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**UNDERGRADUATE STUDENTS' PERCEPTIONS OF GENERAL
EDUCATION: A MIXED METHODS APPROACH**

by
Rihab Ezzat Saadeddine

A Dissertation

Submitted to the
Department of Educational Leadership
College of Education
In partial fulfillment of the requirement
For the degree of
Doctor of Education
at
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Dissertation Chair: Ali Houshmand, Ph. D

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Dedication

I dedicate this dissertation to my husband, Issam, and to my son, Iyad.

Thank you for your love, patience, and support!

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I wish to extend my heartfelt thanks and gratitude to my dissertation committee: Dr. Ali Houshmand, Dr. Ane Johnson, Dr. Mira Lalovic-Hand, and Dr. Roberta Harvey. I appreciate your guidance, support, and valued insight throughout this journey.

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Abstract

Rihab Ezzat Saadeddine
UNDERGRADUATE STUDENTS' PERCEPTIONS OF GENERAL
EDUCATION: A MIXED METHODS APPROACH
2013

Ali Houshmand, Ph.D.
Doctorate in Educational Leadership

Higher education institutions should offer students an enriching learning experience that fosters their academic competencies, professional skills, civic responsibility, and global preparedness (AACTE, 2010; AAC&U, 2007). Colleges and universities have been criticized for not adequately preparing students academically and professionally. They are urged to assess and improve their general education programs to provide quality education and meet the needs of 21st century students (AACTE, 2010; AAC&U, 2007; Boning, 2007; Rhodes, 2010). This study utilized a sequential explanatory mixed methods research design to indirectly assess the general education program through students' perceptions. It was designed to explore the differences in perceptions among undergraduate students of the general education program and their undergraduate learning experiences. My findings indicated that students underscored the importance of clear communication, good teaching, high quality interactions, application of knowledge, and rigorous curriculum in their undergraduate experience. The university could explore effective practices that allow students to apply what they learned in real life applications. It could better articulate the general education goals and learning outcomes to its students. Furthermore, it could provide a supportive system for transfer students and work with community colleges to facilitate credit transfer. Finally, the university should

integrate the specialized, professional, and general education programs into students' undergraduate experience to better prepare them for life, citizenship, and career.

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Chapter I

Introduction

Higher education institutions are expected to strengthen students' essential skills, competencies, and knowledge through a strong core curricula called general education or liberal education (Allen, 2006; Humphreys, 2006; Menand, 2010; Van Note Chism & Banta, 2007). However, in the last decade, many reports, such as those produced by the Association of American Colleges and Universities (AAC&U) (2007), the American Management Association (AMA) (2010), the Partnership for 21st Century Skills (2008), and Hart Research Associates (2009) condemn colleges and universities for producing students with mediocre academic preparation and criticize them for not fulfilling the needs of students and employers. Every higher education institution is urged to continuously assess its general education program to identify its strengths and weaknesses and make required improvements. It should also restructure its general education program to meet the needs of 21st century students and to adjust to external changes in technology, economy, demography, and globalization (Allen, 2006; AACTE, 2010; AAC&U, 2006, 2007, 2009a; Partnership for 21st Century Skills, 2008).

Assessments allow colleges and universities to develop a culture of evidence, address accountability, and show commitment to general education programs and essential learning outcomes (AAC&U, 2006; Allen, 2006; Humphreys, 2006). They also provide colleges and universities with valuable information to design a coherent and fruitful undergraduate experience and strengthen students' skills (Allen, 2006; AAC&U, 2006; Banta, 1991). One major measure, direct assessment, evaluates students' work to

find out whether they have achieved specific learning outcomes. It usually includes such things as standardized or locally developed tests, portfolios, and embedded course assignments (Allen, 2006). Indirect assessment through surveys and interviews complements direct assessment (Allen, 2006; Banta, 1991; Harper & Kuh, 2007; Kelsch et al., 2004; Van Note Chism & Banta, 2007). It provides a better understanding of perceptions towards an institution's performance and its unique learning outcomes that might not be captured through direct assessment methods such as standardized tests (Allen, 2006; Banta, 1991; Harper & Kuh, 2007; Humphreys, 2006; Kelsch et al., 2004; Van Note Chism & Banta, 2007). Indirect assessment also enables the institution to find out if the purpose and goals of the general education programs are well articulated to the students and the university community (Arun & Roksa, 2011; Menand, 2010).

General Education and its Learning Outcomes

General education is the part of the undergraduate experience that exposes every undergraduate student to an essential and broad education. General education is "the core of the undergraduate curriculum for all students, regardless of major. It contributes to the distinctiveness of college-educated adults and guarantees that all college graduates have a broad-balanced education" (Allen, 2006, p. 1). Reich and Head (2010) describe general education as "part of the curriculum that all students must meet, its visibility and positioning makes it a significant trademark of the institution" (p. 69). Similarly, Rhodes (2010) defines general education as liberal learning that encompasses a set of practical and intellectual skills and abilities, essential knowledge, teamwork, and social and individual responsibility in which all undergraduate students engage.

General education should provide an intellectual environment that positively impacts student learning, values, and attitudes (AAC&U, 2007; Reich & Head, 2010). It should not only provide students with skills and knowledge to succeed in their academic endeavor, but it should also prepare them for life, work, and active citizenship (Allen, 2006; AACTE, 2010; AMA, 2010; AAC&U, 2007; Boning, 2007; Humphreys, 2006; Menand, 2010; Partnership for 21st Century Skills, 2010; Rhodes 2010). The Association of American Colleges and Universities (2007) explains that general education should empower students with knowledge and transferable skills, underscore ethics, values, and global learning, and foster active citizenship. A coherent general education program should expose students to advanced and integrative competencies that allow them to become active and intentional learners and better global citizens (AACTE, 2010; AMA, 2010; AAC&U, 2009a; Hart Research Associates, 2009; Partnership for 21st Century Skills, 2010).

Unfortunately, in many cases, the general education purpose and goals are not well articulated to students, parents, and the university community (Arun & Roksa, 2011; Humphreys, 2006; Menand, 2010). Many students are primarily focused on their discipline and are less interested in the general education program because they believe it is not relevant to their major and therefore their future profession (AACTE, 2010; AMA, 2010; AAC&U, 2009a). Humphreys (2006), Menand (2010), and Arun and Roksa (2011) note that many undergraduate students do not have a clear understanding of the nature and purpose of the general education program. As a result, students might develop negative perceptions and misconceptions about the role of general education and its learning outcomes. Some students believe that liberal education is politically connected

to the left wing; others believe that it is only related to the study of humanities and arts and not focused on technical and career competencies (Humphreys, 2006; Menand, 2010). Finally, some students perceive that general education courses are just something they have to "take care of" and "get out of the way" to focus on their majors (Johnson, 2010; Menand, 2010). Consequently, institutions are urged to systematically assess general education to better serve their students and enhance their learning. Indirect assessment provides insight on students' perceptions and opinions that "richly supplement" information generated through direct assessment (Allen, 2006). Indirect assessment through surveys, interviews, and focus groups can generate information about students' satisfaction with the general education program and its learning outcomes, perceptions of its quality and usefulness, and their recommendations for improvement (Allen, 2006).

Recently, there have been many studies and reports that depict an emerging consensus of the 21st century knowledge and skills that all American undergraduate students should attain by the time they graduate from college (Humphreys, 2006; Rhodes, 2010). Liberal Education and America's Promise (LEAP), a new campaign initiated by AAC&U, lists four essential learning outcomes for all undergraduate students: (a) human cultures and the natural and physical world; (b) intellectual and practical skills; (c) individual and social responsibility; and (d) integrative learning (AAC&U, 2007). Similarly, the American Association of Colleges for Teacher Education (AACTE) (2010), the American Management Association (AMA) (2010), and the Partnership for 21st Century Skills (2008) note that all undergraduate students should develop competencies such as creativity, innovation, entrepreneurship, self-direction, critical

thinking and inquiry, problem solving, communication and collaboration, technology and information literacy, and civic responsibility. Higher education institutions have always underscored the importance of essential academic knowledge in undergraduate education. However, it was not until the last decade that there has been a growing interest in academic, technical, and career skills and competencies (AMA, 2010; Partnership for 21st Century Skills, 2010).

Academic and Career Preparation

There has been a call to view the general education program as a tool to develop students' academic abilities, career skills, civic responsibility, social understanding, and global preparedness (AACTE, 2010; AAC&U, 2007; Boning, 2007; Hart Research Associates, 2009; Partnership for 21st Century Skills, 2008; Wehlburg, 2010). Global preparedness is becoming increasingly important, especially since American graduates are going to work in this globally interconnected world (AACTE, 2010; AAC&U, 2007; Partnership for 21st Century Skills, 2008; Stearns, 2010). To be prepared, they should be provided with language and global training, as well as knowledge about different parts of the world (Stearns, 2010). However, many studies report that undergraduate students are not well prepared to function in the globalized world (AACTE, 2010; AAC&U, 2007; Partnership for 21st Century Skills, 2008). The AAC&U (2007) reports that fewer than 10% are adequately prepared to function in the global world. Hence, the Association of American Colleges and Universities (AAC&U)(2007), the American Association of Colleges for Teacher Education (AACTE) (2010), Hart Research Associates (2009), and the Partnership for 21st Century Skills (2008) urge education institutions to systematically

assess their general education programs to ensure that they are fostering core competencies that develop students' global, social, career, and academic preparedness.

Colleges and universities are expected to provide quality education to all students. However, many students are not exposed to a rigorous curriculum and are not academically prepared (AMA, 2010; Arun & Roksa, 2011; AAC&U, 2007; Boning, 2007; Partnership for 21st Century Skills, 2008). Derek Bok, former president of Harvard University, notes that colleges and universities fail to foster strong essential academic and intellectual skills, civic engagement, and ethical learning (as cited in AAC&U, 2007). In 2011, a study conducted by Arun and Roksa reported that 36% of 2,000 undergraduate students in 24 institutions did not show significant improvement in learning during their undergraduate experience. Similarly, the AAC&U (2009a) notes that 77% of senior students are not proficient in critical thinking.

During the last 10 years, educators have also been trying to close the international achievement gap between American students who perform at lower levels than international students in other competitive countries (Partnership for 21st Century Skills, 2008). Although American students score above the international average in science, math, and problem-solving, they are doing poorly on international assessments, such as the Programme for International Student Assessment (PISA), in comparison to students in other countries (AACTE, 2010; Partnership for 21st Century Skills, 2008). Hanushek, Jamison, Jamison, and Woessmann (2008) explain that this is detrimental to our economic growth because cognitive skills play an important role in explaining the difference in economic development among countries. These cognitive skills are statistically significantly related to economic growth. As a result, countries that integrate

21st century skills into their curricula have greater economic growth than those that do not (Hanushek et al., 2008).

The Association of American Colleges and Universities (AAC&U) (2007) argues that liberal education should be focused not only on the studies of arts and sciences, but should also underscore vocational skills and competencies. Similarly, the Partnership for 21st Century Skills (2008) states, "all Americans need 21st century skills that will increase their marketability, employability, and readiness for citizenship" (p. 12). This is crucial, especially since business and industry leaders complain that college graduates have mediocre critical thinking and communication skills (AACTE, 2010; AMA, 2010; AAC&U, 2007, 2009a; Boning, 2007). The Partnership for 21st Century Skills (2010) notes that 31% of employers do not hire college graduates because they do not have the skills that the employers are looking for. The American Management Association (AMA) (2010) listed four transferable major skills, "the four Cs," that have been described by employers as the most important competencies to prepare the 21st century workforce. The four Cs are: critical thinking and problem solving, effective communication, collaboration and team building, and creativity and innovation (AMA, 2010). These transferable skills should be integrated into the general education programs so that students are better prepared for their future professions. This is significant especially since graduates are most likely to change their careers several times in their life span. The AAC&U (2007) notes that on average, Americans take on 10 different jobs between the ages of 18 and 40. Consequently, higher education institutions should systematically assess and modify their general education programs to ensure that they are providing

students with the skills necessary to keep up with the changing world and to achieve their long-term professional goals (Boning, 2007).

