compared For this ANOVA, the engagement benchmarks were the dependent variables and the fixed factors were the five racial groups coded as follows: 1=Otherrace, 2= Asian, 3=Black, 4=White and 5=Hispanic. The test of between subjects effects revealed that for the level of academic challenge, the overall model was significant $F(4,1617)=4.137$, $p= .002$ indicating that there were statistically significant differences in the means according to racial differences for the level of academic challenge

engagement benchmark. Differences in means according to racial groupings were also statistically significant for the academic and collaborative learning $F(4,1617)=4.693$, $p=.001$; enriching educational experiences, $F(4,1617)=3.817$, $p=.004$, and supportive campus environment $F(4,1617)=6.538$, $p=<.01$. Differences in means according to racial groups were not statistically significant for the student-faculty interaction benchmark, $F(1617)=4,182$, $p=.115$. Means and standard deviations for all racial groups in all five benchmarks are presented in Table 7.

Table 7

Means and Standard Deviations for Ethnicity/Racial Groupings for Engagement Benchmarks

Engagement Benchmarks		Ethnicity/Race					
		Other	Asian	Black	White	Hispanic	Overall *p* value
Level of Academic Challenge	M	56.43	58.64	60.58	56.29	58.59	**.002***
	SD	14.39	13.83	15.84	13.97	12.60	
Active and Collaborative Learning	M	47.25	47.65	52.90	48.45	51.68	**.001***
	SD	17.49	17.91	18.86	17.03	16.87	
Student-Faculty Interaction	M	38.89	40.81	42.89	40.61	43.08	.115
	SD	21.87	21.24	21.20	20.56	20.65	
Enriching Educational Experiences	M	38.29	37.99	41.24	41.11	43.20	**.004***
	SD	18.85	19.60	18.54	18.67	20.69	
Supportive Campus Environment	M	54.82	58.57	61.64	55.31	60.00	**.000***
	SD	19.74	18.21	22.10	17.37	18.25	
n		466	399	147	415	195	

***** The mean difference is significant at the .05 level

Frequencies and percentages

Further descriptive analysis was run examining how participants fared in individual activities that made up the engagement scales. These statistics identified activities with highest

and lowest frequency of engagement among undergraduate international senior students. The following section has outlined selected results for frequencies in individual items within the five benchmarks. Complete results are appended (see Appendix F, G, H, I, J) to give the reader a wider understanding of the engagement activities that contribute to outcomes.

Benchmark 1: Level of academic challenge

Descriptive results revealed 84.9%, of the senior undergraduate international students (*n*=1379), spent 6 or more hours per week on academic work related activities (homework, class preparation etc.). Results indicated that in spite of students spending a lot of hours on academic work, few of them (17%, *n*= 280) had written at least 5 papers or reports of 20 pages or more. A majority (82.7%, *n*=1343) had written 4 or fewer substantive papers of reports. A complete list of frequencies and percentages within the level of academic challenge benchmark is appended (Appendix, E).

Benchmark 2: Active and collaborative learning

Over half the sample of senior international students (59.9%, *n*=972), worked collaboratively with other students outside of class to prepare for class assignments and almost a similar number (58.9 %, *n*=956) reported that they often discussed readings with other students, family members, and co-workers outside of class. However, 72.4% of the total sample (*n*=1175) indicated they did not often do any tutoring or teaching of other students. An even larger percentage (85.2%, *n*=1383) indicated they were not actively involved in service learning or other community-based projects. A complete list of activities, frequencies, and percentages in the ACL Benchmark is appended (Appendix F).

Benchmark 3: Student-faculty interaction

Descriptive statistics in the student–faculty interaction benchmark revealed that international students did not often interact or work with faculty in activities other than those that involved discussion on academic work. Half of all participants (50.1 %, *n*=813) discussed grades and assignments with instructors while even a greater number (61.2%, *n*=994), indicated they often received prompt feedback from faculty on their academic performance. However, in this benchmark, the higher percentages were linked to less interaction with faculty especially in activities that were outside the classroom. A great number of students (80%, *n*=1299) indicated they often did not work with faculty on activities other than coursework, and they did not often discuss academic work outside of class (71.5% *n*=1161) or collaborate with faculty in research projects that were outside of course or program requirements (75.5%, *n*=1226). A complete list of activities in this benchmark plus frequencies and percentages are appended (Appendix G).

Benchmark 4: Enriching educational experiences

Examining enriching educational experiences that international students had done or not done, descriptive statistics revealed that most international students(79.2%, *n*=1286) had not done an independent study or a self-designed major and only 20% (*n*=1285) had participated in a learning community. Experiences in diversity dialogues with other students from a different race were common (58.6%, *n*=951) and so were communications via electronic mediums. Study abroad in another country other than where they were already enrolled was not an activity that international students commonly engaged in. Results revealed that 72% of the sample had not studied abroad and were not planning to. Only 27.6% indicated they had studied abroad in another country or were planning to. For international students, who actually are studying abroad, this would mean they interpreted the question to mean studying in another country apart

from the U.S or the student's country of origin. A complete list of activities in this benchmark, frequencies and percentages is appended (Appendix H).

Benchmark 5: Supportive campus environment

In examining the descriptive statistics, international students perceived their institutional environment as supportive. About three quarters (75.6%, *n*=1246) indicated they had a good relationship with other students and more than half indicated administrative personnel and offices were helpful (57%, *n*=925). Although in a previous question students had reported they interacted with faculty mostly in academic settings, students still considered faculty as supportive and available (76.6%, *n*=1244). There were 4% more students in private universities than in public universities that considered faculty as more available and helpful. Although students indicated there was substantial support offered to them in order to succeed academically, over 70% (*n*=1154) felt least supported in non-academic and social issues e.g. work and family. They also felt they received little support to help them do well socially. Other results showing to what extent students felt supported in their institutions are appended (Appendix I).

In comparing benchmark results with overall results in 2005, International students had a higher mean in level of academic challenge than the average student in 2005 but lower means in all other benchmarks.

Dependent variables (Self-reported outcomes)

Overall means and standard deviations

Responses for the dependent variables were based on one of the survey questions that required students to answer the following question: *'To what extent has your experience at this*

institution contributed to your knowledge, skills, and personal development in the following areas?': acquiring a broad and general education, acquiring job or work-related skills, thinking critically and analytically, working effectively with others, learning effectively on your own, and understanding yourself. Participants were given four choices on a four point Likert scale: very much=4, quite a bit=3, some=2, or very little=1 (See Appendix A, item 11). The order of responses on these items was reversed when data were entered to start from least to highest. The following section highlights descriptive statistics for the outcomes by reporting frequencies and percentages, means, standard deviations, and comparison of means by institutional type, gender and racial group.

Descriptive statistics revealed details of responses to the survey questions that were used in this study as dependent variables. Asking undergraduate students to report on what contribution their undergraduate experience has contributed to different outcomes, the NSSE survey is able to bring to light to what extent students perceive they have gained from their different college experiences. For this study, the data revealed that international students believed they had made substantial gains in learning how to think critically and analytically (85.2%, *n*=1384) and they believed they had made gains in acquisition of a broad and general education (85%, *n*=1358). Frequencies and percentages for the dependent variables in a four point Likert scale format are appended (Appendix, J). Based on the results, means ranged from the highest score (*M*=3.29, *SD*=.77) for dependent variable 'thinking critically and analytically' to the lowest (*M*=2.92, *SD*=.93) for 'understanding yourself.' The mean for critical thinking was higher than that reported for the overall NSSE 2005 grand mean (*M*=3.37, *SD*=.74)

Table 8 outlines frequencies and percentages that indicate the high and low end of gains as perceived by the students, plus corresponding means and standard deviations.

Table 8

Frequencies, Percentages, Means (M) and Standard Deviations (SD) for Self-reported Outcomes in scale of 1-4

Dependent Variable	Perceived amount of gain	Freq	Percent	M	SD
Acquiring a broad and general education **NSSE 2005**	Little	266	16.4	3.26	.80
	Substantial	1358	83.6	**3.33**	**.77**
Acquiring job or work Related knowledge and skills **NSSE 2005**	Little	486	29.9	2.96	.92
	Substantial	1138	70.1	**3.04**	**.92**
Thinking Critically And analytically **NSSE 2005**	Little	240	14.8	3.29	.77
	Substantial	1384	85.2	**3.37**	**.74**
Working effectively With others **NSSE 2005**	Little	357	22.0	3.11	.87
	Substantial	1267	78.0	**3.18**	**.83**
Learning effectively on your own **NSSE 2005**	Little	395	23.8	3.06	.87
	Substantial	1229	76.2	**3.07**	**.86**
Understanding Yourself **NSSE 2005**	Little	489	30.1	2.92	.93
	Substantial	1135	69.9	**2.88**	**.99**

N=1624

Comparison of outcome means by institutional type

To find out whether there were any significant differences between means for students' outcomes in public and private institutions, an independent- samples *t* test was computed. Results revealed that differences in the means were not statistically significant for all six outcomes, indicating that international students in both public and private universities on reported gains that were on average, statistically the same. T-test results for self-reported outcomes are shown in Table 9.

Table 9

T- test Comparison of Means for Public and Private Institutions in Self –reported Outcomes

	IPEDS04: Private/Public Designation	M	SD	T- test mean comparison	Significance level (*p*)
Acquiring a broad general education	Public Private	3.25 3.32	.802 .777	-1.435	.151
Acquiring job or work-related knowledge and skills	Public Private	2.94 3.04	.924 .892	-1.709	.088
Thinking critically and analytically	Public Private	3.28 3.33	.768 .762	-1.100	.272
Working effectively with others	Public Private	3.10 3.16	.863 .851	-1.043	.297
Learning effectively on your own	Public Private	3.06 3.04	.862 .918	.341	.733
Understanding yourself	Public Private	2.92 2.95	.923 .964	-.511	.609

All Participants N=1624, Public *n*= 1327, Private *n*= 297

Comparison of means by gender

Independent-samples *t*- test was also computed to compare means of the outcomes by gender. This would help in making conclusions as to whether the means of the self-reported outcomes differed for males and female students. Results indicated that there were no statistically significant differences in means for male and female self-reported gains in five of the six outcomes (see Table 10). The only outcome where mean differences by gender were statistically significant was the acquisition of a broad and general education. For this outcome, the *t*- test was significant, $t(1622) = -2.547$, $p = .011$). On average, females acquired more broad and general education ($M = 3.31$, $SD = .772$) than males ($M = 3.21$, $SD = 3.21$). Table 11 presents

means and standard deviations for males and females in each self-reported outcome, the corresponding *t*-test comparison value between means, and the corresponding significance level.

Table 10

T-test Comparisons of Means According to Gender for Self-reported Outcomes

Self-reported outcomes	Gender	Means	Standard Deviation	T-test value *t*(1622)=	Significance level (*p*)
Acquiring a broad and general education	Male Female	3.21 3.31	.823 .772	-2.547	**.011***
Acquiring job or work-related knowledge and skills	Male Female	2.93 2.98	.929 .909	-.973	.331
Thinking critically and analytically	Male Female	3.27 3.09	.776 .759	-.879	.379
Working effectively with others	Male Female	3.09 3.13	.868 .855	-.902	.367
Learning effectively on your own	Male Female	3.02 3.08	.872 .872	-.1.417	.157
Understanding yourself	Male Female	2.91 2.93	.948 .914	-.625	.532
n	Male Female	765 859			

***** The mean difference is significant at the .05 level

Comparison of means by ethnicity/race for perceived (self-reported) outcomes

Further description for self-reported outcomes included examining whether there were any differences between means based on racial groupings. In order to find out, a one way analysis of variance (ANOVA) was conducted. This statistical procedure allows for comparisons when there are two or more groups to be compared. For this ANOVA, the self-reported outcomes were the dependent variables and the fixed factors were the five racial groups: 1=Otherrace, 2= Asian, 3=Black, 4=White and 5=Hispanic. Results for the one way ANOVA revealed that there were statistically significant differences in the means according to racial difference for the following self-reported outcomes: acquisition of a broad and general

education, F=(4, 1617)=4.442, p=.001; acquisition of job or work-related knowledge and skills, F=(4, 1617)=3.568, p=.007; thinking critically and analytically F=(4, 1617)=5.112, p=<.01, and understanding yourself, F=(4, 1617)= 2.554, p=.037. Differences in average gains, for racial groups in two outcomes, 'working effectively with others,' and 'learning effectively on your own' were statistically insignificant. Means, standard deviations, and level of significance in mean difference between racial groups for the self-reported outcomes are presented in Table 11

Table 11

Means and Standard Deviations for Ethnicity/racial Groupings for Perceived Outcomes

Engagement Benchmarks		Ethnicity/Race					
		Otherrace	Asian	Black	White	Hispanic	Overall *p* value
Acquiring a broad and general education	**M**	**3.17**	**3.21**	**3.39**	**3.30**	**3.39**	**.001***
	SD	.850	.766	.780	.746	.820	
Acquiring job or work related knowledge and skills	**M**	**2.89**	**2.91**	**3.18**	**2.95**	**3.06**	**.007***
	SD	.953	.876	.866	.914	.943	
Thinking critically and analytically	**M**	**3.19**	**2.26**	**3.38**	**3.31**	**3.45**	**.001***
	SD	.810	.743	.788	.741	.719	
Working effectively with others	**M**	3.08	3.14	3.20	3.08	3.18	.348
	SD	.883	.825	.911	.845	.876	
Learning effectively on your own	**M**	3.02	3.11	3.20	3.00	3.05	.08
	SD	.857	.848	.896	.883	.910	
Understanding yourself	**M**	**2.91**	**2.98**	**3.06**	**2.82**	**2.94**	**.037***
	SD	.907	.898	.974	.940	.982	

***** The mean difference is significant at the .05 level

Section two

Correlations

Bivariate correlations were computed to show the association between the five engagement benchmarks (the independent variables) and the six perceived outcomes (the dependent variables). Results indicated statistically significant correlations between the dependent and independent variables ($p < .01$). Supportive campus environment had a stronger association with the dependent variables with only one exception-learning to think critically and academically. The latter was more correlated with the level of academic challenge.