A Call for Restructuring and Assessing General Education

Colleges and universities have been encouraged to reassess and restructure their undergraduate experience to address the needs of their student populations and keep up with changes in technology, economy, demography, and globalization (AACTE, 2010; AAC&U, 2007, 2009a; Partnership for 21st Century Skills, 2008). This is critical, as an unprepared workforce will slow the economy and negatively impact U.S. global competitiveness (AACTE, 2010; Partnership for 21st Century Skills, 2008). The U.S. Census Bureau (2008) reported that by 2042, historically under-represented populations will constitute the majority of the United States population (as cited in Partnership for 21st Century Skills, 2008). In addition, colleges and universities will be responsible for preparing an educated and skilled workforce to replace millions of baby-boomers who are going to be retiring (Partnership for 21st Century Skills, 2010). Projected demographic changes might post a big challenge for educators to provide good education, improve performance, increase retention, and close the achievement gap (Partnership for 21st Century Skills, 2008).

In the past few decades, knowledge, information, and innovation have become the building blocks for a service economy that has replaced the industrial economy (AACTE, 2010; AMA, 2010; Partnership for 21st Century Skills, 2008). In the United States, 17 million service jobs were created while 3 million industrial jobs were lost between 1995 and 2005. As a result, the United States' new economy is increasingly dependent on the knowledge, skills, and innovation of its future citizens and workforce. The AACTE

(2010), the AMA (2010), and the Partnership for 21st Century Skills (2008) state that highly skilled workers who are creative and innovative and can communicate effectively, collaborate with others, respond to complex problems, and manage information are important for the United States' advanced economy and global competitiveness. They explain that to produce skilled workers, colleges and universities should expose their students to learning experiences that prepare them for their future professions and foster 21st century essential learning skills.

In addition, there has been a call to integrate general education with academic curricula to improve students' undergraduate learning experience and increase retention (AACTE, 2010; AAC&U, 2007; Wehlburg, 2010). A coherent general education model will enable students to integrate knowledge within disciplines and connect it to real life situations (Allen, 2006; AACTE, 2010; AAC&U, 2007; Boning, 2007; Rhodes, 2010). Many colleges and universities have assessed and restructured their general education program to promote certain learning outcomes, increase its coherence and decrease options, develop students' skills and involve them in undergraduate research, develop learning communities, and/or engage students through active learning (Boning, 2007).

Although liberal arts and sciences education is an important piece of the 21st century liberal education, including a number of these courses within the general education framework is not enough (AAC&U, 2007). The undergraduate educational experience for many college students is fragmented and disjointed. Students take courses that are offered by different programs and even in some cases by more than one institution. Many end up unable to build new connections among courses and programs.

The AAC&U (2007) notes that many students fail to integrate skills and competencies across disciplines and apply them to real life situations. Rhodes (2010) explains:

The traditional approach to general education with an emphasis on exposure to a menu of knowledge no longer suffices. Graduates need to be able to integrate their learning, apply it in real-world settings and to complex problems, and use it to address complex and unscripted problems. (p.13)

General education competencies should be integrated with other disciplines to provide students with resources to improve their academic, professional, and personal lives. Laird, Niskode-Dossett and Kuh (2009) report that essential learning outcomes such as individual and social responsibilities are not integrated throughout curricula. Practical competencies such as collaboration, problem solving, technology skills, and work related skills are emphasized more in non-general education courses. Laird et al. (2009) urge educators to design their curriculum to ensure that all their undergraduate students are exposed to essential learning outcomes. In addition, they note that educators should also increase their efforts to assess their general education programs to promote essential learning outcomes.

Purpose of the Study

The purpose of this study is to indirectly assess, through students' perceptions, the general education program at Rowan University, a four-year public university in New Jersey. The study (a) investigates the differences in perceptions towards the general education program at Rowan University among undergraduate student subgroups; (b) explores the differences in self-perceptions among undergraduate student subgroups towards their undergraduate experience and learning; and (c) provides an in-depth understanding and a holistic picture of students' perceptions towards the general education program and their undergraduate learning experiences.

Research Questions

This study addresses the following research questions that inform the research design and methods of this research study (Tashakkori & Creswell, 2007):

1. What are the differences in perceptions towards the general education program at Rowan University among undergraduate student subgroups?
2. What are the differences in self-perceptions among undergraduate student subgroups towards their undergraduate experience and learning?
3. In what ways do the qualitative data generated from the open-ended survey question and the focus groups reporting students' perceptions substantiate the quantitative results from the survey?

Significance of the Study

The findings of this study provide valuable insights to guide research, practice, and educational policy.

Research. Mixed methods designs have been rarely used in studying undergraduate students' experiences in relation to learning outcomes (Seifert, Goodman, King, & Magnolda, 2010). Most studies use either quantitative or qualitative methods. As a result, this mixed methods research can provide a valuable contribution to the general education assessment literature by indirectly assessing students' learning based on how they make meaning of their undergraduate experience (Allen, 2006; Creswell, 2009; Creswell & Tashakkori, 2008). Furthermore, most of the studies that utilize indirect assessment methods explore the perceptions of first-year undergraduate and/or senior students. This study also adds to the general education literature by exploring the

perceptions of undergraduate students at a four-year public institution. It investigates divergences in perceptions towards general education among different student subgroups.

Practice. The study utilizes an indirect assessment of the general education program and its learning outcomes by exploring the perceptions of undergraduate students. The study is significant for several reasons. First, although perceptions are subjective, they are important because they provide insight about students' decision making and experiences, as well as the factors that influence their personal learning journey (Allen, 2006; Shertzer & Schuh, 2004). Furthermore, students' perceptions and beliefs can empower or constrain them from becoming involved in learning opportunities (Shertzer & Schuh, 2004). Students' negative perceptions of general education can become constraining beliefs that can disempower them, disengage them in learning opportunities, and make them passive learners (Shertzer & Schuh, 2004). As a result, a rich understanding of students' perceptions allows educators to restructure their general education programs to better address their students' needs.

Second, the study emphasizes not only what is perceived to not be working but also what is working (Allen, 2006). The results from this study will increase awareness of the purpose and goals of general education within the university community, contribute to the development of a culture of evidence, respond to calls for accountability, and show commitment to general education (Allen, 2006; Arun & Roksa, 2011; AAC&U, 2006; Humphreys, 2006; Menand, 2010). It also provides valuable information to improve the general education program and its learning outcomes and to aid in developing learning opportunities that can positively impact students' perceptions and their undergraduate experience.

Third, there has been a call for continuous assessment and restructuring of general education at higher education institutions to meet the needs of 21st century students and to keep up with changes in technology, demography, economy, and globalization (AACTE, 2010; AAC&U, 2007, 2009a; Partnership for 21st Century Skills, 2008). Many higher education institutions are experiencing increases in student diversity in areas of ethnicity, age, and professional experiences. Understanding student perceptions is particularly useful for Rowan University since its student demography has changed in the last decade. Rowan University expanded its campus and program offerings to serve a more diverse student population. In 2007, the university founded the College of Graduate and Continuing Education that offers hybrid and online programs to address the vast range of non-traditional student needs. In addition, a new Medical School opened in the fall of 2012 that had an impact on the university community. Consequently, assessing the general education program provides the university with helpful information to modify its general education program to better address the needs of its diverse student body.

Educational policy. Finally, the findings from this study might shed light on certain issues related to general education policy and regulations. It might provide recommendations to initiate new general education policy that might improve students' learning outcomes and increase their satisfaction with the general education experience. A new policy might require faculty members to document on their course syllabi the specific general education learning goals that individual courses are designed to address. Furthermore, recommendations might call for changes in the general education model and its learning outcomes, and/or change in requirements and number of credit hours to improve undergraduate experience.

Limitations of the Study

As with all research studies, there are some limitations regarding this study that need to be acknowledged and addressed. First, the findings for this study are limited to the Rowan University undergraduate student population. Generalizing the present study findings to undergraduate students at other institutions should be done with caution. The students who served as participants in this study might be quite different from undergraduate students at other higher education institutions (McMillan, 2007). In addition, the study is context-dependent because it is confined to the general education program at one state supported public university in the state of New Jersey (McMillan, 2007; Creswell & Plano Clark, 2011). The results of this study may not be generalizable and may not be applicable to some other universities. Every institution has its own unique general education program that constitutes its trademark (Allen, 2006; Menand, 2010; Reich & Head, 2010; Wehlburg, 2010).

The second limitation is related to the methodologies used to collect data. Although surveys are commonly used in indirect assessment of general education, students who have strong positive or negative feelings are more likely to participate in the survey. As a result, perceptions might appear more divided than they are in reality (Allen, 2006). To minimize this limitation, I targeted the whole undergraduate student population. In addition, it is very important that there is no misinterpretation of information that is collected through survey and interviews. Hence in the survey, I asked students to provide importance ratings related to specific learning outcomes to make sure that students value what they have learned and mastered (Allen, 2006). During interviews, I allowed participants to ask for clarification if they did not understand a

question. To ensure validity, I also paraphrased to verify that I understood participants' responses (Allen, 2006). Finally, I reduced the uncertainty of data interpretation by utilizing multiple methods to study the research problem (Caracelli & Greene, 1993; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009).

The third limitation is related to the study of students' perceptions. Students' recollection of their general education experience may be faulty or inaccurate and may be affected by other factors that are not related to the general education experience (Allen, 2006). This often decreases reliability of information provided by the participants. However, these perceptions are subjective and might provide educators with insight about student decision-making (Allen, 2006; Shertzer & Schuh, 2004). Finally, the research study findings might be affected by my personal values, beliefs, and background, as well as potential bias.

Organization of the Study

The study utilizes the manuscript option dissertation. Chapter I introduces the study and provides background information on the research problem. It stresses the importance of continuous assessment and restructuring of the general education programs. It describes the purpose of the study, identifies three research questions, and discusses the significance and limitations of the study. Chapter II reviews the literature to provide the reader with a better understanding of general education and its essential learning outcomes. It also sheds light on general education models, issues, and the factors that impact their structure. Most importantly it provides a rationale for systemic assessment of general education. Chapter III discusses the methodology that was designed to address the three research questions. Chapter IV presents a report of data and

the results of the survey and focus groups that were obtained using the Predictive Analytics SoftWare® (PASW) and content analysis respectively. In this section, data are provided to answer the three research questions that were presented in the introduction of this research study.

Chapter V provides a summary of the research, discussion of the findings, and conclusion. In addition, the chapter discusses recommendations for future research, practice, and policy.

Chapter II

Literature Review

General Education and 21st Century Skills

General education is the liberal learning that encompasses a set of competencies in which all undergraduate students should engage (AAC&U, 2007; Rhodes, 2010). It provides an intellectual environment that positively impacts student learning, values, and attitudes (AAC&U, 2007; Reich & Head, 2010). General education is a "coherent framework for learning that intentionally fosters, across multiple fields" (AAC&U, 2007, p. 45) a wide range of essential skills, knowledge, and competencies to prepare students for college, career, and the globally interconnected world (Allen, 2006; AACTE, 2010; AAC&U, 2010; Boning, 2007; Partnership for 21st Century Skills, 2010; Rhodes, 2010). An effective general education program should cultivate high level practical and intellectual skills and abilities such as writing and speaking abilities and quantitative literacy, critical thinking, and problem solving abilities (AAC&U, 2007; Boning, 2007; Rhodes, 2010; Wehlburg, 2010). It should also promote social and individual responsibility; ethical decision making abilities; intercultural understandings and competencies; and civic engagement and lifelong learning (AACTE, 2010; AAC&U, 2007; Rhodes, 2010).

In the last decade, there have been big changes in technology, innovation, business, and the global economy that have greatly impacted the nature of work (AACTE, 2010; AMA, 2010; Partnership for 21st Century Skills, 2008). Colleges and universities have had to respond to these changes by fostering essential skills and knowledge, such as creativity, self-direction, critical thinking, communication,

technology and information literacy, collaboration, inquiry, and innovation (AACTE, 2010; AMA, 2010; Hart Research Associates, 2009; Johnson, Ratcliffe, & Gaff, 2004). Many studies report that there is a consensus on the 21st century competencies that all undergraduate students should foster during their undergraduate experience (Humphreys, 2006; Rhodes, 2010). Humphreys (2006) explains that “this consensus about essential learning outcomes underscores the value of a liberal education for all college students, regardless of their background or choice of field” (p. 1). Although American higher education institutions are very diverse, they serve a common purpose in that they prepare their students for the complex and ever changing world, citizenship, and future career (AAC&U, 2007).