Table 12 presents results for the bi-variate correlations between the dependent and independent variables for all study variables. A complete table of results is appended (see Appendix K).

Table 12

Bivariate Correlations between Engagement Benchmarks and Perceived (self-reported) Student Outcomes

Engagement benchmarks (Independent variables)	Outcomes (Dependent variables)					
	Acquiring a broad and general education	Acquiring job and work related skills	Thinking critically and analytically	Working effectively with others	Learning to work effectively on your own	Understanding yourself
Level of academic challenge	.331**	.273**	.439**	.353**	.343**	.308**
Active and collaborative learning	.255**	.277**	.284**	.402**	.241**	.281**
Student-faculty interaction	.241**	.293**	.290**	.316**	.252**	.278**
Enriching educational experiences	.249**	.238**	.237**	.277**	.214**	.223**
Supportive campus environment	.357**	.447**	.416**	.474**	.372**	.423**

Pearson Correlations [Sig 2-tailed] **= $p < .01$ N=1624

The *p* value indicates the probability of obtaining similar results as the ones observed (Creswell, 2005).

Correlations between the engagement benchmarks and grades indicated significant relationships. The NSSE survey asks participants to indicate their grades by answering the following questions, "*What have most of your grades been up to now at this institution*"? Participants can indicate their grades using the following scale: A, A-, B, B- , C+, C, and C-. Table 13 summarizes the strength of relationship between the grades and the self-reported outcomes and corresponding significance values. Results indicate significant correlations between all of the dependent variables and student reported grades. Although the strength of the relationships differs, the *p* values indicate that the relationships between gained outcomes and grades are meaningful enough to be considered important.

Table 13

Correlations between Grades and Self-reported Outcomes

Self-reported outcomes	Acquiring a broad general education	Acquiring job or work-related knowledge and skills	Thinking critically and analytically	Learning effectively on your own	Working effectively with others	Understanding yourself
Grades	.064*	.074**	.093**	.082**	.059*	.075**
Sig. (*p*)	.010	.003	.000	.001	.018	.003

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Section three

Regression analysis

To find out how engagement predicted perceived outcomes, multiple linear regression analysis was conducted. Each of the six dependent variables were regressed, each separately, against the engagement benchmarks while controlling for demographic (gender and ethnicity), ability (grades) and institutional profile public/private (Carnegie classification as of Fall 2004)

variables. For each regression equation, variables were entered in three blocks. The demographics and grades were entered in block one, institutional profile block two, and the engagement variables in block three. The engagement variables were entered in order of their corresponding strength to the dependent variables. Engagement benchmarks with greater Pearson correlation (*r*) coefficient were entered first.

The following section presents each research question and the regression analysis results. Model summaries and coefficients are presented.

Regression for research question 1

To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their acquisition of a broad general education?

Multiple linear regression analysis was conducted to determine how engagement predicted acquisition of a broad and general education for senior undergraduate international students. The regression equation with the combined engagement benchmarks as predictors was significant R=.443, R^2= .196, F (12, 1588) =32.284, p<.01. Based on these results it can be concluded that engagement was a significant predictor for acquisition of a broad and general education. According to the results, combined engagement benchmarks accounted for 20% of the variance in acquisition of a broad and general education.

In order to determine to what extent each independent variable (level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environment) predicted the variability in the dependent variable (in this case acquisition of a broad and general education) the regression coefficients b and Beta were reported. Normally the b (Unstandardized) coefficient help explain the unique

contribution that each independent variable has in the changing of the dependent variable (Creswell, 2005); that is "amount the dependent variable increases when the independent variable associated with the b increases by one unit" (Garson, 2009, n.p). The B (Standardized Beta coefficient) measure the effect size (the strength of the effect) of each independent variable on the dependent variable. The independent variable with the largest standardized Beta (independent of the sign) has the strongest effect. These results should be interpreted cautiously due to some reported multicollinearity among the independent variables.

According to the results, the unique contributions by supportive campus environment (b= .011, *p*=. <01), the level of academic challenge b=.012, *p*<.01), and enriching educational experiences (b= .004, *p*=.001), were statistically significant. Contributions by active and collaborative learning (b=.001, *p*=.334) and student –faculty interaction (b=-.002, *p*=.214) were not statistically significant. Gender and race also indicated significant contribution. In an independent *t*-test and one way ANOVA analysis conducted for gender and racial groupings respectively, difference in means for self-reported gains in acquisition for male and females were statistically significant *t*(1622)=-2.547, *p*=.011. Females on average, recorded more gains (*M*= 3.31, *SD*=.772) in acquisition of a broad and general education than the males (*M*=3.21, *SD*=.823). It also suffices to note that, a one way ANOVA (see descriptive statistics) revealed that there were differences in average gains depending on race.

Table 14a below presents the final model (final block) indicating unique contributions (b) and the weight (B) strength of individual predictors. Results for research question one also revealed that there were significant changes in the values of R^2 after the engagement benchmarks were entered in the regression model (See Table 15b). The net change for R^2 after entering the engagement benchmarks was .17, allowing the researcher to conclude that the engagement

benchmarks accounted for 17% of the variability in the acquisition of a broad and general education.

Table 14 a

Coefficients for Final Model (3)- Regression Analysis for Research Question 1

	Unstandardized Coefficients	Standardized Coefficients		Collinearity Statistics	
Variables	b	Beta	Sig.	Tolerance	VIF
(Constant)	1.625		.000		
Grades	.006	.012	.610	.900	1.111
Gender	.096	.060	.009	.959	1.043
Otherrace	-.055	-.051	.094	.545	1.834
Black	.035	.025	.493	.388	2.575
Hispanic	.061	.046	.173	.444	2.253
Asian	-.079	-.070	.023	.533	1.877
Institutional profile	.029	.014	.531	.985	1.015
Supportive campus environment	.011	.257	.000	.761	1.314
Level of academic challenge	.012	.211	.000	.697	1.435
Active and collaborative learning	.001	.030	.334	.537	1.861
Enriching educational experiences	.004	.092	.001	.633	1.580
Student-faculty interaction	-.002	-.040	.214	.491	2.035

Dependent variable: Acquiring a broad general education

Table 14 b

Model Summary Showing Changes in R^2

Model	R	R^2	Adjusted R^2	R^2 Change
1	.159[a]	.025	.022	.025
2	.162[b]	.026	.022	.001
3	.443[c]	.196	.190	.170

A complete table of the model summary for research question one is appended (Appendix L).

Regression for research question 2

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their acquisition of job or work- related knowledge and skills?

Multiple linear regression analysis was conducted to determine how engagement predicted the acquisition of job or work-related knowledge and skills while controlling for demographic (gender and ethnicity), ability (grades), and institutional (Carnegie classification: public/private) variables. Results revealed that engagement as a concept was a predictor of the acquisition of job and work related knowledge and skills (R=.476, R^2=.227, *F* (12, 1588) =38.827, *p*<.01).

Engagement benchmarks which in this case were predictor variables were examined for individual contributions towards the net effect in the dependent variable. This examination revealed that only two benchmarks had a statistically significant unique contribution on the acquisition of job or work related skills: supportive campus environment (b=.018, *p*=<.01), and the level of academic challenge, b=.006, *p*=001. The other three predictor variables, student – faculty interaction (b=.001, *p*=.325), active and collaborative learning (b=.003, *p*=.1), and enriching educational experiences (b=.002, *p*=.133) had no statistically significant contribution on students' acquisition of job or work related skills. Further, the results indicated that being of Otherrace, Asian or White, had a significant contribution to the acquisition of job or work-related knowledge and skills; being Black or Hispanic did not make any difference (see Table 16). Table 16a below presents results indicating the b coefficient and levels of significance in the final block of the regression analysis. The model summary in Table 15 b indicates changes in the values of R^2 that clearly shows that the value changes significantly in model three when the

engagement benchmarks are added into the regression equation. Engagement accounted for nearly 23% of the variability in acquisition of knowledge and work-related knowledge and skills.

Table 15 a

Coefficients for Final Model (3)- Regression Analysis for Research Question 2

	Unstandardized Coefficients	Standardized Coefficients		Collinearity Statistics	
Variables	b	Beta	Sig.	Tolerance	VIF
(Constant)	1.194		.000		
Grades	.015	.026	.255	.900	1.111
Gender	.058	.032	.161	.959	1.043
Otherrace	-.030	-.024	.415	.545	1.834
Black	.112	.069	.053	.388	2.575
Hispanic	.011	.007	.829	.444	2.253
Asian	-.088	-.068	.024	.533	1.877
Institutional profile	.053	.022	.315	.985	1.015
Supportive campus environment	.018	.362	.000	.761	1.314
Student-faculty interaction	.001	.031	.325	.491	2.035
Active and collaborative learning	.003	.049	.100	.537	1.861
Level of academic challenge	.006	.087	.001	.697	1.435
Enriching educational experiences	.002	.042	.133	.633	1.580

Dependent variable: Acquiring job or work –related knowledge and skills

Table 15 b

Model Summary Showing Changes in R^2

Model	R	R^2	Adjusted R^2	R^2 Change
1	.163	.027	.023	.027
2	.168	.028	.024	.002
3	.476	.227	.221	.199

A complete table of the model summary for research question two is appended (Appendix M).

Regression for research question 3

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to think critically and analytically?

Multiple linear regression analysis was conducted to determine how engagement predicted students' ability to think critically and analytically. Results revealed that engagement was a significant predictor of students' ability to think critically and analytically (R=.528, R^2= .279, F (12, 1588) =51.178, p<.01). The R^2 value indicated a contribution of 28% by the engagement variables to the variability in the thinking critically and analytically perceived outcome. Examination as to which and how much each engagement benchmark contributed to the significance revealed that supportive campus environment was a positive contributor (b=.012, p=.<01), level of academic challenge was also a positive contributor (b=.018, p=<.01), but student-faculty interaction (b=.000, p=.571, active and collaborative learning (b=.000, p=.885) and enriching educational experiences (b=.001, p=.252) did not have a statistically significant contribution to international students' ability to think critically and analytically. No other variables (demographic, grades or institutional type) had statistically significant contributions to international students' acquisition of the ability to think critically and analytically. Table 16a presents the b coefficients and p values for the statistical regression procedures, and Table 16b presents the model summaries.

Table 16 a

Coefficients for Final Model (3)- Regression Analysis for Research Question 3

	Unstandardized Coefficients	Standardized Coefficients		Collinearity Statistics	
Variables	b	Beta	Sig.	Tolerance	VIF
(Constant)	1.449		.000		
Grades	.015	.032	.155	.900	1.111
Gender	.017	.011	.605	.959	1.043
Otherrace	-.058	-.055	.055	.545	1.834
Black	-.023	-.017	.621	.388	2.575
Hispanic	.101	.079	.014	.444	2.253
Asian	-.071	-.066	.025	.533	1.877
Institutional profile	.009	.004	.839	.985	1.015
Supportive campus environment	.012	.290	.000	.761	1.314
Level of academic challenge	.018	.326	.000	.697	1.435
Student-faculty interaction	.000	-.017	.571	.491	2.035
Active and collaborative learning	.000	.004	.885	.537	1.861
Enriching educational experiences	.001	.031	.252	.633	1.580

Dependent Variable: Thinking critically and analytically

Table 16 b

Model Summary Showing Changes in R^2

Model	R	R^2	Adjusted R^2	R^2 Change
1	.173	.030	.026	.030
2	.174	.030	.026	.000
3	.528	.279	.273	.249

A complete model summary for research question three is appended (Appendix N).

Regression for research question 4

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to work effectively with others?

The multiple linear regression analysis for this question revealed that, just like in the previous three equations, combined engagement benchmarks were significant predictors in students' ability to work effectively with others(R=.551, R^2=.304, Adjusted R^2=.299, *F* (12, 1588) =57.835, *p*=<.01). Engagement as a phenomenon accounted for 30% of the variability in the dependent variable (R^2 =.304). Examination as to which and how much each engagement predictor variable contributed to the significance revealed that supportive campus environment b=.016 *p*=.<01), active and collaborative learning (b=.011, *p*<.01) and level of academic challenge (b=.008, *p*=<.01), had statistically significant contributions while contributions by student-faculty interaction (b=-.002 p= .101) and enriching educational experiences (b=.002, p= .146) were not statistically significant in international students' ability to work effectively with others. Students' grades and gender mattered in international student's ability to work with others as indicated by the b and *p* values for these values. Being male or female had a significant contribution (b=-.087, p=.018) while the grade a student had reported (A, A- , B+, B ,C+ ,C or C- or lower) had an effect in international students gains on their ability to work effectively with others. Table 17a presents the coefficient weights in model three for the regression analysis and Table 17 b presents the model summaries.

Table 17 a

Coefficients for Final Model- Regression Analysis for Research Question 4

	Unstandardized Coefficients	Standardized Coefficients		Collinearity Statistics	
Variables	b	Beta	Sig.	Tolerance	VIF
(Constant)	1.231		.000		
Grades	-.035	-.066	.003	.900	1.111
Gender	.087	.050	.018	.959	1.043
Otherrace	.033	.028	.320	.545	1.834
Black	-.054	-.036	.289	.388	2.575
Hispanic	-.009	-.006	.841	.444	2.253
Asian	.015	.012	.669	.533	1.877
Institutional Profile	.004	.002	.927	.985	1.015
Supportive campus environment	.016	.362	.000	.761	1.314
Active and collaborative learning	.011	.233	.000	.537	1.861
Level of academic challenge	.008	.136	.000	.697	1.435
Student-faculty interaction	-.002	-.049	.101	.491	2.035
Enriching educational experiences	.002	.038	.146	.633	1.580

Dependent variable: Ability to work effectively with others

Table 17 b

Model Summary Showing Changes in R^2

Model	R	R^2	Adjusted R^2	R^2 Change
1	.087[a]	.008	.004	.008
2	.091[b]	.008	.004	.001
3	.551[c]	.304	.299	.296

A complete model summary for research question four is appended (Appendix O).

Regression for research question 5

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to learn effectively on their own?

With demographic, ability, and institutional variables controlled, results from the overall Multiple regression model revealed that as a combined concept, engagement was a significant predictor of students' ability to learn effectively on their own (R=.440, R^2=.194, *F* (12, 1588) =31.810, *p*=<.001). This means that almost 20% of the variance in the dependent variable was explained by engagement benchmarks as a unit. Examination of how much each engagement predictor variable contributed to the significance revealed that supportive campus environment and the level of academic challenge contributed the same variance (b=.013 *p*=<.001) and the three other predictors' contributions were none to marginal. Student-faculty interaction contributed nothing to the variance (b=.000, *p*=.797), active and collaborative learning's contribution was minimal (b=.001, *p*=.433), and enriching educational experiences did not contribute much either (b=.002, *p*=.078). Table 18 and Table 18b presents the coefficient statistics and results for the model summary respectively.

Table 18a

Coefficients for Final Model- Regression Analysis for Research Question 5

	Unstandardized Coefficients	Standardized Coefficients		Collinearity Statistics	
Variables	b	Beta	Sig.	Tolerance	VIF
(Constant)	1.299		.000		
Grades	.009	.017	.479	.900	1.111
Gender	.060	.034	.137	.959	1.043
Otherrace	.022	.018	.545	.545	1.834
Black	.036	.023	.516	.388	2.575
Hispanic	-.070	-.048	.156	.444	2.253
Asian	.033	.027	.390	.533	1.877
Institutional profile	-.068	-.030	.181	.985	1.015
Supportive campus Environment	.013	.275	.000	.761	1.314
Level of academic challenge	.013	.213	.000	.697	1.435
Student-faculty Interaction	.000	-.008	.797	.491	2.035
Active and collaborative learning	.001	.024	.433	.537	1.861
Enriching educational experiences	.002	.050	.078	.633	1.580

Dependent variable: Ability to learn effectively on their own

Table 18 b

Model Summary Showing Changes in R^2

Model	R	R^2	Adjusted R^2	R^2 Change
1	.131	.017	.013	.017
2	.132[b]	.017	.013	.000
3	.440[c]	.194	.188	.176

A complete model summary for research question five is appended (Appendix P).

Regression for research question 6

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to understand themselves?

The multiple linear regression results revealed that engagement was a significant predictor of students' ability to ability to understand themselves (R=.465, R^2=.216, *F* (12, 1588)=36.513, *p*<.001). Examination of how much each engagement predictor variable contributed to the significance revealed that a supportive campus environment (b=.016, *p*<.001), level of academic challenge (b=.009, *p*<.001,) and active and collaborative learning (b=.004, *p*=.005) had modest, significant effects. Student-faculty interaction and enriching educational experiences had no significant contribution.

Table 19a presents the coefficient statistics and Table 19b outlines the complete model summary.

Table 19 a

Coefficients for Final Model- Regression Analysis for Research Question 6

	Unstandardized Coefficients	Standardized Coefficients		Collinearity Statistics	
Variables	b	Beta	Sig.	Tolerance	VIF
(Constant)	1.135		.000		
Grades	.001	.002	.948	.900	1.111
Gender	.040	.021	.347	.959	1.043
Otherrace	.050	.040	.185	.545	1.834
Black	.028	.017	.634	.388	2.575
Hispanic	-.049	-.032	.342	.444	2.253
Asian	.032	.025	.420	.533	1.877
Institutional profile	-.024	-.010	.650	.985	1.015
Supportive campus environment	.016	.332	.000	.761	1.314
Level of academic challenge	.009	.136	.000	.697	1.435
Active and collaborative learning	.004	.084	.005	.537	1.861
Student-faculty interaction	6.329E-5	.001	.964	.491	2.035
Enriching educational experiences	.002	.033	.241	.633	1.580

Dependent variable: Ability to understand yourself

Table 19b

Model Summary Showing Changes in R^2

Model	R	R^2	Adjusted R^2	R^2 Change
1	.129[a]	.017	.013	.017
2	.129[b]	.017	.012	.000
3	.465[c]	.216	.210	.200

A complete model summary for question six is appended (Appendix Q).

Addressing Multicollinearity

In regression analysis there is need to address intercorrelation of the variables. Collinearity diagnostics in this study indicated some of the independent variables were correlated. Multicollinearity is identified by examining the tolerance levels. Tolerance levels that are .4 or less may indicate multicollinearity. Another measure is the variable inflation factor (VIF). A VIF of greater than 4.0 indicates multicollinearity. Researchers suggest different methods of dealing with this issue. The most common is to delete variables that indicate high intercorrelation (Garson, 2009). In this study none of the scales were deleted although there were indications of multicollinearity between the engagement benchmarks. Since the purpose this study was to focus on the five benchmarks and the theoretical framework was grounded on these five benchmarks, deleting any of them to satisfy statistical parameters would have interfered with the model of the study. The research focused on engagement as a concept, a phenomena, where the benchmarks should be viewed as complimentary but not separate. In cases where deleting some variables will interfere with the study model, researchers suggest keeping the model intact and reporting the results as they are. Garson (2009) notes that, high multicollinearity may inflate standard errors and make assessment of the relative importance of the independents unreliable. Nevertheless he notes " if sheer prediction is the research purpose (as opposed to causal analysis), it may be noted that high multicollinearity of the independents

does not affect the efficiency of the regression estimates" (p.1). This research mainly examines the relationship of engagement to the self- reported outcomes and is not a cause-effect study.

Future studies can test other models and probably examine what items overlap consequently causing the multicollinearity. The multicollinearity problem observed in this research especially for the first question raises a question about using the five benchmarks as a unit. Other researchers have questioned the construct validity of the benchmarks (LaNasa, Cabrera, Trangsrud, 2007), while others like Pike (2006) have created scalelets which highlights items that can be tested independently. The diagnostic data and the VIF results are reported in chapter four (see Table 14, 15, 16, 17, 18 & 19).

Summary

This chapter outlined the statistical analyses used in this study. Results from the descriptive statistics indicated there were statistically significant correlations between all engagement variables and all dependent variables. When means were examined, the level of academic challenge and supportive campus environment had higher means indicating international students on average were more engaged in these two benchmarks relative to the other three (active and collaborative learning, student-faculty interaction, and enriching educational experiences).

Statistical comparison of means indicated no significant differences in how students from public and private universities scored in the level of academic challenge, student-faculty interaction, supportive campus environment and enriching educational experiences. There were, however, differences in how they scored in the active and collaborative learning benchmarks. Statistical *t*-test mean comparisons indicated students in public universities scored less than students in public universities. Comparison of means according to gender indicted males

engaged more in active and collaborative learning than did females, while females engaged more in enriching educational experiences than did males. Race differences seemed to matter in how students engaged expect for the student –faculty interaction benchmark. Interaction with faculty did not seem to matter according to students' racial group.

In examining the effect of engagement on outcomes by the use of multiple linear regression, engagement as a concept had significant effect on outcomes. The overall model was significant for all six regression analyses. However, looking closely at individual benchmark contributions, some benchmarks contributed more to different outcomes than did others. The supportive campus environment benchmark was a statistically significant contributor to all six selected outcomes. The level of academic challenge contributed statistically significantly more to all outcomes except for 'working effectively with others.' Active and collaborative learning had statistically significant contribution to 'working effectively with others' and 'understanding yourself.' The enriching educational experiences benchmark was only statistically significant to the contribution of a broad and general education.

The results indicated that there is a definite link between engagement and learning outcomes with some benchmarks making more unique contribution to undergraduate international students' outcome than others. See summary on Table 20.

Table 20

Summary of Unique Contribution to Outcomes by Benchmarks

Outcomes	Engagement Benchmarks				
1-6	SCE	LAC	ACL	EEE	SFI
Abroad general education	X	X		X	
Work or job related knowledge and skills	X	X			
Thinking critically and academically	X	X			
Working effectively with others	X	X			
Ability to learn effectively on their own	X	X	X		
Ability to understand themselves	X	X	X		

X indicates statistically significant contribution to outcomes

SCE- Supportive Campus Environment

LAC-Level of Academic Challenge

ACL-Active and Collaborative Learning

EEE-Enriching Educational Experiences

SFI-Student-faculty Interaction

Supportive campus environment and level of academic challenge contributed uniquely to acquisition of all cited outcomes.

Chapter five will discuss the specific findings of this study, summarize implications, study limitations, and outline possible directions for further research in this topic.

CHAPTER FIVE

Discussion

This chapter provides an interpretation and further discussion of the results as highlighted in chapter four. The chapter is divided into four sections. The first section provides a summary of the research questions as first outlined in chapter one. The second section outlines and explains findings of the study in light of the larger body of literature relevant to this study. The third section addresses study limitations and future research directions in international students' engagement. The fourth section provides concluding remarks.

Summary of research

The purpose of this study was to investigate the extent to which engagement in educationally purposeful activities predicted various dimensions of academic, personal, and social development/gains for senior undergraduate international students. Specifically the study examined whether engagement activities played a role in the acquisition of the following selected self-reported or perceived outcomes:

i. acquisition of a broad general education
ii. acquisition of job or work- related knowledge and skills
iii. ability to think critically and analytically
iv. ability to work effectively with others
v. ability to learn effectively on their own
vi. ability to understand themselves

Findings

Question 1

To what extent does engagement in educationally purposeful activities predict international undergraduate students' self assessment of their acquisition of a broad general education?

Descriptive analysis revealed that 83.6% of participants believed their experience at the institution contributed to their acquisition of a broad general education. This positive observation is consistent with findings made by Zhao et al. (2005), whose conclusions noted that international students' scored higher in general education gains than did domestic students. Nevertheless, comparatively, international students in the current study had a lower mean for this gain (*M*=3.26, *SD*=.80) than the average student as reported in NSSE 2005 (M3.33, SD=.77).

One explanation why international students show better gains in this category would be the fact that most international students come from educational systems that do not emphasize general education or core curriculum; rather, majors are chosen by the end of senior year in high school. In this case, students enter college with firm decisions on what their majors would be and enroll directly to their professional schools or departments. When they enroll in foreign institutions where general and core curriculum tend to be offered in the first two years of college, they have gaps to fill from previous different systems and this would provide the growth trajectory indicated in the results.

Examining results from the regression analysis revealed contribution of engagement as a combined set of activities had statistically significant positive effect on acquisition of a broad and general education reaffirming previous research done by Zhao and Kuh (2004). The latter emphasized those students who engage in educationally purposeful activities exhibit gains in personal and social development, practical competence, and general education.

This study, however, went further into analyzing the contribution by each benchmark. Three of the five benchmarks: supportive campus environment, level of academic challenge and enriching educational experiences were significant contributors to the acquisition of a broad and general education ($p<.01$). This makes sense given that general education has been described as learning that helps the students to integrate knowledge across disciplines. General education also helps students to view and examine issues from diverse perspectives, learn across disciplines, and acquire broad knowledge and abilities. Diverse educational experiences, and a challenging curriculum in a campus that provides opportunities for students to thrive, is a logical combination for a formula that would help students make significant gains in general education.

The importance of a broad general education cannot be underestimated. As explicitly stated by the AACU (2008), this kind of learning should be a major component of the undergraduate curriculum because of its ability to make connections between courses. General education also offers students skills to gain empowerment in competencies concerning local and global issues that affect human kind, making them dynamic citizens of the world with rich perspectives in global citizenship and social responsibility. The fact that international students are able, through engagement to earn these skills, has the potential to have a ripple effect through the world as they transfer what they have learned to their home countries and eventually affect more learners globally.

Question 2

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their acquisition of job or work- related knowledge and skills?

A majority of international students' (70%) were positive that educational purposeful activities that they had engaged in contributed to their acquisition of job or work-related knowledge and skills. The issue of job skills acquired by international students has been investigated by other researchers and findings have been ambivalent. Campbell and Li (2007) examined the issue of relevancy and transferability of foreign curriculum to international students' home settings. Findings confirmed that students gained skills that they considered relevant even in their own countries. But the examination of international students' work preparedness by Trice and Yoo (2007) revealed students had differing opinions on work preparedness. Students who felt academically satisfied with their college academic experience were more likely to go back home, but those who were academically dissatisfied did not feel confident that they would go home to apply the job related skills they had developed. Results from this research indicated that students' responses to the questions of gains in job or work skills depended on what their post graduation plans were. Plans could be that they wanted to work in the U.S or they wanted to return to their home countries. Trice and Yoo (2007) reached the conclusion that students believed they had gained work skills but they were ambivalent on the skills relevancy and application to work situations in their home countries. Perhaps what all these studies reflect, including this current study, is the fact that international students do believe they gain job and work skills from their experience in their current campuses; nevertheless they are not sure what to do with those skills especially if they had come to study in the hope of returning home and then they change their minds post graduation. The fact that Trice and Yoo (2007) had concluded that students perceived preparedness to work in the host country as a negative predictor of plans to return home makes gains in this category all the more confusing on how campuses should be preparing international students for job and work related skills. It also

raises the question as to whose role it is to make sure that international students gain the kind of skills that would meet the needs unique to their countries. One would imagine that students enroll in majors that they perceive would be helpful to them after they graduate, but the question still remains as to what the students' plans are post graduation; to go home or to remain in the host country; to work in the foreign country or to work at home?