LEAP initiative essential learning outcomes. Liberal Education and America’s Promise (LEAP) aims to strengthen the role of liberal education in higher education institutions. It also strives to improve college access and increase retention for all students, especially for minority students and students from low socio-economic backgrounds (AAC&U, 2007). The LEAP project identifies four essential competencies that should be fostered during students’ undergraduate experiences: human cultures and the natural and physical world; intellectual and practical skills; individual and social responsibility; and integrative learning. The AAC&U (2007) explains that students in the 21st century should have a solid knowledge of human cultures and the natural and physical world through the study of sciences, mathematics, social sciences, humanities, histories, languages, and arts. Students should improve their intellectual and practical skills through quantitative and information literacy, oral and written communication, teamwork and problem solving, and inquiry, critical, and creative thinking. Students

should be lifelong learners who demonstrate individual and social responsibilities through civic engagement, ethical behavior, and intercultural knowledge. Finally, LEAP reported that students should demonstrate the ability to integrate learning by synthesizing knowledge across general and discipline curricula, and apply knowledge and skills to new situations and environments (AAC&U, 2007).

The AAC&U is not only concerned with learning outcomes at four-year institutions. In 2010, as part of the LEAP Project, it initiated a new project called the Roadmap Project that aims to increase students' success at community colleges. This project will help community colleges design academic and supporting programs that are tied to specific learning outcomes. Students will be educated about these specific learning outcomes and provided with a roadmap that will allow them to become engaged, active, and intentional learners (AAC&U, 2010).

AACTE 21st century skills and knowledge. The American Association of Colleges for Teacher Education (AACTE) (2010) divides 21st century skills and knowledge into several categories. The first category includes learning and innovation skills, such as critical thinking and problem solving, communication, collaboration, and creativity and innovation. The second category includes information, media, and technology skills and literacy. AACTE (2010) encourages universities to create technology-enabled learning communities to enhance students' learning experiences. The learning environment should not be limited within the physical structure of the classrooms. Technology tools should be utilized to expand the boundaries of the learning environment (AACTE, 2010). The third category involves life and career skills, such as flexibility and adaptability, initiative and self-direction, social and cross-cultural skills,

productivity and accountability, and leadership and responsibility. AACTE (2010) emphasizes that general education programs should develop strong critical thinking and problem solving skills to enable students to “effectively analyze and evaluate evidence, arguments, claims and beliefs; solve different kinds of non-familiar problems in both conventional and innovative ways” (p. 9). Programs should also emphasize strong oral and written communication abilities to enable students to effectively articulate their thoughts and ideas in different contexts. Collaboration, creativity, and innovation are other outcomes that were underscored by AACTE. AACTE (2010) defines collaboration as “ability to work effectively and respectfully with diverse teams” and creativity and innovation as the “use of a wide range of idea creation techniques to create new and worthwhile ideas” (p. 9). Finally, AACTE notes that undergraduate students should develop strong information, communication, and technology (ICT) literacy by using “technology as a tool to research, organize, evaluate, and communicate information” (AACTE, 2010, p. 10).

Other liberal education learning outcomes. The Wabash National Study of Liberal Arts Education was initiated in 2006 by the Center of Inquiry at Wabash College. The study examines educational factors and experiences that impact liberal education in 49 higher education institutions across the nation. It focuses on seven specific liberal education learning outcomes such as critical thinking, the need for cognition, interest and attitudes about diversity, leadership, moral reasoning, and well being (Center of Inquiry in the Liberal Arts at Wabash College, 2009). Similarly, the Lumina Foundation for Education has recently designed a framework, the Degree Qualifications Profile, which lists the essential knowledge and skills that graduates should know. This framework

underscores five areas of learning: broad integrative knowledge, specialized knowledge, intellectual skills, applied learning, and civic engagement (Hebel, 2011). Finally, Indiana University-Purdue University Indianapolis (IUPUI) has defined six principles that integrate general education and specialized majors' learning outcomes as well as undergraduate learning experience (AAC&U, 2006). The IUPUI learning outcomes are: communication and quantitative skills; critical thinking; intellectual depth, breadth, and adaptation; integration and application of knowledge; understanding society and culture; and understanding values and ethics (AAC&U, 2006). Students are educated about these learning outcomes throughout their undergraduate experience.

Assessment of General Education

Systemic assessment should guide teaching and academic advancement, as well as provide a true insight to student learning (AAC&U, AASCU, APLU, 2010; Rhodes, 2010). Colleges and universities are encouraged to use assessment data to improve the institution and students' experiences and enhance learning outcomes (Allen, 2006; Harper & Kuh, 2007; Van Note Chism & Banta, 2007). Assessment results should be utilized to enhance curricular design and teaching practices (AAC&U, 2006). To have a valuable assessment system, educators should utilize different assessment tools to measure student learning outcomes. Assessment data can be quantitative or qualitative. Exam scores and GPA are examples of quantitative or numerical data. On the other hand, data obtained from a focus group, an interview, or document analysis are examples of qualitative data. A scoring rubric combines both qualitative and quantitative assessment (Allen, 2006). The Association of American Colleges and Universities (AAC&U, 2009b) emphasizes

the importance of using multiple assessments to better guide improvements in teaching and learning.

Many institutions assess their general education program and its learning outcomes through direct and/or indirect assessment methods (Allen, 2006; Banta, 1991; Harper & Kuh, 2007; Galle & Galle, 2010; Kelsch et al., 2004; Van Note Chism & Banta, 2007). Direct assessment "involves examining student demonstrations of the extent of their learning" (Allen, 2006, p. 15). Direct formative and summative assessments are commonly used in colleges and universities to assess general education outcomes. Formative assessments evaluate students' learning outcomes while they are still in the program. On the other hand, summative assessments evaluate their learning outcomes at the end of their program (Allen, 2006; AAC&U, 2006). Direct assessment tools, such as standardized and locally developed tests, portfolios, and embedded course assignments, are used to evaluate students' work to find out if they have mastered essential learning outcomes (Allen, 2006). Standardized tests allow researchers to compare results between different groups. However, many standardized tests are in multiple-choice formats and thus they do not provide in-depth assessments of students' skills and competencies. They also might not target learning outcomes that are underscored at a specific institution and scores might be too broad (Allen, 2006; Kelsch et al., 2004). On the other hand, embedded assessments are authentic assessments because they assess students' performances on specifically defined learning outcomes (Allen, 2006). Direct assessment provides primary information, while indirect assessment provides supplementary evidence.

Higher education institutions utilize indirect assessment tools to assess their general education programs (Van Note Chism & Banta, 2007). Indirect assessment uses opinions, views, attitudes, and perceptions to assess specific outcomes (Allen, 2006). Although perceptions are subjective and might provide inaccurate information, they are important because they provide insight about student decision-making (Allen, 2006). Indirect assessment through students' perceptions provides rich descriptions and develops better understandings of students' educational experiences. It describes the context and explains patterns that emerge during institutional assessment (Allen, 2006; Harper & Kuh, 2007; Van Note Chism & Banta, 2007). Indirect assessment complements the direct assessment by exploring students' perceptions through surveys and interviews (Allen, 2006; Banta, 1991; Harper & Kuh, 2007; Kelsch et al., 2004; Van Note Chism & Banta, 2007). Indirect assessment provides a better understanding of the institution's overall performance and the unique learning outcomes that might not be captured through direct assessment methods such as standardized tests (Allen, 2006; Banta, 1991). Liberal Education and America's Promise (LEAP) encourages colleges and universities to regularly survey students about their understanding of the curriculum and the learning goals that the institutions wanted to foster (AAC&U, 2006).

Indirect assessment of general education is very crucial for the continuous improvement of student learning to keep up with changes in technology, demography, economy, and globalization (Allen, 2006; AACTE, 2010; AAC&U, 2007, 2009a; Banta, 1991; Harper & Kuh, 2007; Van Note Chism & Banta, 2007). Many colleges and universities indirectly assess their general education program through investigating students' perceptions. For example, the University of North Dakota conducted a

qualitative longitudinal study to better understand students' perceptions of the general education program and its goals (Hawthorne, Kelsch, & Steen, 2010; Kelsch et al., 2004). The assessment team noted that this was the most appropriate way to measure students' learning around all disciplines, especially since students' learning also occurs in major courses and in co-curricular activities (Hawthorne et al., 2010). One hundred twenty students were randomly selected and interviewed each semester during their undergraduate educational experience to explore their perceptions towards general education. These interviews provided information about when, where, how, and what students learned (Hawthorne et al., 2010). The study also collected portfolios and projects from senior students to directly assess specific learning outcomes (Hawthorne et al.). The study also surveyed different departments and worked with the registrar to gather information about course selection. The study reported that students perceived general education courses as providing them with content knowledge. In addition, students noted that most of their learning was linked to courses outside the general education program (Hawthorne et al., 2010). The university utilized assessment data to redesign its general education program to integrate the general education goals into the specialized majors (Hawthorne et al.).

Other universities such as Harvard University, University of Washington, and Louisiana State University conducted similar studies to better understand student experiences of general education from their subjective point of view (Kelsch et al., 2004). Similarly, Kean University and Lehman College of the University of New York directly assessed students' learning outcomes and complemented their data by exploring students' perceptions through surveys (Banta, 1991). The AAC&U also utilized a survey as an

indirect assessment tool. The AAC&U designed the Degrees of Preparation Survey to systematically and comprehensively measure student growth between freshman and senior students. It explores student preparation in three domains: civic engagement, global community, and workforce (AAC&U, AASCU, APLU, 2010; Rhodes, 2010). A cross sectional random sampling of freshman and senior students (students with more than 100 credits) was provided with the 15-minute online survey.

To conclude, indirect assessment provides institutions with valuable information on students' perceptions, needs, undergraduate experience, and factors that influenced their personal learning journey (Allen, 2006; Banta, 1991; Harper & Kuh; 2007; Van Note Chism & Banta, 2007). This information provides insight on students' decision-making, which can be used by institutions to improve the learning environment. Indirect assessment also educates the university community about the purpose, goals, and learning outcomes of the general education program (Arun & Roksa, 2011; Menand, 2010). In addition, it provides a better understanding of the overall institution's performance (Allen, 2006; Banta, 1991; Van Note Chism & Banta, 2007), addresses accountability, and contributes to the development of a culture of evidence (Allen, 2006; AAC&U, 2006; Humphreys, 2006).

Major Projects for General Education Assessment

In 2009, Hart Research Associates conducted a survey study among 433 leaders of Association of American Colleges and Universities (AAC&U) member institutions. The survey collected information about recent trends in general education and assessment. The study reported that 52% of the surveyed institutions assess their general education program, while 42% are planning to start assessing their general education

program. Institutions that assess their general education program reported that they use rubrics to assess samples of student work (40%); capstone projects (37%) and surveys (37%); common assignments in some courses (26%) and standardized national tests of specific skills (26%); locally developed examinations (23%); standardized national tests for general knowledge (16%); and only 1% utilize writing portfolios as an assessment tool.

The Association of American Colleges and Universities (AAC&U), Association of Public Land-Grant Universities (APLU), and the American Association of State Colleges and Universities (AASCU) have initiated three collaborative projects under the umbrella of *Rising to the Challenge: Meaningful Assessment of Student Learning*. The umbrella project was financed by the Fund for Improvement of Post Secondary Education (FIPSE) to provide a better understanding of assessing students' learning for the sake of advancement and accountability. The three associations worked in collaboration and used different tools to holistically measure student learning outcomes. The AAC&U focused mainly on designing rubrics to assess student portfolios on specific learning outcomes; AASCU focused on assessing non-cognitive learning outcomes; and APLU used three standardized tests to assess outcomes.

To assess students' learning, the APLU utilized three standardized tests: The Measure of Academic Proficiency and Progress (MAPP), The Collegiate Assessment of Academic Proficiency (CAAP), and the Collegiate Learning Assessment (CLA) (Rhodes, 2010). These tests assess critical thinking, problem solving, and written communications of freshmen and seniors. However, these kinds of tests provide information about the

institution and not necessarily about the students themselves (AAC&U, AASCU, APLU, 2010; Rhodes, 2010).