One question that would be worth answering that none of the studies has adequately answered is international students post graduations plans and reasons behind those plans. This question would also be expanded to include what jobs international students engage in after they go home and whether they find their job and work related skills acquired from their academic and social experiences in U.S or other foreign universities relevant to their current job assignments in their country contexts. Answering this question would be helpful to administrators as they formulate curriculum that would be of direct relevancy to outsiders in order to attract more foreign students. The issues of why international students are so valuable to the American higher education system were discussed earlier in the beginning of this paper.

It should be worth noting here that a supportive campus environment recorded a stronger positive correlation(r=.447, p <01) with gains in job or work-related skills. This benchmark as discussed in the overall findings and in discussions in question one, has a significant effect to international students' success. No wonder researchers have emphasized the importance of a good campus environment because it encompasses so many attributes that are critical to student success: the physical (location and building settings), the social (connectedness with other students and faculty) and the psychological (the feel of belonging). When all these properties come together and are interwoven within the framework of the institutional mission, philosophy,

educational purposes, campus culture and established polices, students are bound to succeed (Kuh et al., 1991).

Question 3

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to think critically and analytically?

Previous literature has documented that international students tended to struggle in academic activities that require application of critical and analytical skills due to their reliance on pedagogies that emphasize rote learning (Campbell & Li, 2007; Robertson et al., 2000; Tatar, 2005; Westin, 2007). Other researchers, although in agreement about the difference in pedagogy styles between the U.S classroom and most foreign classrooms, posited optimism that when exposed to effective teaching methods , academic support services, approaches and activities that facilitated acquisition of critical thinking skills, students were likely to develop the desired skills (Laird, 2005; Robertson et al., 2000; Zhao & Kuh, 2004). This latter view seems to be confirmed from this study.

A large number of the participants in this study (85.2%, n=1384), reported gains in thinking critically and analytically as a result of their engagement experiences. Critical thinking skills recorded the highest mean (M=3.29, SD= 0.767) compared with the other five perceived outcomes. Although all engagement benchmarks recorded significant correlation with acquisition of critical and analytical skills, the level of academic challenge had the highest correlation (r=.439, p<.001). This confirms Zhao and Kuh's (2004) finding that international students gained from exposure to pedagogies that stimulated critical thinking. One finding that may seem to contradict this result is the fact that, enrollment in a learning community was one of those

activities that researchers cited as helpful in acquisition of critical thinking skills (Laird, 2005); yet results from this study revealed that international students did not enroll in learning communities in great numbers. Results indicated a substantial number (79.1%, *n*=1285) had not done, or they were not planning to enroll in a learning community.

This reflects the fact students can still benefit from other activities that can lead to the same results. It would be worthwhile to note that the NSSE clusters do not include engagement in learning communities within the level of academic challenge benchmark but within the enriching educational experiences benchmark. This indicates that gains from effective educationally practices cannot be permanently labeled to belong to a certain category and therefore students should be exposed to as many of the activities across the engagement continuum as possible. This is because there is evidence that exposure to these activities will generate positive gains irrespective of how researchers categorize them. Although the international students did not participate in some of the activities considered essential for growth in critical thinking, results indicated they compensated for this gap by being studious out of class. Activities in the level of academic challenge indicated substantial commitment in personal study time (83.3%, *n*=1352) and significant hours in other academic activities (84%, *n*=84.9). The above explanation should not however be misinterpreted to mean that faculty and academic affairs professionals should not be concerned with the almost 80% of international students who had not done, or were not planning to participate in a learning community. As a matter of fact they should, because this is the one of those experiences that helps students gain in so many areas: academic, social and personal; because of the variety of pedagogical approaches in these learning environments (Laird, 2005). In research universities, which are the focus of this study, some classes can be too large and almost passively impersonal; smaller learning environments

can help international students feel more comfortable and raise their self confidence, which in turn can facilitate their ability to effectively bond with a selected group of learners that they might consider as their community of learners.

Question 4

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to work effectively with others?

The ability to work effectively with others, which literature identifies as collaborative learning (Kuh et al., 2005), seeks to emphasize an active approach to learning. Students are encouraged to actively engage in experiential learning; do collaborative projects with other students in and out- of- class, engage in academic discussions, and participate in projects that emphasize use of interpersonal skills. Data analyses revealed that 78% of international students believed that their engagement experiences at their universities contributed to their ability to work effectively with others. Previous literature had indicated international students shied away from academic and non academic activities that require group collaboration or involvement in class discussions. Researchers attributed this to problems related to fluency in English as a second and sometimes third language for most international students (Bonazzo & Wong, 2007; Lee & Carrasquillo, 2006; Poyrazli et al., 2001; Tomich et al., 2003; Zhai, 2002). Examining data on the activities that contributed to working effectively with others, there were indications that international students had positive gains associated with collaborative learning especially in cases involving working with fellow students to prepare class assignments outside class (59.9%, n=972), or discussing readings outside class with fellow students, families, and co-workers. These data do reveal that international students were more comfortable collaborating with others

outside of class. One explanation would be the fact that, in working outside class, students were able to work at their own pace and were not so conscious about making speech mistakes in English; something that made most of them afraid of engagement in class discussions (Lee et al., 2006). This does affirm the importance of language support services for international students. With such support they would build confidence to interact and engage in class and also take advantage of on-campus jobs like peer tutoring. The latter was an activity associated with academic and personal development, yet results indicated a sizeable number of international students (72.4%, *n*=1175) did not take advantage of tutoring opportunities.

It has been noted elsewhere in this paper that gains appeared to have been made when engagement was analyzed as a phenomenon (a combined set of activities) rather than as singular (individual) activities. When a closer examination of what aspects of engagement contributed most to the perceived outcome of 'working effectively with others,' some engagement benchmarks were better predictors for this perceived outcome than others. Supportive campus environment contributed the most (b=.016, *p*=<01), followed by active and collaborative learning (b=.011, *p*<.01) and level of academic challenge, b=.008, *p*=<.01. Contribution by enriching educational experiences was not statistically significant (b=.002, *p*=.146) and so was student-faculty interaction (b=-.002, *p*=.101). These results highlight the need for careful and detailed examination of each benchmark and activities therein to see what students are frequently engaging in, and what they are missing out on. The fact that engagement as a phenomenon is helpful is not in doubt given the results so far, the issue is, however, that not all students are engaging in all activities that are considered part of the whole in the engagement process. For example in the support campus environment benchmark, although the regression analysis recorded a positive significant contribution to acquisition of the cited outcome, descriptive

results revealed that there is lack of institutional support needed for students to thrive socially (66.1%, *n*=1074). As noted by Kuh (1995), students need to thrive socially because this is a vital component of engagement and does contribute to student success. The connectedness that occurs between students and their out-of-class curriculum helps student to develop personal and social attributes that enhance their abilities to work effectively with others. The same case applied to the active and collaborative benchmark. Although the regression analysis revealed a statistically significant contribution to the perceived outcome, not all activities in this benchmark were frequently done by international students. Results revealed that international students did not often work with other students for in- class projects (51%, *n*=843). They however did a little better if the academic projects were assigned to be done outside of class (59.9%, *n*=972). This highlights the need for institutions to examine NSSE results item by item to know what areas need to be improved and for what sub-population of students. Results that are compounded and reported as a scale can sometimes disguise individual impact of singular activities within the scale. For example the above results underscore that there needs to be more done for international students engagement inside the classroom and also outside the classroom. When it comes to working outside the classroom for what Kuh (1995) calls the "other curriculum," i.e. field experiences in community volunteering and internship, international students did not do well. This might explain why the enriching educational experiences benchmark, which mostly deals with co-curricular and cooperative projects, did not have a statistically significant effect on students' ability to work effectively with others. The major lesson here is that international students need a lot of institutional support to make gains in working effectively with others by being encouraged to sign up for more co curricular activities and student organization groups to enhance their collaborative efforts.

Question 5

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to learn effectively on their own?

As with other previously discussed perceived outcomes, results in this study revealed that the concept of engagement was positively correlated with students' ability to learn effectively on their own. From descriptive results, students reported that they had grown in the ability to work effectively on their own (76%, *n*=1229). The two best predictors of this outcome were supportive campus environment and the level of academic challenge. These two benchmarks shared an equal statistically significant contribution (b=.013 *p*=<.01). A supportive campus environment helps to add confidence and positive perceptions of campus to the international students boosting their desire to engage in available opportunities. The level of academic challenge as another best predictor affirms that high impact intellectual activities that emphasize critical thinking, making sound judgments and synthesizing information has invaluable contribution to not only academic success, but also to personal development. These high impact activities when utilized are effective learning tools that enhance effective learning and increase students' abilities, enriching their overall undergraduate experience (Kezar & Kinzie, 2006; Kuh, et al. 2005; NSSE, 2007; Schroeder & Kuh, 2003).

Previous literature depicts international students-especially freshmen-as passive, shy, and afraid to openly own knowledge (Lee, et al., 2006). This comes from past experiences in systems that rely heavily on the teachers as the "imparter of knowledge" (Tatar, 2005) and "absolute authority" (Lee et al., 2006). Due to these observations, international students have been labeled as passive recipients of knowledge (Tatar, 2005). This research did confirm this notion revealing

that 79.2% of the participants had not done an independent study or self-designed major although a sizeable number of participants (76.2%, *n*=1229) believed that they were actually able to be independent learners. With this almost contradictory result from the same sample, it highlights the fact what different groups perceive as learning could be different. International students may be of the opinion that because of the time they spend revising their lecture notes, they are actually learning and don't have to do independent projects /study to qualify as effective learners. Yet, literature does cite the importance of engaging students in learning that is creative, independent, and aligned to promote critical thinking (Zhao & Kuh, 2004). There is need for academic counseling that would assist and encourage students to be more proactive in taking ownership of their learning. They have to be encouraged to actively engage in activities that promote independent pursuit of knowledge. There also needs to be emphasis that, whereas professors are imparters of knowledge, students too, are capable of pursing knowledge on their own, contributing to research, new discoveries, and members of the wider community of learners in and outside the classroom.

Question 6

To what extent does engagement in educationally purposeful activities predict senior international undergraduate students' self assessment of their ability to understand themselves?

Understanding oneself is an indicator of student self growth in personal and social development (Kuh, 1999; Pascarella & Terenzini, 2005). In attaining this development, students are able to attain a range of competencies that include but are not limited to: self-awareness, autonomy, confidence, social competencies and are able to acquire maturity in personal and interpersonal relationships. Understanding oneself also calls for a sense of purpose that help students live a meaningful life, affecting their self worth, wellbeing, and the quality of

interactions with others (AACU, 2008). They are able to work effectively with others or independently on their own and have a deeper and more insightful understanding of themselves.

This study found that nearly 70% (n=1135) of the participants believed that their engagement experiences at their learning institutions contributed to their ability to understand themselves. Once again a supportive campus environment (b=.016, p<.01), and level of academic challenge (b=.009, p<.01) had statistically significant numbers indicating they were better predictors of this outcome for international students.

It is a particularly significant finding that international students did indicate that they were achieving growth in this area of self development. This is because earlier research had indicated that international student struggle with fitting in their campuses because they perceived their environments to be hostile (Lee, 2007; Lee & Rice, 2007). These negative perceptions of their environment affect students' perception of who they are, and undermine belief in themselves. As noted in a study by Poyrazli et al. (2002), adjustment issues that foreign students face in foreign universities, and the new culture that they have to learn to negotiate through, can inhibit their psychosocial development and interfere with their ability to engage in educationally purposeful activities due to reduced self esteem and efficacy.

Nevertheless, Terenzini et al. (2003) had cautioned that research on students' growth and development should always be interpreted cautiously because it was mainly based on samples from white, traditional-age, full-time students attending four-year, residential institutions. But finding from this study does indicate that college students, no matter their background, benefit from experiences that are directed towards supporting them as individuals who are still growing in academic, social and personal aspects. With a supportive campus environment and challenging

well designed programs, students will be empowered to understand who they are. In achieving this milestone of self awareness and identity, they will in turn be able to understand others.

Further examination of results for this question revealed statistically insignificant contribution of the student- faculty interaction (p=.964) benchmark. International students did not interact much with faculty particularly outside the classroom, and in matters unrelated to academics. An explanation would be what research has consistently indicated that international studies tend to keep their distance with faculty because they view them as authority figures that should not be bothered or engaged unnecessarily (Heggins & Jackson, 2003; Lee, 2006; Tatar, 2005). But interestingly enough, not interacting with faculty did not mean that faculty were unavailable to international students. To the contrary, an item in the supportive campus environment benchmark asking students to report on the quality of their relationships with people at their institutions (faculty, other students &administrative personnel and offices), a large number international students (76%, n=1244) indicated that faculty were available, helpful and sympathetic. This would suggest that although students knew faculty were available, they did not take the opportunity to interact. In a study done by Mallinckrodt and Leong (1992) quality relationships with faculty, faculty interest in students' professional development, and quality of instruction perceived by students can provide a strong protective function against the development of depression in international students undergoing stress. In such cases, faculty are perceived as a social support system for students, especially for those who struggle with self esteem and interpersonal issues. There is need therefore for academic and student affairs professionals to orient the students on the importance of interacting with faculty not only about their class work, but also making use of office hours to discuss career choices or research projects that could broaden their knowledge and experience in their academic work. Alternative

ways of facilitating student-faculty interaction, i.e. academic and social networks like blackboard, emails, facebook and twitter should be explored. In this age of technology, administrators need to use whatever works to get the desired results.