On the other hand, AAC&U developed an assessment rubric called Valid Assessment of Learning in Undergraduate Education (VALUE). This rubric is used to assess essential learning outcomes from students' portfolios such as intellectual and practical skills (inquiry, critical thinking, problem solving, creativity, quantitative and information literacy, teamwork, oral and written communication), personal and social responsibility (civic engagement, intercultural competencies, ethical reasoning, lifelong learning skills), and integrative learning (AAC&U, 2009b). The VALUE Project encourages institutions to assess essential learning outcomes that are not limited to standardized tests. Through the VALUE project, the AAC&U wanted to learn if higher education institutions have similar learning outcomes for all their students regardless of the type or classification of institutions (AAC&U, 2009b; Rhodes, 2010).

The AASCU and APLU have created a web-based system, the Voluntary System of Accountability (VSA), which is divided into several sections that collect information about the college and student experience (AAC&U, AASCU, APLU, 2010; Rhodes, 2010). In one of its sections, the VSA utilizes the National Survey of Student Engagement (NSSE), which measures student learning outcomes, civic engagement, career preparation, teamwork, global skills, and ethical reasoning (AAC&U, AASCU, APLU, 2010; Rhodes, 2010). The NSSE annually surveys first year and senior college students to examine the quality of their undergraduate experience and provide recommendations to improve teaching and learning.

Furthermore, the Center of Inquiry in the Liberal Arts at Wabash College initiated a longitudinal study, the Wabash National Study of Liberal Arts Education (WNSLAE). This study explores the impact of liberal arts colleges and liberal arts education on specific student learning outcomes (Pascarella & Colleagues, 2007). This study utilized two surveys, the NSSE and the WNSLAE Student Experiences Survey (WSES), to explore effective practices that positively impact students' engagement. The study also measured the essential learning outcomes through utilizing different instruments. For example, it has used the Collegiate Assessment of Academic Proficiency (CAAP) to measure problem solving; the Ryff Scales of Psychological Well-Being (SPWB) to measure well-being; Need for Cognition Scale (NCS) and Positive Attitude Toward Literacy Scale (PATL) to measure inquiry and lifelong learning; Miville-Guzman Universality-Diversity Scale (M-GUDS) and Openness to Diversity/Challenge (ODC) scale to measure intercultural effectiveness; Socially Responsible Leadership Scale (SRLS) to measure leadership; and the Defining Issues Test 2 (DIT2) to measure moral character. Furthermore, the WNSLAE has utilized four scales to measure students' life, political, and career orientation, as well as academic motivation. To conclude, there are many kinds of assessment tools that are available for higher education institutions. However, it is crucial for each institution to choose the assessment instrument that best fits its mission, learning outcomes, and students' needs.

Abandoning the False Dichotomy Between Knowledge and Skills

Some universities and colleges believe that general education should be focused on liberal arts education rather than career and professional preparation (Menand, 2010; Seifert et al., 2008). Some departments are motivated to offer general education courses

because they increase their student enrollment (Menand, 2010). For example, the liberal arts faculties want to own the general education program because the liberal arts and sciences disciplines have been declining over decades. Menand (2010) explains that in these disciplines, students usually pursue knowledge through the theoretical and historical lens without taking into consideration the practical, economical, and political aspects of these fields. If practical skills are addressed, these fields will become non-liberal. Little research has been conducted to examine the effect of liberal arts education on student learning outcomes. Seifert et al. (2008) conducted a research study to better understand the impact of liberal arts education. Approximately, 800 students from four institutions with different Carnegie classifications participated in this study. The study reported that the liberal arts experience positively impacts students' leadership, well-being, inquiry, lifelong learning skills, and intercultural abilities (Seifert et al., 2008). To achieve these learning outcomes, Seifert et al. call on educators to underscore intellectual abilities rather than professional skills; integrate curriculum with the learning environment; and foster meaningful student interaction with each other and with their faculty members. Similarly, in their study, Arun and Roksa (2011) note that students in liberal arts majors significantly improve their critical thinking, complex reasoning, and writing skills more than students in other disciplines.

However, in today's world, both knowledge and skills are needed for academic and professional advancement. Students' lack of interest in liberal arts; changing needs of society; and employers' dissatisfaction with college graduate students' career preparation underscore the importance of academic and career preparation. The Partnership for 21st Century Skills (2010) explains, "it's time to abandon the false dichotomy between

knowledge and skills. Knowledge is necessary, but not sufficient, for success today. Students need skills to be able to apply their knowledge and continue learning" (p. 12). As a result, the undergraduate experience should foster academic skills and knowledge and technical and career competencies, as well as global and civic awareness (AACTE, 2010; AAC&U, 2007; Partnership for 21st Century Skills, 2010).

Quality of Undergraduate Education

Unfortunately, in the last decade, many reports such as those produced by the Association of American Colleges and Universities (AAC&U) (2007), the American Management Association (AMA) (2010), the Partnership for 21st Century Skills (2008), and Hart Research Associates (2009) condemn universities for producing students with low academic preparation. Businesses also have been complaining that college graduates possess mediocre critical thinking and communication skills and are not well prepared for their professions (AMA, 2010; AAC&U, 2007; Boning, 2007; Hart Research Associates, 2009). The National Survey of Student Engagement (NSSE) annually surveys first year and senior college students to examine the quality of their undergraduate experience and provide recommendations to improve teaching and learning. The NSSE (2007) reported that 54% of surveyed seniors did not participate in community-based projects within their coursework; and 50% did not write a paper longer than 20 pages in their last year in college. Several universities, such as Drake University, University of Georgia, and Grand Valley State University are utilizing the NSSE results to assess their general education program.

Similar findings were reported in the study done by Arun and Roksa (2011) and the Wabash National Study of Liberal Arts Education. Arun and Roksa (2011) studied

2,000 students in 24 institutions during their first two academic years. They utilized the Collegiate Learning Assessment (CLA) essay to assess students on broad skills that are essential for all undergraduate students. The study reported that 45% of students did not significantly improve their critical thinking skills and writing competencies during their first two years in college. Furthermore, only 36% showed significant improvement in learning during their undergraduate experience. During a semester, 32% of students did not read more than 40 pages for a single assignment, and 50% did not write more than 20 pages for a single assignment. In this study, the CLA scores increased by 0.18 standard deviation between the first and second year. Similarly, the Collegiate Assessment of Academic Proficiency (CAAP) scores in the Wabash study only increased by 0.11 (Glenn, 2011).

Moreover, several studies have criticized general education for not addressing essential learning outcomes. Laird et al. (2009) wanted to find out if faculty are designing their courses to address essential learning outcomes. They also wanted to discover if both, the general education courses and non-general education courses, address individual and social responsibility as well as intellectual and practical competencies. This study utilized data generated from the Faculty Survey of Student Engagement that is administered annually to faculty at four-year institutions. They have collected data from approximately 10,900 faculty members from different institutions. Laird et al. (2009) reported that essential learning outcomes such as individual and social responsibilities are not assessed and integrated throughout the curriculum. They also reported that essential learning outcomes such as critical thinking, oral and written communication, and individual and social responsibilities were fostered more in general education courses

than in non-general education courses. This is true because general education courses are designed to foster essential skills that are necessary for student academic, professional, and personal advancement. On the contrary, practical competencies such as collaboration, problem solving, technology skills, and work-related skills are underscored more in non-general education courses (Laird et al., 2009). As a result, researchers suggest educators should increase their efforts in promoting the essential learning outcomes and the purpose of their general education program. Institutions should assess and redesign their curriculum to ensure that all their undergraduate students are exposed to essential learning outcomes (Laird et al., 2009).

Furthermore, there has been a press to close the global achievement gap between American students and international students in other countries (AACTE, 2010; Partnership for 21st Century Skills, 2008; Rhodes, 2010). Nationally, American students are underperforming in science, math, technology, and engineering in comparison to students from other countries (AAC&U, 2007). Students in the USA are also doing poorly on international assessments, such as the Programme for International Student Assessment (PISA), in comparison to students in other countries (AACTE, 2010). To improve students' learning, general education should provide students with essential skills and abilities that enrich them as students, citizens, and employees (Partnership for 21st Century Skills, 2010; Rhodes, 2010). A systemic assessment of general education will provide colleges and universities with valuable information to design a coherent and fruitful undergraduate experience that strengthens students' essential skills and prepares them for their disciplines and future careers (Allen, 2006; AAC&U, 2006; Banta, 1991).

Students' Preparation for the 21st Century Workforce

General education assessment and restructuring became crucial during the last decade. Especially since many studies have scrutinized the general education programs for not fulfilling the needs of students and employers (AMA, 2010; Boning, 2007). Employers are not satisfied with college graduates who lack necessary skills to function in the workforce (AACTE, 2010; AMA, 2010; AAC&U, 2009a). They have complained that graduates possess mediocre critical thinking and communication skills (AAC&U, 2007; Boning, 2007). Several studies have reported that 31% of employers do not hire college graduates because they do not have the skills for which employers are looking (Partnership for 21st Century Skills, 2010). Less than 25% of college graduates have adequate skills to succeed in the workforce (AAC&U, 2007).

The business world has greatly impacted general education and its learning outcomes. For example, many studies have explored the perceptions of employers towards advanced skills that should be mastered by all college students. Each of these studies has reported similar essential competencies that should be fostered during the student undergraduate experience. These essential competencies would prepare students for life and work, and allow them to succeed in the competitive global world. In 2006, Hart Research Associates conducted a survey in coordination with the Association of American Colleges and Universities (AAC&U) to study employers' perceptions about the most important learning outcomes that all college students should possess. The survey reported that 82% of business employers believe that higher education institutions should place more emphasis on science and technology. In addition, 73% emphasized applied knowledge, critical thinking, analytical reasoning, and communication skills. Finally,

72% of employers believe that students should be exposed to knowledge on global issues. The results from this survey have greatly influenced the essential learning outcome framework that was developed by AAC&U. Many colleges and universities have restructured and redesigned their general education programs based on the AAC&U essential learning outcome framework.

Similarly, the American Management Association (AMA) (2010) noted that critical thinking, creativity, communication, and collaboration are important competencies to prepare students for their professions. In 2010, the AMA surveyed 2,115 executive employers to better understand their perceptions towards these four Cs. Three quarters of the employers reported that these competencies are going to be underscored in business in the coming five years. The changing pace in the business environment, global competitiveness, and the changing nature of work and organizational structures are going to underscore such competencies (AMA, 2010). In addition, employers explained that developing skills in reading, writing, and arithmetic are important but not sufficient for students to succeed in the workforce. AMA labeled these three skills as the "three Rs" and explained that they should be combined with the "four Cs" to better prepare students for the workforce and global citizenship.

The Partnership for 21st Century Skills (2010) explains that universities should develop partnerships with businesses and specific workplaces to give their students opportunities to develop credentials and relationships with employers. These partnerships will inform educators of the essential skills that their students should master, and at the same time students will be exposed to work place experience through internships and job shadowing. This is important especially since today's students are also most likely to

change their careers several times in their life span. Humphreys (2006) explains, that “the workplace and the nature of today’s jobs are changing rapidly. Narrow technical skills have a much shorter shelf life than broader skills and capacities” (p. 7). Students should be able to apply the knowledge and skills they have attained from their undergraduate experience to real life situations (Allen, 2006; AACTE, 2010; AAC&U, 2007; Boning, 2007; Humphreys, 2006; Rhodes, 2010). Through liberal education, they should acquire transferable skills to achieve their long-term professional goals and keep up with the changing world.

Challenges Facing General Education

General education programs should also meet the changing needs of society by preparing students for the challenges of the 21st century world (Allen, 2006; AACTE, 2010; AMA, 2010; AAC&U, 2007; Boning, 2007; Hart Research Associates, 2009; Partnership for the 21st Century Skills, 2010; Rhodes, 2010). During the last decade, higher education institutions assessed and restructured their general education programs to meet the needs of 21st century students and for accreditation purposes. They also had to keep up with the changing student demographics and workforce, globalization, technology, and advanced economy (AACTE, 2010; AAC&U, 2007, 2009a; Partnership for 21st Century Skills, 2008).

Accountability. During the 1980s, assessment in higher education was internally driven to monitor effectiveness of a course or program. However, in the 21st century, higher education assessment had shifted from a teaching focused education to a learning and outcomes based approaches (AAC&U, AASCU, APLU, 2010). Colleges and universities have started to investigate the values, competencies, and skills that

undergraduate education provides for its students. They are now held responsible to educate all students for the future and prepare them for the more complex world and working environment. They are also accountable for fostering active and civil citizenship (AACTE, 2010; AAC&U, 2007; Boning, 2007).

Higher education institutions are called upon to report their students' learning outcomes and experiences. They are required to report the type of learning they are providing for their student population. Accreditation bodies require higher education institutions to develop general education programs with a set of educational learning outcomes that are measurable and continuously assessed (Wehlburg, 2010). An accreditation agency provides professional judgment to certify if the institution meets specific agreed upon requirements (Allen, 2006). They underscore the importance of general education because it is the trademark of every institution.

To be accredited, an institution should be engaged in self-reflection, systemic assessment, continuous evaluation, and strategic planning. Accreditation provides credibility for an institution and improves students' confidence in their education. There are six regional accreditation bodies: Middle States Association of Colleges and Schools, New England Association of Schools and Colleges, North Central Association of Schools and Colleges, Northwest Commission on Colleges and Universities, Southern Association of Schools and Colleges, and Western Association of Schools and Colleges (Allen, 2006). Each of these regional accreditation bodies oversees colleges' and universities' accreditation in specific states. For example, the Middle States Association of Colleges and Schools accredits institutions in Delaware, the District of Columbia,

Maryland, New Jersey, New York, Pennsylvania, Puerto Rico, the U.S. Virgin Islands and the Republic of Panama (Allen, 2006).

The Middle States Association of Colleges and Schools requires institutions to address 14 standards. Standard 12 is focused on general education requirements. The Middle States Commission on Higher Education (2006) notes that "the institution's curricula are designed so that students acquire and demonstrate college-level proficiency in general education and essential skills, including at least oral and written communication, scientific and quantitative reasoning, critical analysis and reasoning, and technological competency" (p. 47). It also requires accredited institutions to have well-defined learning outcomes that are continuously assessed to improve general education programs and student learning.

In addition to the regional accreditation agencies, there are many specialized accreditation agencies that accredit specific programs or institutions such as the National Council for Accreditation of Teacher Education (NCATE) and the Accreditation Board for Engineering and Technology (ABET). Accreditation agencies have played an important role in redesigning and restructuring general education programs. Each university is required to design an assessment system that measures certain students' learning outcomes that are underscored at this institution. Students are expected to demonstrate that they master these essential learning outcomes. This has been a very challenging task for colleges and universities because it is time consuming and complex. In addition, many general education outcomes such as critical thinking and problem solving are difficult to assess. Many institutions have hired educational leaders to manage, direct, and assess their general education program.

Student demographics. In addition to meeting the requirements of accreditation agencies, higher education institutions should also be responsive to changing world demographics by designing a general education program that meets the needs of 21st century students (AACTE, 2010). The college student demographic is continuously changing and greatly impacting higher education institutions. The number of nontraditional undergraduate students is increasing. The Association of American Colleges and Universities reports that most undergraduate students work; 40% of undergraduate students are 24 or older; and many are part time students (AAC&U, 2007). Long and Riley (2007) note that by 2015, the number of undergraduate students will increase by more than 2.6 million students and that students of color will constitute three quarters of this increase. They also report that there will be an increase in the number of students from low and middle-income families and an increase in non-traditional students. Similarly, the U.S. Census Bureau (2008) reports that by 2042 historically under-represented populations will constitute the majority of the United States population (as cited in Partnership for 21st Century Skills, 2008).

In response to student demographic changes, many higher education institutions have redesigned their undergraduate experience to address the needs of their students. Bates College, like many other colleges and universities, has redesigned its general education program to respond to the developmental makeup of its student population (Reich & Head, 2010). Education institutions can better serve their students by understanding their characteristics and fostering learning experiences that meet the needs of their student population (AACTE, 2010; AAC&U, 2007).

Service economy and globalization. In addition to student demographic changes, there have been great changes in the economy. In the last few decades, knowledge, information, and innovation have become the building blocks for the service economy that replaced the industrial economy (AACTE, 2010; AMA, 2010; Partnership for 21st Century Skills, 2008). Between 1995 and 2005, 17 million service jobs were created, while 3 million were lost from the industrial jobs. The United States' new economy became increasingly dependent on the knowledge, skills, and innovation of its future citizens and workforce. The AAC&U (2007) notes that liberal education should be “a comprehensive set of aims and outcomes that are essential for both a globally engaged democracy and for a dynamic, innovation-fueled economy” (p. 11). Higher education institutions are called upon to produce highly skilled workers who are creative and innovative, who can communicate effectively, collaborate with others, respond to complex problems, and manage information (AACTE, 2010; AMA, 2010; AAC&U, 2007; Partnership for 21st Century Skills, 2008). Consequently, they have started to assess and restructure their general education programs to integrate 21st century skills that are deemed necessary to maintain the United States' economic and global competitiveness (AAC&U, 2007; Partnership for 21st Century Skills, 2008).

Furthermore, many studies report that undergraduate students are not well-prepared to function in the globalized world (AACTE, 2010; AAC&U, 2007; Partnership for 21st Century Skills, 2008). American universities and colleges are failing to foster global preparedness and awareness in their college students. AAC&U (2007) reported that fewer than 10% are adequately prepared to function in the global world. Fewer than 13% of undergraduate students have basic competencies in a second language; fewer than

34% take course in international studies, and fewer than 10% study abroad (AAC&U, 2009a). Similarly, Adelman (2004) studied students' preparedness for the global world by measuring the "global preparedness index" through three components: the level of foreign language competence, the study of international affairs, and studying abroad. The study reported that only 1.4% of college graduates had all three components: average or above average competence in a foreign language, with at least nine credits in international affairs, and who have studied abroad (Adelman, 2004).

The American Association of Colleges for Teacher Education (AACTE) notes that all students should be provided with the opportunity to acquire the skills and knowledge that would allow them "to succeed in the increasingly global, technology infused, 21st century workplace" (2010, p. 20). To produce educated global citizens and a creative workforce, higher education institutions should underscore scientific and technical competencies, advanced literacy, critical thinking, and civic engagement (Berlowitz, 2010). Students should master skills in reading and writing, as well as learn foreign languages (Berlowitz, 2010). Finally, global awareness can also be attained through different strategies such as studying abroad, recruiting international students, and using technology to connect with international colleges (Stearns, 2010). To conclude, it is important that colleges and universities have a good understanding of which student outcomes are most important and which program changes are needed to achieve these outcomes (AACTE, 2010). They should restructure and systematically assess their general education programs to offer a model that best fits their needs, purpose, mission, and student population.

General Education Models

Each general education model is a trade mark of the institution and its identity because it provides insight into the type of education and learning experience that are being fostered by the institution (Allen, 2006; Banta, 1991; Menand, 2010). It is the “social glue” that provides a “binding experience” for undergraduate students (Menand, 2010).

Earliest general education models. General education is a phenomenon of the late nineteenth and early twentieth century (Katz, 2005). The earliest model of general education was a coherent curriculum with a specific set of requirements that focused on classical studies (Wehlburg, 2010). General education’s mission was to cultivate students’ values and morals and prepare them for life after graduation (Boning, 2007; Menand, 2010). Over time, the general education program has evolved and become a curriculum that is focused on preparing students for a number of professions.

Until the mid-1800s, Harvard utilized a unified general education program with a predetermined set of requirements and courses (Boning, 2007). There was only a single program with no separation between major and general education courses. This coherent model was used because the typical students at that time were white males who joined the university to become doctors, lawyers, or priests (Boning, 2007). As a result, faculty members decided what courses students should take. They knew what knowledge and skills students required in their undergraduate program. In 1869, Harvard University president Charles Eliot developed an elective model in which students could select courses that met their interests and goals. Harvard's elective model became widely utilized by other higher education institutions.

Johns Hopkins University, a research graduate university that was established in 1876, allowed its students to select courses based on their interests (Wehlburg, 2010). With the increase of knowledge, students had the opportunity to choose from a variety of disciplines and career preferences (Wehlburg, 2010). Over time, the student population became more diversified and heterogeneous. In the mid-19th century, there was a need to train individuals for specific occupations because of the industrial revolution (Boning, 2007). In 1862, the Morrill Land Grant statutes provided funding to establish land-grant colleges that focused on agriculture and mechanics art. These institutions served a new student population and provided them with preparation for specific professions. At that time, the general education model addressed the needs of the society and at the same time allowed the students to select their courses (Boning, 2010).

The general education model with elective courses has positively impacted faculty research because it allowed faculty members to focus on their specializations and pursue their interests. However, it negatively impacted the academic community (Boning, 2007). Unfortunately, over time, “the elective system became nothing more than a means for students to take whatever classes they wanted on their way to a degree, no matter how fragmented and incoherent their experiences were” (Boning, 2007, p. 5). As a result, students did not experience a unified general education program, and they did not attain the same general learning outcomes during their undergraduate experience (Boning, 2007). Students' learning experiences became fragmented and disjointed. Furthermore, the gap between general education and specialized education widened.

In 1909, Lawrence Lowell, Harvard University president, established the distributional model (Wehlburg, 2010). This model allowed students the flexibility to

choose courses that met their interests and at the same time provided coherence through some type of common curriculum. This model became very popular and was imitated by many higher education institutions. During the twentieth century, general education programs alternated between a unified curriculum and a loose disjointed curriculum that offered a wider selection of courses.

On the other hand, some general education models were more focused on certain subjects regardless of students' major or professional preparation pathway (Wehlburg, 2010). For example, the University of Chicago created a general education structure that focused on specific content knowledge. The university believed that all its students, regardless of their specialty, should acquire specific common content knowledge (Boning, 2010; Wehlburg, 2010). This general education program is still utilized by many higher education institutions and is known as the Great Books curriculum (Wehlburg, 2010). Other higher education institutions, such as Amherst University, developed an integrated and interdisciplinary general education program that utilizes themes to develop problem-solving skills (Boning, 2007).

During the 20th century, some general education models were impacted by contemporary social issues. For example, during World War I, the Massachusetts Institute of Technology developed a course called War Issues as part of its general education program (Wehlburg, 2010). The university designed this course to educate its students on current social issues instead of just being focused on discipline specific courses (Wehlburg, 2010). However, many models were impacted by reports that were generated in the academic community. For instance, in 1945, the Harvard report, "General Education in a Free Society," called for a core curriculum that provides a

coherent, interdisciplinary, and integrated undergraduate education and experience for all students (Boning, 2007; Katz, 2005; Wehlburg, 2010). The report, known as the "Harvard Red Book," underscored the importance of both general education and specialized curricula and noted that general education courses should constitute about one third of the total credits (Boning, 2007). It underscored the concept that all undergraduate students should be exposed to different disciplines. This model became widely used by many higher education institutions for many years.

In 1965, the Higher Education Act increased accessibility and affordability to higher education institutions. Through this Act, the federal government gave funding to universities to provide scholarships and loans to their students. The student populations became more diversified and heterogeneous. There was a great increase in the number of female and minority students in universities (Boning, 2007). As a result, general education programs were required to address the needs of the diversified student body and prepare them for a variety of vocations (Boning, 2007). Many universities decreased the total number of credits required for their general education programs and increased the number of electives. In addition, faculty members focused on their specialization and adjuncts and non-tenured track faculty taught most of the general education courses (Wehlburg, 2010). However, during the late 1970s, the Carnegie Foundation called for general education reform to improve its effectiveness and coherence. Colleges and universities developed and utilized general education programs that mirrored their identities, cultures, and needs.

During the late 1990s, many general education programs constituted about 40% of the undergraduate experience (Johnson et al., 2004). The general education program was

mainly modified and not completely restructured. This modification was not driven by students' needs or societal expectations, but by universities' missions and regional accreditation associations' requirements. Johnson et al. (2004) note that general education learning outcomes were developed to address the institutional mission more than to fulfill student and social needs.

Current general education models. Currently, there are several types of general education programs that are commonly used in higher education institutions. Many of them constitute 38% of undergraduate education and follow the distribution or the core model (Hart Research Associates, 2009; Menand, 2010). In 2009, Hart Research Associates conducted a survey study among 433 leaders of AAC&U member institutions. The survey collected information about recent trends in general education elements and learning outcomes, as well as assessment. The study revealed that 89% of the surveyed institutions are redesigning, restructuring, or reviewing their general education programs. The study reported that 80% of colleges and universities are utilizing the distribution model, and 41% require a small number of core courses as part of their general education program (Hart Research Associates, 2009). The distribution model is usually cheaper and easier to implement than the core model (Menand, 2010). Universities that utilize the distribution model believe that liberal education is not limited to a particular knowledge base. Instead, the general education program should foster high-level intellectual and practical skills and attitudes to produce liberally educated students (AAC&U, 2007; Menand, 2010).