Educational experiences that were more geared towards discussions about diversity and race did not seem to count for much in students' acquisition of this sixth outcome either. The enriching educational experiences benchmark recorded a statistically insignificant contribution (b=.002, *p*=.241) Discussion on diversity issues with different ethnic groups may not be that new given that majority of intentional students who enroll in U.S universities come from countries that are multi-ethnic and multicultural. For this reason, diversity and dialogues with people of varied cultures is a way of life for many international students. This would explain why such experiences show insignificant contributions to students academic and personal development areas. Nevertheless, whereas international students themselves may not find enriching educational experiences like diversity dialogues that enriching, they should be encouraged to participate in these activities because domestic students would greatly benefit from this kind of interaction. International students would also benefit from learning about cultures that may be new to them from their counterparts from other countries. Nobody knows all cultures, and therefore I believe students would learn from each no matter how much diversity or multicultural education they believe they have. It is by knowing others that we have an insight about ourselves.

Findings by gender and race

The role of gender

In analyzing the regression equations, results revealed that gender was a factor in acquisition of two of the outcomes: a broad and general education (*p*=.012) and working

effectively with others (p=.044). Although I could not find any previous studies on gender differences in student engagement for international students, a study on gender and student engagement in college by Kinzie et al.(2007) indicated there are differences in how male and female students engage in educationally effective learning activities, and for that reason, gains from engagement may vary by gender. A study examining gender and engagement for African American students (Harper et al., 2004) also noted that, whereas females seemed to have made significant gains in engagement and outcomes, there were still differences in areas of engagement by gender in that sub-population. This confirms the fact that college is experienced differently by different individuals and it can be misleading to generalize findings of one group to fit the other. Perhaps this explains why more studies on the relationship between gender, student engagement and outcomes should be explored in order to find specific engagement patterns for male and female international students and other sub-populations.

The role of race

The NSSE survey includes a question that helps identify students who are from foreign countries and are enrolled as international students (see Appendix A, question 17). However, the survey does not ask for foreign students' country of origin or their racial identification. The category provided for all participants for racial/ethnic identification (see Appendix A, question 18) is also used by the international students. This category is used in this research, and has been used by other researchers (Zhao et al., 2005), as a proxy for international students' region of origin and cultural environment. Racial identification is important in matters of engagement because it has been found to be relevant in how students engage and adapt to learning environments (Chen et al., 2007; Harper et al., 2004; Laird et al., 2004). In this current study, there were differences in gains according to race. ANOVA comparisons indicated that

engagement differed by race in all benchmarks expect in the student-faculty interaction benchmark where did not seem to be a factor (see Table 7). Findings of differences by race are consistent with an earlier study of international students and engagement (Zhao et al., 2005). In the latter study, the authors noted differences in White, Asian and Black students' engagement patterns and gains. These findings make it all the more important for higher education administrator to understand the diversity of their students' body and to create varieties of opportunities for engagement given the diverse learning and environmental factors that can affect engagement and consequent gains. Further studies should also be conducted to explore why the differences exist and what policy changes or programmatic alternatives could address the issue so that all students can engage meaningfully.

Summary of findings

This section will highlight a summary of other findings

i) One of the overall findings of this study was that engagement as a combined set of activities that NSSE has clustered into benchmarks- level of academic challenge, active and collaborative learning , student- faculty interaction, enriching educational experiences and supportive campus environment, was a good predictor of self-reported outcomes in students' academic, personal, and social development. This is consistent with previous research that determined that sets of educationally effective practices that students engaged in during college, positively affected their growth academically, personally and socially (Kuh, 2001; Pascarella & Terenzini, 1991).

ii) International students had major self- reported gains in thinking critically and academically with the level of academic challenge having a greater association with this outcome. Previous literature has well-documented that curriculum that emphasizes challenging

cognitive skills helps learners to acquire or better their critical thinking skills (Daud & Husin, 2004; Zhao & Kuh, 2004). According to descriptive statistics, a high percentage of international students reported their curriculum emphasized substantial aspects of a challenging curriculum: analyzing (85.6%), synthesizing (74.6%), making judgments (70.6%), and application (78.9%). From these data it is clear that engaging students in a high order thinking and challenging curriculum does contribute to students gaining in critical thinking skills are better positioned to gain academically. For international students the level of academic challenge as a benchmark has stronger correlation to thinking critically and academically.

Another explanation would be that international students tend to come in with lower levels of critical thinking and therefore there is room for more gains through the new pedagogy styles and other out-of-class engagement experiences. As Daud and Husin (2004) concluded in an earlier study, international students find the curriculum and teaching methods different from what they are used to but eventually gain the required skills.

iii) This study gave more details than previous studies on what engagement patterns were better predictors for perceived outcomes for international students. Supportive campus environment emerged as the one benchmark that had stronger positive correlation with the self-reported outcomes. Previous research that generally investigated campus environment for all students (Cabrera et al., 1999) noted the importance of a supportive environment for student success. Lee (2007), Lee and Rice (2007), Poyrazli and Grahame (2007), Frey and Roysircar (2006), Bonazzo and Wong (2007), underscored how a negative and unsupportive environment could cause distress and negative impact on international students' learning. This is because most of the international students reported encountering prejudice and discrimination that consequently affected their learning. In this study, 77% of students indicated their campus

environment was supportive. This was a surprising result, given that most of the literature emphasized how international students struggled in their new environments. One explanation could be that this sample focused on seniors who had already worked through the transitional difficulties attributed to being an international student, and had already found ways to negotiate change in new environments. This study supported the fact that a positive perception of the campus was important to international students' learning and success.

iv) Institutional type was not a significant factor in student engagement patterns and perceived outcomes. There were minimal mean differences between public and private research universities. Although the study was not intended to be a comparative analysis, descriptive statistics were run to provide a general overview of the data and participants. This finding was consistent with NSSE reports, (NSSE 2007) that there is more variability among students within the same institution than there is between institutions of the same category.

v) Academic preparation was of paramount importance for international students. Results indicated that a majority of students (over 80%) spent substantial amount of time (six hours or more in a 7-day week) doing academic related activities (i.e., studying and doing homework) than outside of class activities. Not surprising given that previous research had indicated that international students are generally highly motivated to work hard sometimes out of a desire to succeed in a foreign country, and other times out of pressure by families who spend a lot of money to get them through school (Tatar, 2005). As noted by Westin (2007), international students tend to give up informal relations to allow more time for academic work. Another reason may be the fact that most of them struggle with English as a second language (Poyrazli et al., 2001; Tomich et al., 2003; Zhai, 2002) and therefore spend more time reading and re-reading homework text and instructions than a native speaker normally would.

Implications of study

There has been limited research on international students and how their learning is affected by the concept of engagement in educationally purposeful activities, although engagement has become a proxy for test of quality for undergraduate education and experience for most universities since 2000 (NSSE, 2007). Results from this study add to the body of literature on engagement and international students that has received little attention despite the significance of engagement in undergraduate learning, and despite the fact that international students have become a major segment of the student body in many U.S campuses.

This study brings to light major implications that are worth highlighting. Firstly, the design of this study gives student and academic affairs professionals who work with international students a chance to closely look at their engagement patterns. It allows the professionals a closer look at what activities students are mostly engaged in or least engaged in. Results proved that international students are more engaged in some activities and dis-engaged in others. This warrants the need for understanding engagement in the context of this student population and further analyses of what is working and what is not working and why. As noted by Zhao et al. (2005), "international students from different cultures and nations may differ in ways that also affect student engagement "(p.222) due to differences in how they adapt and acculturate in their foreign learning environments.

Secondly, this study brings to light the need for caution when interpreting engagement survey results for campus populations. Engagement as a phenomenon is significant in all aspects but this study revealed that results on the effect of engagement on outcomes should be interpreted cautiously, without undue generalizations of the benefits of engagement as a phenomenon. In doing the latter, there is a danger of losing detail on what activities contribute

most to what outcomes in what student population. There is need to look into the details of what is working for what student population. This fact is also underscored by Kinzie and Pennipede (2009) who discuss the importance of contextualizing results and digging deeper into item specific results for better and more focused research on different student populations.

The third major implication of this study is the link between a supportive campus environment (SCE) and desired gains in academic, personal and social development for undergraduate international students. SCE as a benchmark recorded higher correlations with the desired outcomes. It is therefore right to conclude that, according to results from this study, international students thrive in a supportive campus environment. It is paramount that institutions create conducive environments because this, as results has shown, has a strong link to the outcomes that are vital to the success of international students.

The fourth major implication from this study is the revelation that international students did not have quality interaction with faculty especially on issues that were not part of classroom activity. Few of them engaged in research with faculty or discussed career plans with them. This is a weak point for international students given the importance of student-faculty interaction in the improvement of students' college experience. The importance of student-faculty interaction is underscored by literature (Anaya & Cole, 2001; Cole, 2007; Hu & Kuh, 2002; Kuh et al., 2005; Pascarella & Terenzini, 2005). It is therefore necessary that the relevancy and contribution of faculty relationships to students be taken seriously. International students may feel that they do not need to meet with faculty regularly because they are compensating by working extra hard on their own outside class, but meeting with faculty regularly and taking on research projects with them have been identified as crucial for mentoring about careers, professional research and writing. The role of faculty in students' education should therefore be emphasized and what

faculty expects of students should be clearly articulated. Institutions should think of ways to help international students gain confidence in working with faculty. The students reported that faculty were helpful but results also indicated that many students did not seem to make use of faculty's good will and presence. Institutions should find ways of making international students feel more comfortable and connected to their faculty because this connection is part of the larger engagement phenomenon that has been linked to students' gains in their academic, personal and social development. On the same note, there needs to be more research on whether student-faculty interaction has major contributions to student learning outcomes and development. It is possible that students can still gain outcomes without major interaction with faculty. More research is needed in this area.

The fifth major implication arising from this study is the need for support services for international students in order to improve their academic capabilities especially for those who are linguistically challenged by English as a foreign language. Results indicated international students spent substantial amount studying privately, probably trying to understand texts and homework thus taking more time to complete tasks. Institutions should make available or improve academic support services for internationals students. Services could range from English as a Second language (ESL) centers, peer tutoring, mentoring, writing centers, and living learning communities with advisors available. Ladd and Ruby (1999) in their study about international students' learning styles underscored the importance of gradual introduction to the new learning approaches that international students are unfamiliar with. This means students international students may not jump into activities or at once, but gradual introduction to various activities and making sure they are aware of those opportunities. Well planned and detailed

information should be made available in orientation sessions and updates of new services should be regularly sent out to students.

Finally, students need to be guided on why seeking and engaging educationally purposeful activities is important for their college experience. By the time internationals students graduate from these campuses, they should have had an opportunity to have a well rounded engagement process. Kinzie and Pennipede (2009) offer a practical way of taking action on student engagement results. The authors encourage that institutions first create awareness of the student engagement survey before the results are available, then disseminate the results to key constituents through short reports or regular meetings, and then analyze results so that the data can be used to inform necessary interventions. These steps, the authors note, are proactive and practical ways that institutions can use NSSE survey results.

Limitations

The first limitation as in all non-experimental research is possibility of confounding variables interfering with the results, no matter how much they are controlled for statistically (Carini et al., 2006). Students' entering characteristics and inputs, their prior knowledge, their abilities, their demographics and so on may confound variables (Klein et al., 2005), making it hard for a pure experimental research. This limitation may apply to this research too.

The second limitation in this research would be multicollinearity among the independent variables. There is indication that the model of using the benchmarks as distinct and separate independent variables may need to be improved in future research. Using separate engagement items in the benchmarks or using scalelets (Pike, 2006) may be a viable alternative.

The third limitation associated with this research would be the choice of sample. Whereas the choice of the sample was its uniqueness, others might look at it as limiting given that the

study focused on students who were in their fourth year (seniors) only. Class level could be viewed as a limitation because students in other class levels may have a similar or a different experience. Nevertheless, as described in methodology section, the scope of this study may not allow for that comparison, and reasons behind the choice of sample were well articulated.

The fourth limitation is that the research focused on research universities (as per 2004 Carnegie Classification). There are several institutional types in the U.S., but this study focused on research universities. Perhaps other studies could focus on other institutional types for comparative analysis.

Examining senior international students as a homogenous group is a fifth limitation. International students come from a myriad of countries and cultures, and so assuming homogeneity of their entering characteristics or their educational systems may be limiting. Nevertheless, studying them as a group does help, somewhat, to shed some light in into international students college engagement experiences, a field that requires more research.

Data used in this research were provided by NSSE. The Research Center does not provide current year data for outside researchers. They provide data that are three years old. This means when I requested for data, NSSE provided three years out allowing access to the 2005 survey. More current data may be available now, with even more participants, because engagement has gained more momentum in the last few years and more institutions are signing up for the NSSE's surveys. This would address this sixth limitation.

Finally, it would also be helpful to the reader if I note that, NSSE data were collected from student self-reports as previously noted in the methods section. As noted by Pike (1995, 1996, 2006), this method of data collection has its skeptics who prefer a mixture of standardized testing and self-reporting. Others have argued that the validity of self-reports should not be

trusted since there is a possibility that respondents may sometimes over rate or under rate their experiences (Jaschik, 2009).