In the distribution model, departments offer courses as general education courses. The rationale behind utilizing the distribution model is that the university will be able to

provide its students with depth of knowledge in their major, and breadth through the general education program (Katz, 2005; Menand, 2010). Students are usually asked to select courses in different disciplines. In general, students are required to take three courses from the Department of Natural Science, three additional courses from the Department of Social Science, and three courses from the Department of Arts and Humanities. For example, students at the University of Virginia are required to select courses from each of the following five categories: social sciences, humanities, historical studies, non-western perspectives, and natural sciences and mathematics (Menand, 2010). On the other hand, students at Princeton University are required to complete one or two courses in each of the following seven areas: epistemology and cognition, ethical thoughts and moral values, historical analysis, literature and arts, quantitative reasoning, science and technology, and social analysis (Menand, 2010).

The weakness of the distribution model is that without regulations, students might pick easy or introductory courses or select similar courses that do not provide breadth of knowledge (Menand, 2010). Allen (2006) explains that the distribution model can be effective if it is well coordinated and supported by a strong student advisement system. Princeton University was the first university to utilize the distribution model (Katz, 2005). Many universities use the distribution model, such as the University of Virginia and Swarthmore University. Some universities, such as Yale, have restructured their general education program by utilizing elements from both the distribution model and specialization to improve coherence (Boning, 2007).

On the other hand, universities who use the core model believe that their students should acquire a specific set of skills and knowledge through their general education

(Katz, 2005; Menand, 2010). Students are usually required to complete a certain number of specific core courses (AAC&U, 2009a). The majority of the general education courses are non-major courses that are listed separately in the course catalog and are offered outside the departments. Some universities believe that every student who graduates from their institution should have acquired certain methods of inquiry (Menand, 2010). For example, Columbia University, which utilizes a core model, believes that every student should read a certain book by the time he or she graduates (Katz, 2005; Menand, 2010).

The Common Intellectual Experience is another model for a general education program. It is similar to the core model, but it is more flexible. Students are required to take common courses that include integrative studies or involvement in learning communities (McNertney & Ferrandino, 2010). In the Thematic Model, general education courses are clustered under themes. While in the upper level requirement model, some of the general education requirements are met at the junior or senior level. This allows the university to integrate major requirements with general education requirements (McNertney & Ferrandino, 2010). Finally, in the learning communities' model, general education classes are grouped under interdisciplinary themes in each semester. In this model, students enjoy a cohort experience. Some general education programs are a combination of several models. For example, Pomona College requires an interdisciplinary critical inquiry seminar in the first year followed by a distribution system (Menand, 2010). Another example is Texas Christian University (TCU), which has redesigned its general education program by combining five general education models (McNertney & Ferrandino, 2010). On the other hand, some universities do not

have any general education program. Such universities believe that students will select courses based on their interests.

General Education Redesign

During the last decade, 99.6 % of higher education institutions placed a bigger emphasis on general education (Johnson et al., 2004). Many used their general education programs as a starting point to restructure their approaches to students' learning (Rhodes, 2010). Their undergraduate education started to shift to an outcome driven paradigm characterized by intellectual coherence and integrative learning. Eight percent of higher education institutions restructured their curriculum (Johnson et al., 2004) by increasing coherence and requirements, developing students' skills, involving students in undergraduate research, decreasing options, developing learning communities, and engaging students through active learning (Boning, 2007). Many restructured their general education by utilizing the essential learning outcomes framework that was developed by the Association of American Colleges and Universities (AAC&U) (Hart Research Associates, 2009). They modified their general education program to incorporate specific skills and competencies such as critical thinking, quantitative reasoning, communication, writing, and content knowledge in humanities, social studies, mathematics and global culture (Hart Research Associates, 2009).

Common elements in general education. The Hart Research Associates' study (2009) reported that 73% of the 433 surveyed institutions utilize the first year experience to help freshmen transition to college; 68% integrate service learning in their programs; 62% require internships; 36% utilize thematic required courses and 33% are requiring upper level requisites; and only 24% utilize learning communities in their general

education framework. In addition, 60% of the institutions included a global course in their general education program; 58% offered first year seminars; 56% had diversity courses; 51% included interdisciplinary courses; 38% engaged activities and civic learning; and 36% offered experiential learning opportunities. Finally, the study revealed that only 11% of institutions believe that their general education is well integrated with specialized majors, and only 37% reported that they are "fairly well integrated."

To improve the students' undergraduate learning experience and increase retention, higher education institutions should integrate and weave their specialized, professional, and general education programs into the undergraduate education experience instead of offering them as separate entities (AACTE, 2010; AAC&U, 2007; Rhodes, 2010; Wehlburg, 2010). General education should expose students to a challenging learning environment that provides them with a well-rounded education (Hawthorne et al., 2010). It should intentionally foster essential learning skills and powerful forms of learning across multiple areas of study (AAC&U, 2007). Rhodes (2010) notes that students should be "encouraged to view their learning in a larger context than in a single assignment or course, to view their work as part of a larger design shared across the curriculum, and hopefully the institution" (p. 19). The Association of American Colleges and Universities (AAC&U) (2009a) noted that many campuses provide opportunities for students to engage in active learning. However, in many cases these elements are optional and not essential. Academic grades are not enough to reflect the level to which students are prepared professionally and academically. Instead, the AAC&U (2009a) lists several innovative educational practices that have proven to be effective for all students, especially minority students. These essential practices are first-

year seminars, common intellectual experiences, learning communities, writing intensive courses, collaborative projects, undergraduate research, global learning, service learning, internships, and capstone projects. Similarly, the National Survey of Student Engagement (NSSE) (2007) reports that 81% of faculty members believe that it is essential for undergraduate students to engage in a culminating senior experience; 53% report that students should do research with faculty; 49% note that undergraduates should participate in learning communities; and 44% state that students should be encouraged to study abroad.

Many universities and colleges offer First Year Experience as part of their general education requirements to introduce undergraduate students to the institution, provide some aspects of the general education program, and prepare them for their academic journey (AAC&U, 2009a; Johnson et al., 2004; Wehlburg, 2010). In addition, diversity, multicultural studies, and senior seminars are components of the general education program. Senior seminars or a senior culminating experience provides students with fruitful learning experiences to integrate and synthesize knowledge (AAC&U, 2009a; Boning, 2007; Johnson et al., 2004; NSSE, 2007). NSSE (2007) reports that 58% of surveyed students take thesis as their senior culminating activities, 46% enroll in a capstone course in their major; 29% take comprehensive exams; 25% are exposed to field experience; and only 6% take a capstone course outside their major.

Interdisciplinary themes are also very common components of general education programs (Boning, 2007; Orillion, 2009). The interdisciplinary courses are added to general education programs to connect different disciplines and improve coherence (Orillion, 2009). Many believe that these courses provide depth and inclusiveness, and

foster inquiry, critical thinking, and synthesis. However, Orillion (2009) notes that interdisciplinary learning outcomes are greatly determined by institutional culture. Furthermore, many higher education institutions offer service learning activities in which students volunteer in their community and learn while providing community service (AAC&U, 2009a; NSSE, 2007; Wehlburg, 2010). The NSSE (2007) underscores the importance of community service, undergraduate research, culmination of projects, and learning communities in improving the student learning experience. In addition to essential general education elements, the Wabash National Study of Liberal Arts Education reports that good teaching and high quality interactions, academic challenges and high expectations, and the diversity of experiences are the main factors that positively impact student learning experiences (Orcutt, 2008; Pascarella & Colleagues, 2007; Rhodes, 2010).

General education at Rowan University. Rowan University, in Glassboro, New Jersey, is a selective, medium-sized public university that was founded in 1923. It enrolls 12,183 students. Its student demography has changed in the last decade. Rowan University expanded its campus and program offerings to serve a more diverse student population. In 2007, the university founded the College of Graduate and Continuing Education that offers hybrid and online programs to address the vast range of non-traditional student needs. In addition, a new Medical School opened in fall 2012 that greatly impacted the campus community.

Rowan University is currently in the process of redesigning its general education program. The current general education at Rowan University aims to provide well-

rounded education and breadth of knowledge. Through the general education program, Rowan University (2010):

Also strives to (a) develop students' abilities to speak and write effectively, think clearly and critically; (b) develop students' abilities to use computational, quantitative, and problem solving skills, as well as scientific thinking and modes of inquiry; (c) increase students' understanding of the complexity of issues in humanities, arts, social and behavioral sciences and the practice of free inquiry in their analyses and examination of values; (d) provide opportunities for students to explore specializations, concentrations, minors, or disciplines outside of their own in greater depth. (p. 1)

Rowan University's general education program currently follows the distribution model (Allen, 2006; Boning, 2007; Menand, 2010; Wehlburg, 2010). It consists of five banks in the following areas: communication (minimum 6 credit hours), math and science (minimum 7 credit hours), social and behavioral sciences (minimum 6 credit hours), history, humanities, and language (minimum 6 credit hours), and non-program electives (minimum 6 credit hours) (Rowan University, 2010). The non-program electives are designed for the purpose of allowing students to explore and deeply understand an area outside their major. They are also intended to better prepare the students for their majors, future professions, and life (Rowan University, 2010). To meet the non-program requirements, all students should take College Composition I or Integrated College Composition I and College Composition II; one course from specific math courses and one that includes a laboratory experience in the science and math bank (Rowan University, 2010). The total number of credit hours and number of electives varies significantly between programs (Rowan University, 2010).

In addition to general education requirements, students are required to take courses to meet the Rowan Experience requirements. The Rowan Experience consists of a set of courses that are intended to foster specific skills and expose students to unique

experiences (Rowan University, 2010). It also aims to help students experience a smooth transition to college; provide them with skills to present on different subjects; allow them to explore literary works; enhance their knowledge of multicultural and global world; and allow them to design and/or critically evaluate art work (Rowan University, 2010). The Rowan Experience requires students to take one or more courses in the following areas: Artistic and Creative Experience, Literature, Multicultural/Global, Public Speaking, Rowan Seminar, and Writing Intensive (Rowan University, 2010). All undergraduate students, transfer and non-transfer are required to take the Writing Intensive course to meet their Rowan Experience requirements. In addition, all Rowan freshmen, except some transfer students, take Rowan Seminar. As a general rule, students are also required to complete at least a total of 42 credit hours to meet general education and Rowan Experience requirements. Students can choose their general education courses from approximately 463 approved courses (Rowan University, 2010).

Transfer students who have an associate degree from any community college in New Jersey can transfer at least 60 credit hours towards their degree program at Rowan University. By doing so, many transfer students do not have to take the lower division general education requirements. This transfer agreement is mandated by the Lampitt Act that was established in 2007. The Lampitt Act (2007) requires all public colleges and universities in New Jersey to transfer academic credits from an associate of arts or associate of science degree program to their undergraduate degree.

Conclusion

General education should provide an environment that fosters intentional learning across multiple disciplines; develops intellectual and practical skills; and promotes

personal and social responsibility (AACTE, 2010; AAC&U, 2007; Humphreys, 2006; Partnership for 21st Century Skills, 2008). However, in the last decade, higher education institutions have been criticized for not adequately preparing undergraduate students academically and professionally (AMA, 2010; AAC&U, 2007; Hart Research Associates, 2009; Partnership for 21st Century Skills, 2008). They have been encouraged to continuously evaluate and improve their general education programs to enhance students' learning and to adjust to changes in technology, economy, demography, and globalization (Allen, 2006; AACTE, 2010; AAC&U, 2006, 2007, 2009a; Boning, 2007; Galle & Galle, 2010; Kelsch et al., 2004; Partnership for 21st Century Skills, 2008, 2010; Rhodes, 2010). Colleges and universities should be aggressive in educating their current and prospective students about the essential learning outcomes and competencies that they should master to be academically and professionally successful.

Many institutions assess their general education program and its learning outcomes through direct and/or indirect assessment methods (Allen, 2006; Banta, 1991; Harper & Kuh, 2007; Galle & Galle, 2010; Kelsch et al., 2004; Van Note Chism & Banta, 2007). General education essential learning outcomes are values, skills, and knowledge that all college undergraduate students need to master by the time they complete their undergraduate program (Allen, 2006; AAC&U, 2007). These essential skills develop students' academic and professional competencies, underscore ethics, values, and global learning, and foster active citizenship (Allen, 2006; AACTE, 2010; AMA, 2010; AAC&U, 2009a; Hart Research Associates, 2009; Partnership for the 21st Century Skills, 2010). Direct assessment methods, such as standardized or locally developed tests, student portfolios, and embedded course assignments are commonly

used to evaluate students' learning outcomes (Allen, 2006). Indirect assessment methods, in the form of attitudinal surveys and interviews, are usually used to complement direct assessment methods and explore students' perceptions towards the general education programs (Allen, 2006; Banta, 1991; Harper & Kuh, 2007; Kelsch et al., 2004; Van Note Chism & Banta, 2007)

For example, the Wabash National Study of Liberal Arts Education (WNSLAE) utilized two surveys, the National Survey of Student Engagement (NSSE) and the WNSLAE Student Experiences Survey (WSES) to explore effective practices that positively impact students' engagement (Seifert et al., 2010). The study also directly assessed students' learning outcomes through different instruments such as the Collegiate Assessment of Academic Proficiency (CAAP) and the Need for Cognition Scale (NCS). Similarly, the University of North Dakota Bush Longitudinal Study utilized both direct assessment (student portfolios) and indirect assessments (interviews) (Kelsch et al., 2004). Some researchers such as Feldman (1994) and Johnson (2010) indirectly assessed general education programs through surveys, while others, such as Hawthorne et al. (2010) used interviews.

The Voluntary System of Accountability (VSA) that was created by the AASCU and APLU collects information about the college and student experience (AAC&U, AASCU, APLU, 2010; Rhodes, 2010). In one of its sections, the VSA utilizes the National Survey of Student Engagement (NSSE) that is used by many universities seeking to discover students' perceptions of their undergraduate experience (AAC&U, 2007). The First Year Initiative Survey, the Cooperative Instructional Research Program

(CIRP) Freshman survey, and the College Student Experience Questionnaire (CSEQ) are commonly used as indirect assessment tools by higher education institutions.

Indirect assessment of general education is very crucial for the continuous improvement of student learning to keep up with changes in technology, demography, economy, and globalization (Allen, 2006; AACTE, 2010; AAC&U, 2007, 2009a; Banta, 1991; Harper & Kuh; 2007; Van Note Chism & Banta, 2007). In tough economic times and competitive job market, every student has the right to achieve a high quality education for his/her tuition money. Indirect assessment increases the institutions' awareness of their students' needs and provides insight about students' experiences, decision-making, and the factors that influenced their personal learning journey (Allen, 2006; Banta, 1991; Harper & Kuh; 2007; Van Note Chism & Banta, 2007). It increases awareness of the purpose and goals of general education within the university community (Arun & Roksa, 2011; Menand, 2010). In addition, indirect assessment provides a better understanding of an institution's performance and its unique learning outcomes that might not be reported through direct assessment methods (Allen, 2006; Banta, 1991; Van Note Chism & Banta, 2007). It also addresses accountability and contributes to the development of a culture of evidence (Allen, 2006; AAC&U, 2006; Humphreys, 2006). Harper and Kuh (2007) and Van Note Chism and Banta (2007) note that qualitative and quantitative strands should be combined to address institutional assessment questions and to explain the learning experiences of different student groups and the meaning that they make of their college life.

Chapter III

Methodology

This sequential explanatory mixed methods approach is designed to indirectly assess, through students' perceptions, the general education program at Rowan University, a four-year public university in New Jersey. A cross-sectional design survey and a focus group technique were used to (a) investigate the differences in perceptions towards the general education program at Rowan University among undergraduate student subgroups; (b) explore the differences in self-perceptions among undergraduate student subgroups towards their undergraduate experience and learning; and (c) provide an in-depth understanding and a holistic picture of students' perceptions towards the general education program and their undergraduate learning experiences.

Research Questions

This study addresses the following research questions:

1. What are the differences in perceptions towards the general education program at Rowan University among undergraduate student subgroups?
2. What are the differences in self-perceptions among undergraduate student subgroups towards their undergraduate experience and learning?
3. In what ways do the qualitative data generated from the open-ended survey question and the focus groups reporting students' perceptions substantiate the quantitative results from the survey?

Context of the Study

The study was conducted at Rowan University, in Glassboro, New Jersey. Rowan University is a selective, medium-sized public university that was founded in 1923 as Glassboro Normal School, a school to train elementary teachers. In 1992, the \$100

million gift from Henry and Betty Rowan provided the financial support for the development and growth of the institution. Rowan University has the following colleges and schools: Education, Business, Performing Arts, Science and Mathematics, Humanities and Social Sciences, Graduate and Continuing Education, Communication and Creative Arts, Engineering, Biomedical Sciences, and Medicine.

The university offers 57 bachelor's, three accelerated bachelor's-to-master's, 27 graduate certificates, 31 master's, 3 professional post-master's, 3 post-master's certificates, and two doctoral programs (Rowan University, 2012). It also offers 200 Study Abroad Programs in more than 40 countries around the world. The average class size is 20.37 students and the student/faculty ratio is 16 to 1. Only faculty members and not teaching assistants teach classes. About 89% of the faculty members have terminal degrees. Rowan University enrolls 12,183 students (10,750 undergraduates and 1,383 graduates) (Rowan University, 2012). Approximately, 65.62% of Rowan students are white; 8.08% are African American; 3.46% are Asian/Pacific Islander; 3.28% are Hispanic; and 2.77% are Puerto Rican. Female students constitute 54.53% of the Rowan University student population.

Rationale and Assumptions of Research Design

Research design guides methods and research interpretation. It is a "procedure for collecting, analyzing, interpreting, and reporting data in research studies" (Creswell & Plano Clark, 2011, p. 53). The study utilized a sequential explanatory mixed methods research design, which is widely used among researchers (Creswell & Plano Clark, 2011; Ivankova, Creswell, & Stick, 2006; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009). However, mixed methods designs have been rarely used in studying

undergraduate students' experiences in relation to learning outcomes (Seifert et al., 2010). Most studies use either exclusively quantitative or qualitative methods. Therefore, this mixed methods study provides a valuable contribution to the general education assessment literature by indirectly assessing students' learning based on their perceptions of their undergraduate experience (Allen, 2006; Creswell, 2009; Creswell & Tashakkori, 2008; Seifert et al., 2010).

Mixed methods research design is "a set of procedures for collecting, analyzing, and mixing both quantitative and qualitative methods in a study to understand a research problem" (Plano Clark & Creswell, 2009, p. 299); however, a mixed method approach is not simply using separate qualitative strands/inductive logic and quantitative strands/deductive logic (Creswell & Plano Clark, 2011; Johnson & Onwuegbuzie, 2004; Tashakkori & Creswell, 2007; Tashakori & Teddlie, 2003, 2009). Plano Clark and Creswell (2009) note that "a basic rationale for this design is that each data-collection form supplies strengths to offset the weakness of the other form" (p. 302). The mixed methods approach involves purposeful integration of these two strands to more richly answer the research questions and to completely analyze the research problem (Bryman, 2006; Caracelli & Greene, 1993; Johnson & Onwuegbuzie, 2004; Ivankova et al., 2006; Plano Clark & Creswell, 2009; Tashakkori & Creswell, 2007; Tashakori & Teddlie, 2003; Teddlie & Tashakkori, 2009).

The quantitative and qualitative data are combined, compared, or integrated to strengthen the inquiry and provide a holistic view of research phenomena. In a mixed method approach, both methods of inquiry complement each other (Bergman, 2010; Caracelli & Greene, 1993; Ivankova et al., 2006; Johnson & Onwuegbuzie, 2004; Plano

Clark & Creswell, 2009; Tashakori & Teddlie, 2003, 2009). Qualitative results usually explain the quantitative data and provide more detailed information, while quantitative data can be utilized to generalize qualitative themes. Plano Clark and Creswell (2009) list four different types of mixed method research designs: Triangulation, Explanatory, Exploratory, and Embedded mixed methods research designs. The four mixed methods research designs differ by how much emphasis is placed on each of the qualitative and quantitative dataset methods and the timing in which the two datasets are collected and mixed (Ivankova et al., 2006; Plano Clark & Creswell, 2009). Similarly, Teddlie and Tashakkori (2009) provide a mixed methods research design framework of four groups: concurrent, sequential, conversion, and fully integrated. The sequential design is similar to Greene and Caracelli's developmental integrated design in that both use the qualitative and quantitative strands chronologically (Caracelli & Greene, 1993; Jang, McDougall, Pollon, Herbert, & Russell, 2008).

In this study, I utilized the sequential explanatory mixed methods research design because it best fit the research problem, purpose, and research questions, as well as the methodological discussion in the literature (Caracelli & Greene, 1993; Creswell & Plano Clark, 2011; Johnson & Onwuegbuzie, 2004; Tashakkori & Creswell, 2007; Teddlie & Tashakkori, 2009). The mixed method approach was utilized to fully answer the research questions and better understand the research problem; for instrument development and explanatory purposes; and to increase credibility of the findings (Bryman, 2006; Caracelli & Greene, 1993; Creswell & Plano Clark, 2011; Jang et al., 2008; Johnson & Onwuegbuzie, 2004; Tashakkori & Creswell, 2007; Teddlie & Tashakkori, 2009). The mixed method research design provided validity and enhanced inquiry by investigating

the differences in constructions of meaning between focus group interviews and survey responses (Bergman, 2010). The quantitative and qualitative data were collected sequentially in two consecutive stages with more emphasis on the qualitative data (Ivankova et al., 2006).

The first phase quantitatively explored students' perceptions towards the general education program and their self-perceptions of learning that could be generalized to Rowan University undergraduate students. Then the qualitative strand provided a rich and complete description of students' perceptions, enhanced the study, and fully answered the research questions. The two strands were integrated in that the quantitative data analysis informed the qualitative data collection and participant sampling in the second phase. In addition, the two strands were also integrated during data interpretation and reporting (Creswell & Plano Clark, 2011; Caracelli & Greene, 1993; Ivankova et al., 2006; Teddlie & Yu, 2007). The mixed method research is usually difficult to understand without a graphical representation of the research process. Ivankova et al. (2006) note, "Graphical modeling of the study design might lead to better understanding of the characteristics of the design" (p. 4). To provide a better understanding of the sequence, priority, and mixing of data collection in this study, I utilized Ivankova et al.'s (2006) visual presentation of the mixed methods process (see Figure 1).

The research problem dictated the use of two phases and two strands. I utilized a combination of both fixed and emergent mixed methods research design (Plano Clark & Creswell, 2009). I collected and analyzed the quantitative data first. The qualitative data were then collected during the second phase and related to the results of the preceding quantitative phase (Ivankova et al., 2006; Tashakkori & Creswell, 2007). Although the

research design was implemented as planned (fixed design), the second strand was developed based on the interpretation of data that emerged from the first phase (emergent design) (Creswell & Plano Clark, 2011).

Sequential Explanatory Mixed Methods Design Process

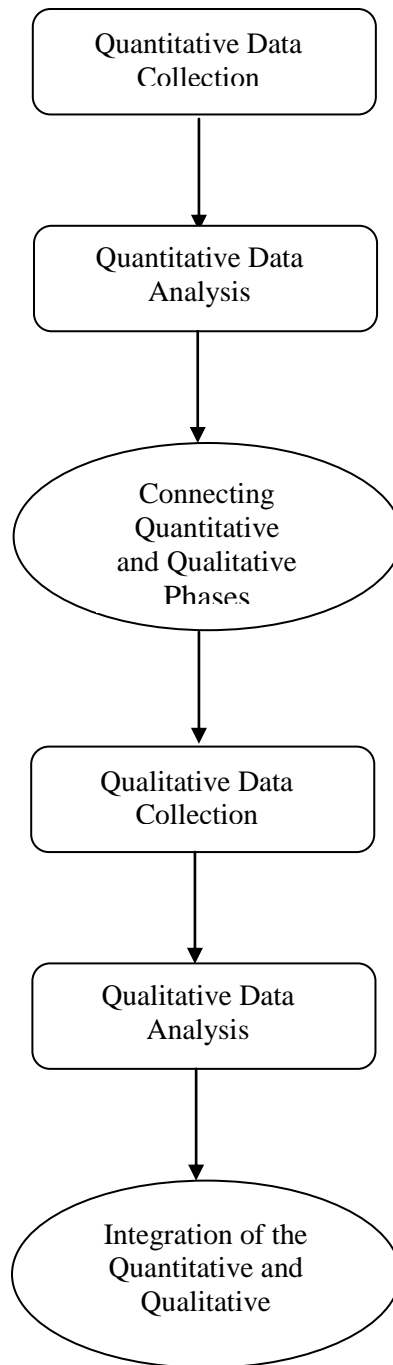


Figure 1. Visual model for mixed-methods: Sequential explanatory design procedures. Adapted from “Using mixed-methods sequential explanatory design: From theory to practice,” by N. V. Ivankova, J. W. Creswell, and S. L. Stick, 2006, *Field Methods*, 18(3), p. 16.