Nevertheless, results from self-reports have been able to offer insights into how the students actually differ in their college experiences and examining all aspects of the engagement concept in detail as this study does, is invaluable for academic and student affairs professionals who may be seeking an understanding of various aspects of pathways to student success

Future research directions

This study focused on the relationship between engagement and self-reported outcomes in academic, personal and social outcomes for senior international undergraduate students at Research universities. Whereas the concept of engagement has been explored for other segments of student populations, there was not much directed to international students. This study has attempted to fill that gap in literature by offering a detailed examination of the five benchmarks of engagement: level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environment. Using quantitative methods, the study examined these benchmarks predict and relate to international students' acquisition of outcomes that are perceived as essential for a quality undergraduate education and experience.

Although this study has attempted to fill that gap, there are numerous research questions that could be answered in future research on international students and the concept of engagement. I consider the following as vital areas in engagement and international students that still need to be explored:

- A qualitative study on international students' engagement and why students tend to be more engaged in some activities and not others even though they

acknowledge and probably understand that those engagement areas are vital. A qualitative study would allow for more in-depth, probing research to understand the reasons behind international students' engagement patterns. As noted by Kinzie and Pennipede (2009), there is need for qualitative analyses that goes beyond the numbers thus "adding respondent voices and institutional contexts" (p. 88) and helping to make "findings more credible and meaningful" (p. 88).

- Although Zhao, Kuh and Carini (2005), did a paper that compared international students engagement and that of domestic students. I believe another broader comparative study that exhaustively compares specific items of each benchmarks would fill in more gaps and would add substantial insight to Zhao, Kuh and Carini's paper.
- NSSE notes in their annual NSSE reports (2005, 2007) that differences in engagement are more within institutions that between institutions; something noted in the descriptive results of this study; there is need therefore for more research that seeks to investigate engagement patterns for students within the same college or university. Comparative research for students in the same institution would be helpful as each institution would contextualize their results and take action accordingly for the different populations.
- Data used in this study were from one set of 2005. This study could be replicated or researchers could do longitudinal studies by surveying incoming freshmen and then doing a post survey during their senior year. Since NSSE surveys first years and seniors, a study could be done to investigate change over time for the same cohort of students.

- Other future directions for research would include doing studies that use mixed data. By this I mean using data that has been collected through self reports and combining it with more traditional measures like standardized testing. Survey instruments could be formulated that measure the outcomes of engagement by both self reports and standardized measures.
- While this study investigated engagement using all five benchmarks, future research could focus on investing further the effect of each benchmark, or specific items within the benchmark in order to learn in detail effects of specific activities on selected outcomes. This research focused on research universities and could be replicated with other institutional types
- Finally, there is potential to study engagement patterns by other sub-groups e.g. gender, athletes, majors, ethnicity, residency etc. The NSSE survey provides a lot of avenues for new directions in student engagement and experiences.

Hopefully, in the future, we will read more about engagement investigated using varied approaches and differing samples. This will continue to increase our understanding of the concept of engagement and its links to desired student outcomes and success.

Conclusion

The purpose of this study was to examine the relationship between engagement and perceived academic, personal and social outcomes for senior undergraduate international students. The study found that engagement as a phenomenon had positive effects on perceived outcomes. All five engagement benchmarks recorded positive correlation between engagement and outcomes. However, from the descriptive and regression analyses results, it was clear that

students engaged more frequently in some activities than others and some benchmark contributed more to international student outcomes than others.

I believe whereas engagement has become the proxy measure of the quality of undergraduate education and experience (Kuh, 2001), what students engage or not engage in should be carefully studied in order to help faculty and administrators to fully understand engagement patterns for different sub-populations and align advising, programs and facilities as needed.

Although overall results confirmed that engagement does in fact have positive effects, student and academic affairs professionals should not seek to analyze whether students are making use of available opportunities in their institutions to fully maximize the benefits of engagement. With this kind of reflective analysis, then students can benefit more from their engagement.

From this study it can be concluded that international students did well in academic related activities but did poorly in activities that required independent study and the non-traditional curriculum. These are areas that can be corrected with advising and change of strategy on how international students are oriented to campus opportunities. As Hu and Kuh(2002) note, all students may not engage at the same level and may not have similar outcomes because of inherent differences that no one can control, but institutions can make an effort to change institutional strategies and allow more opportunities for engagement and put more emphasis on what students are missing out on. Therefore, success of engagement as a predictor of outcomes depends on how well the institutions create avenues for interaction between the individual, the institutional, and the campus environment (Hu & Kuh, 2002).

Finally, reaping outcomes from engagement must be a collective effort from the student and all aspects of the institution: peers, faculty and administrators. Reaping outcomes from engagement will also involve a detailed analysis of engagement benchmarks and how different segments of the student's population are fairing in the engagement process. In looking at the engagement process this way, faculty and administrators will be in a better position to understand their students and to work on areas that students are falling short on, and to enhance those activities that they are doing better in. There is no question that engagement does affect outcomes, but the complexity of the learning process, especially for international students should make institutions all the more interested in understanding further all items and details of engagement so that they can help this population have success in college and ultimately in life.

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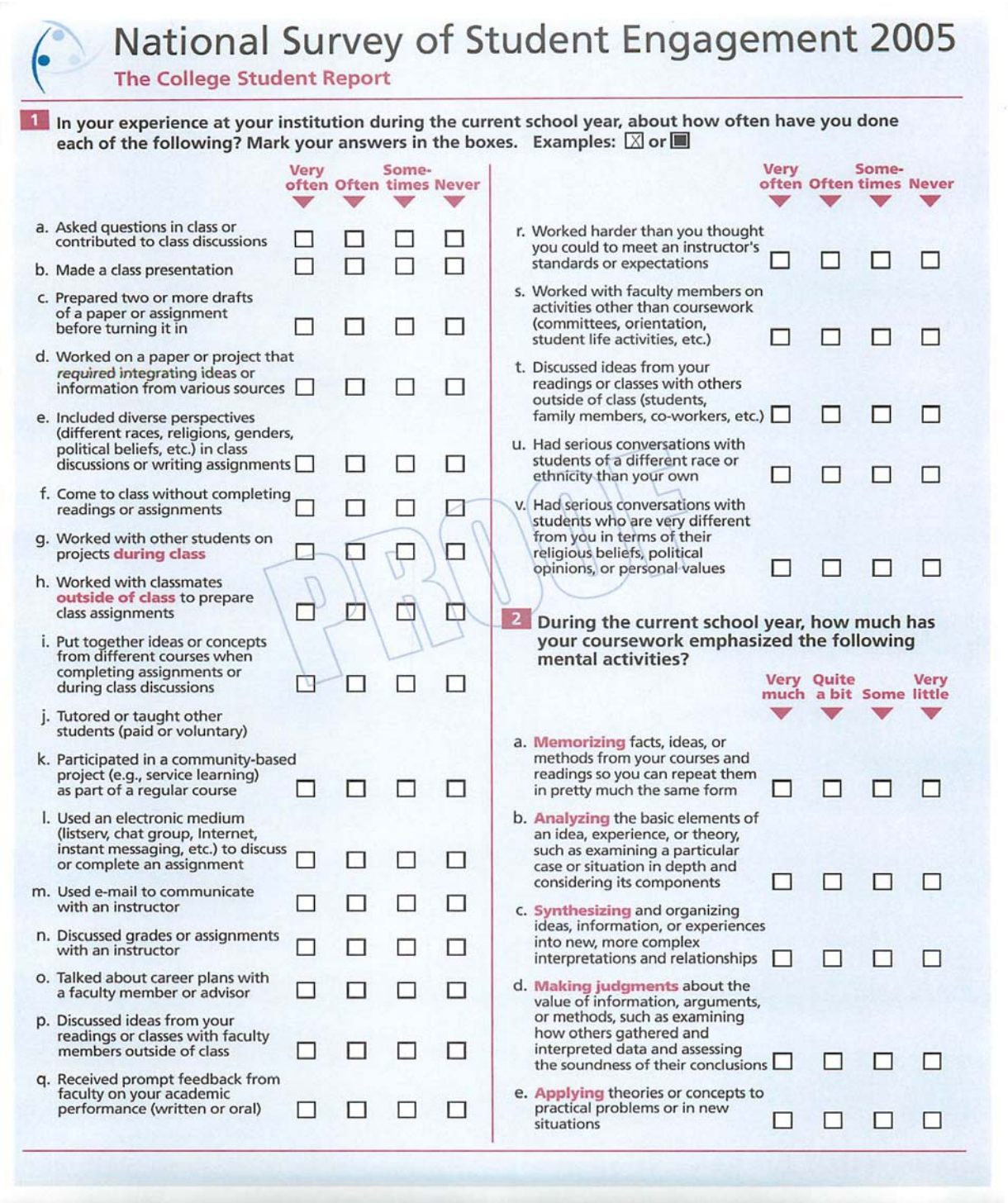
APPENDIXES

Appendix A

A copy of the NSSE 2005 Survey. Data were used with permission from The Indiana University Center for Postsecondary Research(see Appendix D)."Retrieved from http://nsse.iub.edu/pdf/NCS%20proof%2011_30_04.pdf



National Survey of Student Engagement 2005

The College Student Report

1 In your experience at your institution during the current school year, about how often have you done each of the following? Mark your answers in the boxes. Examples: ☒ or ■

	Very often	Often	Some-times	Never
a. Asked questions in class or contributed to class discussions	☐	☐	☐	☐
b. Made a class presentation	☐	☐	☐	☐
c. Prepared two or more drafts of a paper or assignment before turning it in	☐	☐	☐	☐
d. Worked on a paper or project that *required* integrating ideas or information from various sources	☐	☐	☐	☐
e. Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	☐	☐	☐	☐
f. Come to class without completing readings or assignments	☐	☐	☐	☐
g. Worked with other students on projects **during class**	☐	☐	☐	☐
h. Worked with classmates **outside of class** to prepare class assignments	☐	☐	☐	☐
i. Put together ideas or concepts from different courses when completing assignments or during class discussions	☐	☐	☐	☐
j. Tutored or taught other students (paid or voluntary)	☐	☐	☐	☐
k. Participated in a community-based project (e.g., service learning) as part of a regular course	☐	☐	☐	☐
l. Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	☐	☐	☐	☐
m. Used e-mail to communicate with an instructor	☐	☐	☐	☐
n. Discussed grades or assignments with an instructor	☐	☐	☐	☐
o. Talked about career plans with a faculty member or advisor	☐	☐	☐	☐
p. Discussed ideas from your readings or classes with faculty members outside of class	☐	☐	☐	☐
q. Received prompt feedback from faculty on your academic performance (written or oral)	☐	☐	☐	☐
r. Worked harder than you thought you could to meet an instructor's standards or expectations	☐	☐	☐	☐
s. Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	☐	☐	☐	☐
t. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	☐	☐	☐	☐
u. Had serious conversations with students of a different race or ethnicity than your own	☐	☐	☐	☐
v. Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	☐	☐	☐	☐

2 During the current school year, how much has your coursework emphasized the following mental activities?

	Very much	Quite a bit	Some	Very little
a. **Memorizing** facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	☐	☐	☐	☐
b. **Analyzing** the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components	☐	☐	☐	☐
c. **Synthesizing** and organizing ideas, information, or experiences into new, more complex interpretations and relationships	☐	☐	☐	☐
d. **Making judgments** about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions	☐	☐	☐	☐
e. **Applying** theories or concepts to practical problems or in new situations	☐	☐	☐	☐

3 During the current *school year*, about how much reading and writing have you done?

	None	Between 1 and 4	Between 5 and 10	Between 11 and 20	More than 20
a. Number of assigned textbooks, books, or book-length packs of course readings	☐	☐	☐	☐	☐
b. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment	☐	☐	☐	☐	☐
c. Number of written papers or reports of **20 pages or more**	☐	☐	☐	☐	☐
d. Number of written papers or reports **between 5 and 19 pages**	☐	☐	☐	☐	☐
e. Number of written papers or reports of **fewer than 5 pages**	☐	☐	☐	☐	☐

4 In a *typical week*, how many homework problem sets do you complete?

	None	1-2	3-4	5-6	More than 6
a. Number of problem sets that take you **more** than an hour to complete	☐	☐	☐	☐	☐
b. Number of problem sets that take you **less** than an hour to complete	☐	☐	☐	☐	☐

5 Mark the box that best represents the extent to which your examinations during the current school year have challenged you to do your best work.

Very little ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very much

1 2 3 4 5 6 7

6 During the current school year, about how often have you done each of the following?

	Very often	Often	Some-times	Never
a. Attended an art exhibit, gallery, play, dance, or other theater performance	☐	☐	☐	☐
b. Exercised or participated in physical fitness activities	☐	☐	☐	☐
c. Participated in activities to enhance your spirituality (worship, meditation, prayer, etc.)	☐	☐	☐	☐
d. Examined the strengths and weaknesses of your own views on a topic or issue	☐	☐	☐	☐
e. Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	☐	☐	☐	☐
f. Learned something that changed the way you understand an issue or concept	☐	☐	☐	☐

7 Which of the following have you done or do you plan to do before you graduate from your institution?

	Done	Plan to do	Do not plan to do	Have not decided
a. Practicum, internship, field experience, co-op experience, or clinical assignment	☐	☐	☐	☐
b. Community service or volunteer work	☐	☐	☐	☐
c. Participate in a learning community or some other formal program where groups of students take two or more classes together	☐	☐	☐	☐
d. Work on a research project with a faculty member outside of course or program requirements	☐	☐	☐	☐
e. Foreign language coursework	☐	☐	☐	☐
f. Study abroad	☐	☐	☐	☐
g. Independent study or self-designed major	☐	☐	☐	☐
h. Culminating senior experience (capstone course, thesis, project, comprehensive exam, etc.)	☐	☐	☐	☐

8 Mark the box that best represents the quality of your relationships with people at your institution.

Relationships with:

a. Other Students	b. Faculty Members	c. Administrative Personnel and Offices
Friendly, Supportive, Sense of Belonging	**Available, Helpful, Sympathetic**	**Helpful, Considerate, Flexible**
7 ☐	7 ☐	7 ☐
6 ☐	6 ☐	6 ☐
5 ☐	5 ☐	5 ☐
4 ☐	4 ☐	4 ☐
3 ☐	3 ☐	3 ☐
2 ☐	2 ☐	2 ☐
1 ☐	1 ☐	1 ☐
Unfriendly, Unsupportive, Sense of Alienation	**Unavailable, Unhelpful, Unsympathetic**	**Unhelpful, Inconsiderate, Rigid**

9 About how many hours do you spend in a typical 7-day week doing each of the following?

	0	1-5	6-10	11-15	16-20	21-25	26-30	More than 30
a. Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)	☐	☐	☐	☐	☐	☐	☐	☐
b. Working for pay **on campus**	☐	☐	☐	☐	☐	☐	☐	☐
c. Working for pay **off campus**	☐	☐	☐	☐	☐	☐	☐	☐
d. Participating in co-curricular activities (organizations, campus publications, student government, social fraternity or sorority, intercollegiate or intramural sports, etc.)	☐	☐	☐	☐	☐	☐	☐	☐
e. Relaxing and socializing (watching TV, partying, etc.)	☐	☐	☐	☐	☐	☐	☐	☐
f. Providing care for dependents living with you (parents, children, spouse, etc.)	☐	☐	☐	☐	☐	☐	☐	☐
g. Commuting to class (driving, walking, etc.)	☐	☐	☐	☐	☐	☐	☐	☐

10 To what extent does your institution emphasize each of the following?

	Very much	Quite a bit	Some	Very little
a. Spending significant amounts of time studying and on academic work	☐	☐	☐	☐
b. Providing the support you need to help you succeed academically	☐	☐	☐	☐
c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	☐	☐	☐	☐
d. Helping you cope with your non-academic responsibilities (work, family, etc.)	☐	☐	☐	☐
e. Providing the support you need to thrive socially	☐	☐	☐	☐
f. Attending campus events and activities (special speakers, cultural performances, athletic events, etc.)	☐	☐	☐	☐
g. Using computers in academic work	☐	☐	☐	☐

11 To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

	Very much	Quite a bit	Some	Very little
a. Acquiring a broad general education	☐	☐	☐	☐
b. Acquiring job or work-related knowledge and skills	☐	☐	☐	☐
c. Writing clearly and effectively	☐	☐	☐	☐
d. Speaking clearly and effectively	☐	☐	☐	☐
e. Thinking critically and analytically	☐	☐	☐	☐
f. Analyzing quantitative problems	☐	☐	☐	☐
g. Using computing and information technology	☐	☐	☐	☐
h. Working effectively with others	☐	☐	☐	☐
i. Voting in local, state, or national elections	☐	☐	☐	☐
j. Learning effectively on your own	☐	☐	☐	☐
k. Understanding yourself	☐	☐	☐	☐
l. Understanding people of other racial and ethnic backgrounds	☐	☐	☐	☐
m. Solving complex real-world problems	☐	☐	☐	☐
n. Developing a personal code of values and ethics	☐	☐	☐	☐
o. Contributing to the welfare of your community	☐	☐	☐	☐
p. Developing a deepened sense of spirituality	☐	☐	☐	☐

12 Overall, how would you evaluate the quality of academic advising you have received at your institution?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

13 How would you evaluate your entire educational experience at this institution?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

14 If you could start over again, would you go to the *same institution* you are now attending?

- ☐ Definitely yes
- ☐ Probably yes
- ☐ Probably no
- ☐ Definitely no

15 Write in your year of birth: 1 9 _ _

16 Your sex
- ☐ Male
- ☐ Female

17 Are you an international student or foreign national?
- ☐ Yes
- ☐ No

18 What is your racial or ethnic identification? (Mark only one.)
- ☐ American Indian or other Native American
- ☐ Asian American or Pacific Islander
- ☐ Black or African American
- ☐ White (non-Hispanic)
- ☐ Mexican or Mexican American
- ☐ Puerto Rican
- ☐ Other Hispanic or Latino
- ☐ Multiracial
- ☐ Other
- ☐ I prefer not to respond

19 What is your current classification in college?
- ☐ Freshman/first-year
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Unclassified

20 Did you begin college at your current institution or elsewhere?
- ☐ Started here
- ☐ Started elsewhere

21 Since graduating from high school, which of the following types of schools have you attended other than the one you are attending now? (Mark all that apply.)
- ☐ Vocational or technical school
- ☐ Community or junior college
- ☐ 4-year college other than this one
- ☐ None
- ☐ Other, specify: _____

22 Thinking about this current academic term, how would you characterize your enrollment?
- ☐ Full-time
- ☐ Less than full-time

23 Are you a member of a social fraternity or sorority?
- ☐ Yes
- ☐ No

24 Are you a student-athlete on a team sponsored by your institution's athletics department?
- ☐ Yes
- ☐ No (go to question 25)

On what team(s) are you an athlete (e.g., football, swimming)? Please answer below:

_____

25 What have most of your grades been up to now at this institution?
- ☐ A
- ☐ A-
- ☐ B+
- ☐ B
- ☐ B-
- ☐ C+
- ☐ C
- ☐ C- or lower

26 Which of the following best describes where you are living now while attending college?
- ☐ Dormitory or other campus housing (not fraternity/sorority house)
- ☐ Residence (house, apartment, etc.) within walking distance of the institution
- ☐ Residence (house, apartment, etc.) within driving distance
- ☐ Fraternity or sorority house

27 What is the highest level of education that your parent(s) completed? (Mark one box per column.)

Father	Mother	
☐	☐	Did not finish high school
☐	☐	Graduated from high school
☐	☐	Attended college but did not complete degree
☐	☐	Completed an associate's degree (A.A., A.S., etc.)
☐	☐	Completed a bachelor's degree (B.A., B.S., etc.)
☐	☐	Completed a master's degree (M.A., M.S., etc.)
☐	☐	Completed a doctoral degree (Ph.D., J.D., M.D., etc.)

28 Please print your primary major or your expected primary major.

_____

29 If applicable, please print your second major or your expected second major (not minor, concentration, etc.).

_____

THANKS FOR SHARING YOUR VIEWS!

After completing the survey, please put it in the enclosed postage-paid envelope and deposit it in any U.S. Postal Service mailbox. Questions or comments? Contact the National Survey of Student Engagement, Indiana University, 1900 East Tenth Street, Eigenmann Hall Suite 419, Bloomington IN 47406-7512 or nsse@indiana.edu or www.iub.edu/~nsse.

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Appendix B

Survey items contributing to the measures of student engagement
Items under each benchmark

I. Level of Academic Challenge (LAC)

11 Items

1. Number of assigned textbooks, books or book-length packs of course readings
2. Number of written papers or reports of 20 pages or more
3. Number of written papers or reports between 5 and 19 pages
4. Number of written papers or reports of fewer than 5 pages
5. The extent coursework emphasized analyzing the basic elements of an idea, experience, or theory
6. The extent course work emphasized synthesizing and organizing ideas, information, or experiences into new, more complex interpretations
7. The extent course emphasized making judgments about the value of information, arguments, or methods
8. The extent course work emphasized applying theories or concepts to practical problems or in new situations
9. Worked harder than you thought you could to meet an instructor's standards or expectations
10. Numbers of hours per 7-day week spent preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)
11. The extent the institution emphasized on you spending significant amounts of time studying and on academic work

II. Active and Collaborative Learning (ACL)

7 Items

1. How often asked questions in class or contributed to class discussions
2. How often made a class presentation
3. How often worked with other students on projects during class
4. How often worked with classmates outside of class to prepare class assignments
5. How often tutored or taught other students (paid or voluntary)
6. How often participated in a community-based project (e.g., service learning) as part of a regular course
7. How often discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)

III. Student-Faculty Interaction (SFI)

6 Items

1. How often discussed grades or assignments with an instructor
2. How often discussed ideas from your readings or classes with faculty members outside of class
3. How often talked about career plans with a faculty member or advisor
4. How often received prompt written or oral feedback from faculty on your academic performance
5. How often worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)
6. Worked or plan to work on a research project with a faculty member outside of course or program requirements

IV. Enriching Educational Experiences (EEE)

12 Items

1. How often had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values
2. How often had serious conversations with students of a different race or ethnicity than your own

3. The extent institution emphasized or encouraged contact among students from different economic, social, and racial or ethnic backgrounds
4. How many hours per 7-day week spent participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc?)
5. How often used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment
6. Have done or plan to do a practicum, internship, field experience, co-op experience, or clinical assignment
7. Have done or plan to do community service or volunteer work
8. Have participated or plan to participate in a learning community or some other formal program where groups of students take two or more classes together
9. Have done or plan to do a foreign language coursework
10. Have or plan to study abroad
11. Have done or plan to do Independent study or self-designed major
12. Have done or plan to do a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)

V. Supportive Campus Environment (SCE)

6 Items
1. The extent to which institution emphasized providing the support you need to thrive socially
2. The extent to which institution emphasized providing the support you need to help you succeed academically
3. The extent to which institution emphasized helping you cope with your non-academic responsibilities (work, family, etc.)
4. Quality of your relationships with other students
5. Quality of your relationships with faculty members
6. Quality of your relationships with administrative personnel and offices

Appendix C

University of Kansas, HSCL # 17175 Research Approval

Your application is now approved and you may begin research immediately. You should receive the formal approval letter, pasted in below, in a few days. Good luck in your research.
3/3/2008
HSCL #17175
Jane Irungu
International Programs
300 Strong Hall

The Human Subjects Committee Lawrence Campus (HSCL) has reviewed your research project application

17175 Irungu/Twombly (ELPS) Assessing International Undergraduate Students' Level of Engagement in Educational Purposeful Activities

and approved this project under the expedited procedure provided in 45 CFR 46.110 (f) (5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for non-research purposes. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Since your research presents no risk to participants and involves no procedures for which written consent is normally required outside of the research context HSCL has waived the requirement for a signed consent form (45 CFR 46.117 (c) (2).

1. At designated intervals until the project is completed, a Project Status Report must be returned to the HSCL office.
2. Any significant change in the experimental procedure as described should be reviewed by this Committee prior to altering the project.
3. Notify HSCL about any new investigators not named in original application. Note that new investigators must take the online tutorial at http://www.rcr.ku.edu/hscl/hsp_tutorial/000.shtml.
4. Any injury to a subject because of the research procedure must be reported to the Committee immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform HSCL when this project is terminated. You must also provide HSCL with an annual status report to maintain HSCL approval. Unless renewed, approval lapses one year after approval date. If your project receives funding which requests an annual update approval, you must request this from HSCL one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

David Hann
Coordinator
Human Subjects Committee - Lawrence

cc: Susan Twombly

Appendix D

Copy of Indiana University Center for Postsecondary Research- Data Use Contractual Agreement

Indiana University Center for Postsecondary Research
Data Sharing Agreement

This Indiana University Center for Postsecondary Research Data Sharing Agreement ("Agreement") defines the parameters for data sharing from the National Survey of Student Engagement ("NSSE") between the Research Institution and its Authorized Researchers named below and the Trustees of Indiana University on behalf of the Indiana University Center for Postsecondary Research ("IUCPR"). The terms below are intended to reflect and comply with the existing agreements between NSSE and the institutions that participate in the survey program. Under these participation agreements, NSSE may:

> *"...make data, in which individual institutions or students cannot be identified, available to researchers interested in studying the undergraduate experience... NSSE results specific to each institution and identified as such will not be made public except by mutual agreement between NSSE and the institution."*

RESEARCHERS

The following researchers ("Authorized Researchers") of The University of Kansas ("Research Institution") may make use of NSSE data pursuant to the terms of this Agreement:

Jane Irungu, doctoral student
Susan Twombly, Dept. of Educational Leadership and Policy Studies

DATA DESCRIPTION

Under this Agreement, IUCPR will provide the researchers a data file delimited in the following ways ("NSSE Data File"):

- Data Source: 2005 NSSE data set
- Variables: all survey items plus Carnegie classification
- Cases: all senior international students from doctoral research institutions

PARAMETERS FOR DATA SHARING:

1. IUCPR agrees to share this data for the sole purpose of **completing Jane Irungu's doctoral dissertation and any resulting papers or presentations.** If the data will be used in any other way, the Authorized Researcher should contact IUCPR and seek further permission.

2. IUCPR will provide a single copy of the NSSE Data File solely for non-commercial research by the Authorized Researchers.

3. The NSSE Data File will exclude the Unit ID code from Integrated Postsecondary Educational Data System (IPEDS), any other unique school or student identifiers, and any variables that IUCPR determines reasonably may permit the identification of a participating school or student.

4. The Authorized Researchers will not make any attempt, privately or publicly, to associate elements of the NSSE Data File with the individual institutions or individual students participating in the NSSE, nor will they share the data with anyone else who might do so.

5. In all publications or presentations of data obtained through this agreement, the Authorized Researchers agree to include the following citation: "NSSE data were used with permission from The Indiana University Center for Postsecondary Research."

6. The Authorized Researchers agree to provide to IUCPR a copy of all reports, presentations, analyses, or other materials in which the data given under this Agreement are presented, discussed, or analyzed.

7. The IUCPR of Indiana University may, by written notification to the Authorized Researchers and the Research Institution, terminate this Agreement if it determines, in its sole discretion, that either the Authorized Researchers or the Research Institution have breached the terms of this Agreement. In the event that this Agreement is terminated, the Authorized Researchers and Research Institution shall return the originals and all copies of the NSSE Data File to the IUCPR within ten (10) days of the receipt of the termination notice.

8. IU will not be liable to the Research Institution for any direct, consequential, or other damages, related to the use of the NSSE Data File or any other information delivered by Indiana University or IUCPR in accordance with this Agreement. The Research Institution agrees that claims for injury or damage which arise solely out of the Research Institution's use of the NSSE Data File and which are subject to the provisions of the Kansas Tort Claims Act (K.S.A. 75-6101 et seq.) may be processed according to the Act.

9. **FEES**

In exchange for access to and use of the NSSE Data File, **Jane Irungu** agrees to pay Indiana University the sum of **$500**, by check upon execution of this Agreement;

SIGNATURES

The undersigned hereby consent to the terms of this Agreement and confirm that they have all necessary authority to enter into this Agreement.

For The Trustees of Indiana University:

Marcia Landen — 2/5/09

Marcia Landen
Director, Grant Services

Steven A. Martin
Assistant Vice President for Research
Indiana University

Date

Alexander C. McCormick
Director,
National Survey of Student Engagement

1/30/2009
Date

For the Research Institution:

Michelle Ginavan, Interim
Director of Research Administration, University of Kansas

Name, Title, and Organization
Authorized Institutional Official of Research Institution

1/16/09
Date

Acknowledgment of Authorized Researchers:

Susan B. Twombly, Professor, Univ of Kansas
Name, Title, and Organization

1/16/09
Date

JANE IRUNGU, DOCTORAL STUDENT
Name, Title, and Organization UNIV. OF KANSAS

1/16/2009
Date

Name, Title, and Organization

Date

Name, Title, and Organization

Date

Appendix E

Frequencies and percentages of items within the level of academic challenge [LAC] engagement benchmark

BENCHMARK 1: LAC

Items	Response	Frequency	Percent
Number of assigned textbooks, books, or book-length packs of course readings	4 or less	521	32.1
	At least 5	1102	67.9
Number of written papers or reports of 20 PAGES OR MORE	4 or less	1343	82.7
	At least 5	280	17.2
Number of written papers or reports BETWEEN 5 AND 19 PAGES	4 or less	829	51.0
	At least 5	794	48.9
Number of written papers or reports of FEWER THAN 5 PAGES	4 or less	665	40.9
	At least 5	958	59.0
Coursework emphasized: ANALYZING The basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components	Little	234	14.4
	Substantial	1390	85.6
Coursework emphasized: SYNTHESIZING and organizing ideas, information, or experiences into new, more complex interpretations and relationships	Little	413	25.4
	Substantial	1211	74.6
Coursework emphasized: MAKING JUDGMENTS about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions	Little	477	29.4
	Substantial	1146	70.6
Coursework emphasized: APPLYING theories or concepts to practical problems or in new situations	Little	342	21.1
	Substantial	1282	78.9
Worked harder than you thought you could to meet an instructor's standards or expectations	Not Often	634	39.0
	Often	990	61.0
Hours per 7-day week spent preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)	5 hours or less	245	15.1
	6 hours or more	1379	84.9
Institutional emphasis: Spending significant amounts of time studying and on academic work	Little	272	16.7
	Substantial	1352	83.3

N=1624

Appendix F

Frequencies and percentages of items within the active and collaborative learning (ACL) engagement benchmark

BENCHMARK 2: ACL

Items	Response	Frequency	Percent
Asked questions in class or contributed to class discussions	Not Often	716	44.1
	Often	907	55.8
Made a class presentation	Not Often	775	47.7
	Often	848	52.2
Worked with other students on projects DURING CLASS	Not Often	843	51.9
	Often	781	48.1
Worked with classmates OUTSIDE OF CLASS to prepare class assignments	Not Often	652	40.1
	Often	972	59.9
Tutored or taught other students (paid or voluntary)	Not Often	1175	72.4
	Often	448	27.6
Participated in a community-based project (e.g., service learning) as part of a regular course	Not Often	1383	85.2
	Often	240	14.8
Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	Not Often	668	41.1
	Often	956	58.9

N=1624

Appendix G

Frequencies and percentages of items within the student-faculty interaction (SFI) engagement benchmark

BENCHMARK 3: SFI

Items	Responses	Frequency	Percent
Discussed grades or assignments with an instructor	Not Often	813	50.1
	Often	811	49.9
Talked about career plans with a faculty member or advisor	Not Often	1017	62.6
	Often	606	37.3
Discussed ideas from your readings or classes with faculty members outside of class	Not Often	1161	71.5
	Often	463	28.5
Received prompt feedback from faculty on your academic performance (written or oral)	Not Often	630	38.8
	Often	994	61.2
Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	Not Often	1299	80.0
	Often	325	20.0
Work on a research project with a faculty member outside of course or program requirements	Not Done	1226	75.5
	Done	397	24.4

N=1624

Appendix H

Frequencies and percentages of items within the enriching educational experiences (EEE) engagement benchmark

BENCHMARK 4: EEE

Items	Responses	Frequency	Percent
Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	Not Often	739	45.5
	Often	885	54.5
Had serious conversations with students of a different race or ethnicity than your own	Not Often	672	41.4
	Often	951	58.6
Institutional emphasis: Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	Little	851	52.4
	Substantial	773	47.6
Hours per 7-day week spent participating in co-curricular activities (organizations, campus publications, student government, social fraternity or sorority, intercollegiate or intramural sports, etc.)	5 hours or less	1219	75.1
	6 hours or more	405	24.9
Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	Not Often	654	40.3
	Often	970	59.7
Practicum, internship, field experience, co-op experience, or clinical assignment	Not Done	962	59.2
	Done	660	40.6
Community service or volunteer work	Not Done	849	52.3
	Done	772	47.5
Participate in a learning community or some other formal program where groups of students take two or more classes together	Not Done	1285	79.1
	Done	337	20.8
Foreign (additional) language coursework	Not Done	783	48.2
	Done	841	51.8
Study abroad	Not Done	1170	72.0
	Done	449	27.6
Independent study or self-designed major	Not Done	1286	79.2
	Done	335	20.6
Culminating senior experience (capstone course, thesis, project, comprehensive exam, etc.)	Not Done	1154	71.1
	Done	465	28.6

N=1624

Appendix I

Frequencies and percentages of items within the supportive campus environment (SCE) engagement benchmark

BENCHMARK 5: SCE

Items	Responses	Frequency	Percent
Institutional emphasis: Providing the support you need to thrive socially	Little	1074	66.1
	Substantial	548	33.7
Institutional emphasis: Providing the support you need to help you succeed academically	Little	536	33.0
	Substantial	1088	67.0
Institutional emphasis: Helping you cope with your non-academic responsibilities (work, family, etc.)	Little	1154	71.1
	Substantial	469	28.9
Quality: Your relationships with other students	Unfriendly	378	23.3
	Friendly	1246	76.7
Quality: Your relationships with faculty members	Unavailable	380	23.4
	Available	1244	76.6
Quality: Your relationships with administrative personnel and offices	Unhelpful	699	43.0
	Helpful	925	57.0

N=1624

Appendix J

Frequencies and percentages for the dependent variables in a four point Likert scale

Variables	Responses	Frequencies	Percentages
Acquiring abroad and general education[ABE]	Very little	47	2.9
	Some	219	13.5
	Quite a bit	623	38.4
	Very much	735	45.3
Acquiring job or work related knowledge and skills[JWKS]	Very little	117	7.2
	Some	369	22.7
	Quite a bit	603	37.1
	Very much	535	32.9
Thinking critically and analytically [TCA]	Very little	36	2.2
	Some	204	12.6
	Quite a bit	644	39.7
	Very much	740	45.6
Working effectively with others	Very little	81	5.0
	Some	276	17.0
	Quite a bit	643	39.6
	Very much	624	38.4
Learning effectively on your own [LEOY]	Very little	90	5.5
	Some	305	18.8
	Quite a bit	653	40.2
	Very much	576	35.5
Understanding yourself [UY]	Very little	141	8.7
	Some	348	21.4
	Quite a bit	633	39.0
	Very much	502	30.9

N=1624

Appendix K

Bi-variate correlations between the dependent (engagement benchmarks) and independent (perceived outcomes) variables

		ABE	JWKS	TCA	WEO	LEOY	UY	LAC	ACL	SFI	EEE	SCE
ABE	Pearson Correlation	1.000										
JWKS	Pearson Correlation	.419**	1.000									
TCA	Pearson Correlation	.486**	.438**	1.000								
WEO	Pearson Correlation	.416**	.511**	.542**	1.000							
LEOY	Pearson Correlation	.363**	.328**	.450**	.441**	1.000						
UY	Pearson Correlation	.336**	.285**	.389**	.430**	.644**	1.000					
LAC	Pearson Correlation	.331**	.273**	.439**	.353**	.343**	.308**	1.000				
ACL	Pearson Correlation	.255**	.277**	.284**	.402**	.241**	.281**	.481**	1.000			
SFI	Pearson Correlation	.241**	.293**	.290**	.316**	.252**	.278**	.448**	.607**	1.000		
EEE	Pearson Correlation	.249**	.238**	.237**	.277**	.214**	.223**	.340**	.494**	.552**	1.000	
SCE	Pearson Correlation	.357**	.447**	.416**	.474**	.372**	.423**	.353**	.368**	.443**	.305**	1.000

**. Correlation is significant at the 0.01 level (2-tailed). N= 1624

Appendix L

Model Summary: Research Question 1
Extent to which Engagement Predicts Students' Acquisition of a Broad and General Education

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.159[a]	.025	.022	.789	.025	6.898	6	1594	.000
2	.162[b]	.026	.022	.789	.001	1.638	1	1593	.201
3	.443[c]	.196	.190	.718	.170	67.086	5	1588	.000

a. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect

b. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION

c. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION, Academic Challenge (unadjusted) - raw, individual-level score, Enriching Educational Experiences - raw, individual-level score, Supportive Campus Environment - raw, individual-level score, Active and Collaborative Learning - raw, individual-level score, Student-Faculty Interaction - raw, individual-level score

Appendix M

Model Summary: Research Question 2
Extent to which Engagement Predicts on Job or Work-Related Knowledge and Skills

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	Change Statistics: F Change	Change Statistics: df1	Change Statistics: df2	Change Statistics: Sig. F Change
1	.163[a]	.027	.023	.909	.027	7.275	6	1594	.000
2	.168[b]	.028	.024	.909	.002	2.472	1	1593	.116
3	.476[c]	.227	.221	.812	.199	81.615	5	1588	.000

a. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect

b. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION

c. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION, Academic Challenge (unadjusted) - raw, individual-level score, Enriching Educational Experiences - raw, individual-level score, Supportive Campus Environment - raw, individual-level score, Active and Collaborative Learning - raw, individual-level score, Student-Faculty Interaction - raw, individual-level score

Appendix N

Model Summary: Research Question 3
Extent to which Engagement Predicts Students' Ability to Think Critically and Academically

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	Change Statistics: F Change	Change Statistics: df1	Change Statistics: df2	Change Statistics: Sig. F Change
1	.173[a]	.030	.026	.758	.030	8.172	6	1594	.000
2	.174[b]	.030	.026	.758	.000	.774	1	1593	.379
3	.528[c]	.279	.273	.655	.249	109.478	5	1588	.000

a. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect

b. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION

c. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION, Academic Challenge (unadjusted) - raw, individual-level score, Enriching Educational Experiences - raw, individual-level score, Supportive Campus Environment - raw, individual-level score, Active and Collaborative Learning - raw, individual-level score, Student-Faculty Interaction - raw, individual-level score

Appendix O

Model Summary: Research Question 4
Extent to which Engagement Predicts Students' Ability to Work Effectively With Others

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.087[a]	.008	.004	.858	.008	2.045	6	1594	.057
2	.091[b]	.008	.004	.858	.001	1.107	1	1593	.293
3	.551[c]	.304	.299	.720	.296	135.002	5	1588	.000

a. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect

b. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION

c. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION, Academic Challenge (unadjusted) - raw, individual-level score, Enriching Educational Experiences - raw, individual-level score, Supportive Campus Environment - raw, individual-level score, Active and Collaborative Learning - raw, individual-level score, Student-Faculty Interaction - raw, individual-level score

Appendix P

Model Summary: Research Question 5
Extent to which Engagement Predicts Students' Ability to Learn Effectively on Their Own

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.131[a]	.017	.013	.867	.017	4.634	6	1594	.000
2	.132[b]	.017	.013	.867	.000	.319	1	1593	.572
3	.440[c]	.194	.188	.786	.176	69.514	5	1588	.000

a. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect

b. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION

c. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION, Academic Challenge (unadjusted) - raw, individual-level score, Enriching Educational Experiences - raw, individual-level score, Supportive Campus Environment - raw, individual-level score, Active and Collaborative Learning - raw, individual-level score, Student-Faculty Interaction - raw, individual-level score

Appendix Q

Model Summary: Research Question 6
Extent to which Engagement Predicts Students' Ability to Understand Themselves

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.129[a]	.017	.013	.921	.017	4.499	6	1594	.000
2	.129[b]	.017	.012	.921	.000	.091	1	1593	.763
3	.465[c]	.216	.210	.824	.200	80.860	5	1588	.000

a. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect

b. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION

c. Predictors: (Constant), asianEffect, What have most of your grades been up to now at this institution?, Institution reported: Gender, otherraceEffect, hispanicEffect, blackEffect, IPEDS04: PRIVATE/PUBLIC DESIGNATION, Academic Challenge (unadjusted) - raw, individual-level score, Enriching Educational Experiences - raw, individual-level score, Supportive Campus Environment - raw, individual-level score, Active and Collaborative Learning - raw, individual-level score, Student-Faculty Interaction - raw, individual-level score