Bergman (2010) noted that the mixed methods approach is appropriate for exploring differences in the “construction of meaning of concepts” in relation to how participants make sense of their experiences or state their perceptions in interviews or surveys, respectively (p. 172). Using both qualitative and quantitative strands enabled me to provide a holistic picture of students' perceptions towards the general education program and their self-perception of their learning. Plano Clark and Creswell (2009) note:

Quantitative research is based on objective stances to knowledge where researchers can measure variables and establish cause and effect. In contrast, qualitative research is based on subjective stances to knowledge where each participant experiences his/her own reality and researchers seek to describe these multiple perspectives. (p. 301)

In this study, the quantitative method of inquiry provided an overview of the students' perceptions (Creswell & Plano-Clark, 2011; Tashakori & Teddlie, 2003, 2009; Van Note Chism & Banta, 2007). It also produced numerical data that were statistically analyzed to generate statistical descriptions and show relationships between different variables (Creswell & Plano-Clark, 2011; Van Note Chism & Banta, 2007). The results obtained from the quantitative data were generalizable to Rowan University undergraduate students (Creswell & Plano-Clark, 2011; Tashakori & Teddlie, 2003; Teddlie & Tashakkori, 2009). Most importantly, the quantitative data allowed me to identify potential differences in students' perceptions among subgroups and provided necessary information for purposefully sampling participants for the second phase (Ivankova et al., 2006). On the other hand, the qualitative method of inquiry produced text data and provided an in-depth understanding of the social phenomena being studied (Johnson & Onwuegbuzie, 2004). The research phenomenon was described through

participants' own words and their subjective points of view (Creswell & Plano-Clark, 2011).

Population and Sample Selection

The sequential mixed methods sampling is the most common sampling technique in mixed methods studies. It involves “the selection of units of analysis for a mixed methods study through the sequential use of probability and purposive sampling strategies” (Teddlie & Yu, 2007, p. 89). The researcher should indicate the sampling scheme and sample size that was utilized in both the quantitative and qualitative strands (Collins, Onwuegbuzie, & Jiao, 2007). This study utilized the sequential mixed methods sampling in which the results obtained from the survey informed the focus group sample (Collins et al., 2007; Creswell and Plano-Clark, 2011; Teddlie & Tashakkori, 2009; Teddlie & Yu, 2007). The relationship between the quantitative and qualitative samples was nested, in that the participants selected for the qualitative phase/focus groups represented a subset of those selected for the preceding quantitative phase (Collins et al., 2007). Teddlie and Yu (2007) note, "Mixed methods sampling involves combining well-established qualitative and quantitative techniques in creative ways to answer research questions posed by mixed methods research designs" (p. 77).

Sampling for quantitative strand. To fully answer the research questions being investigated, I targeted the whole undergraduate student population at Rowan University during the first quantitative phase of the study followed by a stratified purposeful sampling in the second phase (Collins et al., 2007; Creswell and Plano-Clark, 2011; Teddlie & Tashakkori, 2009; Teddlie & Yu, 2007). I utilized an emailing list that was generated by the university's Office of Institutional Effectiveness, Research, and Planning

to target the whole undergraduate student population at the university and solicit their participation in the online survey (see Appendix A). One thousand six hundred students of the 10,750 total undergraduate student population responded to the survey. However, only 1,503 student responses were included in this study. The responses that were included in the study were for students who completed the entire survey and who answered the check question correctly. The check question, "Please mark 'I did not learn anything'," was integrated into the survey to ensure that the participants were carefully reading all the survey questions and statements and that the collected data were accurate.

As for the sample size guidelines, Teddlie and Tashakkori (2009) note that if the population size is greater than 3,000, then the minimum appropriate sample size for the quantitative phase of a mixed methods study should be at least 384 to estimate the characteristics of the population within +/- 5%. Thus, the data generated from this sample could be generalizable to the whole population and could detect significant differences in perceptions among different student subgroups (Collins et al., 2007).

Sampling for qualitative strand. In a focus group, participants are usually selected from the population groups that are going to provide the most meaningful data (Morgan, 1988). To further explore and provide in-depth information about the quantitative results, I utilized the stratified purposeful sampling technique in the qualitative phase (Collins et al., 2007; Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009; Teddlie & Yu, 2007). The stratified aspect of this technique is a feature of probability sampling and the small number of participants is a feature of purposeful sampling (Collins et al., 2007; Teddlie & Tashakkori, 2009; Teddlie & Yu, 2007). In a stratified purposeful sample, the sampling frame is divided into homogeneous

subgroups with respect to a specific characteristic. Then, a purpose sample is selected from each subgroup (Collins et al., 2007). The sample size for a phenomenological qualitative study is usually 6 to 8/10 participants (Collins et al., 2007; Morgan, 1988; Teddlie & Tashakkori, 2009). Since this research study utilized an explanatory design, the participants for the qualitative strand (focus group) encompassed students who already participated in the first quantitative phase (online survey) (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009).

Initially, students who participated in the online survey were divided into three homogeneous subgroups based on two specific educational demographic characteristics (independent variables): the academic year and the number of credits transferred from another institution. Then a purposeful sample of about six to seven students with different academic majors was selected from each of the three subgroups: the freshman-sophomore/non-transfer student subgroup, junior-senior/non-transfer student subgroup, and transfer student subgroup with 1-30 transfer credits (Collins et al., 2007). These subgroups were determined based on the findings generated from the survey data analysis that indicated a divergence in perceptions among these student subgroups towards their undergraduate experience and the general education program (Morgan, 1988; Teddlie & Yu, 2007). The homogeneity in the participants' backgrounds within each focus group allowed me to separate students into groups and to compare their discussions (Morgan, 1988). Furthermore, the stratified purposeful sampling technique allowed me to collect saturated qualitative data in order to develop meaningful themes and provide recommendations for improving the general education program (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009; Teddlie & Yu, 2007).

Data Collection Strategies

Surveys and focus groups provide important information about student learning and are effective tools in the general education assessment process (Allen, 2006). A cross-sectional design survey (see Appendix B) and a focus group interview (see Appendix C) were the methodologies that were used to indirectly assess the general education program at Rowan University. The survey instrument and the focus group protocol were pilot-tested and self-developed based on an extensive review of the literature sources to specifically target the research questions for this study (Tashakkori & Creswell, 2007). I utilized the Association of American Colleges and Universities (AAC&U) essential learning outcome framework and the Rowan University general education learning outcomes to design the research instruments.

Online survey. The quantitative data were collected through a web-based cross-sectional survey (see Appendix B). The survey was designed purposely to address the perceptions towards the general education program at Rowan University. The survey was adapted from the Cooperative Instructional Research Program (CIRP) Freshman survey and the College Student Experience Questionnaire (CSEQ) that were commonly used as indirect assessment tools by higher education institutions. The CSEQ collects information about student self-perception concerning their undergraduate experience and learning. It also seeks to discover students' perceptions on different topics such as information technology, reading and writing, student-faculty interaction, and co-curricular activity (Allen, 2006).

I selected a questionnaire as the quantitative instrument for this study to collect indirect data on students' perceptions from a relatively large sample (Allen, 2006;

Creswell & Plano Clark, 2011; Tashakori & Teddlie, 2003, 2009; Van Note Chism & Banta, 2007). In addition, data collected from the surveys could be distinctively analyzed for different subgroups (Allen, 2006; Creswell & Plano Clark, 2011; Van Note Chism & Banta, 2007). However, a survey is an indirect assessment technique that depends on what students report that they know or do which might not be consistent with what they really know or do (Allen, 2006).

The questionnaire (see Appendix B) was collected during the first phase of data collection in January and February 2012. It consisted of two sections. The first section, Personal and Educational Demographics (SQ1-10), collected information on undergraduate students' characteristics such as gender, age, ethnicity, part-time/full-time enrollment, college year, major, working/non-working, living on campus/off campus, and the number of transfer credits. The second section, Students' Perceptions, consisted of closed-ended statements that addressed students' perceptions associated with the general education program and its learning outcomes, as well as their undergraduate learning experience. The three level Likert scale, an attitudinal interval scale of measurement, allowed the students to choose the response from a three-level ordered response (1- strongly disagree, 2- agree, and 3- strongly agree) that best represented their level of agreement with a statement. The students also identified their opinions on the importance of each learning goal and the extent of their learning for each competency using the three ordered response levels (1- not important, 2- important, and 3- very important; 1-I did not learn anything, 2- I learned a fair amount, and 3- I learned a great deal) (Allen, 2006). These ratings provided insight about whether the students learned the outcomes that they valued. The survey also had one open-ended question that provided insight into some

aspects of students' perceptions. It allowed students to provide their own responses to "uncover unanticipated perspectives" (Allen, 2006). The relationships between the survey questions (SQ) and research questions (RQ) are demonstrated below in Table 1.

Table 1

Survey Questions (SQ) in Relation to Research Questions (RQ)

RQ	SQ
RQ1. the differences in perceptions among undergraduate student subgroups towards the general education program	SQ11. Students' perceptions of the general education program SQ12. Students' perceptions of the general education learning outcomes
RQ2. the differences in self-perceptions among undergraduate student subgroups towards their undergraduate experience and learning	SQ13. Students ratings on specific aspects of their undergraduate experience SQ14. Students' ratings on specific learning skills and goals
RQ3. In what ways do the qualitative data generated from the open-ended survey question and the focus groups reporting students' perceptions substantiate the quantitative results from the survey?	SQ15. Students' comments and suggestions to improve the general education program

Following the approval from the Institutional Review Board of Rowan University (see Appendix D), a pilot-test of the online survey instrument was conducted in November 2011. Five undergraduate students at the university were asked to complete the online questionnaire and provide their feedback. The pilot test ensured that the survey items were clear and concise to avoid any bias or misinterpretations (Fowler, 1995). Based on the feedback, the survey instrument was edited and revised before data collection.

I then sent an email to all undergraduate students at Rowan University to solicit their participation in the first phase of data collection. To boost the response rate and to encourage students to participate in the online survey, I provided a monetary incentive, a raffle to receive one of three \$50 gift certificates for redemption at the university bookstore. In the email (see Appendix A), I provided the URL to the online questionnaire that was administered through Survey Monkey®; explained the rationale behind the research; and requested the student's participation in the research study (Fowler, 1995). Another email was sent two weeks later to thank those who had already participated and to solicit again the participation of students who did not yet complete the survey. Survey data were collected during the month of January and February 2012. The quantitative data were then analyzed and the findings were reported.

Focus groups. Interviews and focus groups are commonly used to enrich quantitative findings with students' voices (Harper & Kuh, 2007). They are also used to "reveal participants' thoughts on a topic and can be based on interchanges with a group or an individual" (Van Note Chism & Banta, 2007, p. 16). I chose focus groups as one of the data gathering methodologies to help construct the students' perceptions towards the general education program and their undergraduate learning experience (Anfara, Brown, & Mangione, 2002; Morgan, 1988). Focus groups are a "useful exploratory tool" as long as its results are quantitatively confirmed on representative samples (Morgan, 1988). The focus group interviews (see Appendix C) collected indirect assessment data and answered the research questions; offered an in-depth understanding of students' perceptions; and provided recommendations to improve the current general education program. It also provided complete, rich, and detailed explanations of the similar survey questions which

ensured that the survey responses were interpreted correctly (Allen, 2006; Johnson & Onwuegbuzie, 2004; Morgan, 1988). In addition, one of the advantages of the focus group interview method was that it allowed me to observe a great deal of interaction among participants regarding their perceptions within a short period of time (Morgan, 1988). Bellenger et al. (1976) note that focus groups usually generate high levels of involvement and "spontaneous responses" from participants (as cited in Morgan, 1988, p. 18). The participants were encouraged to ask for clarification if they did not understand a question (Allen, 2006).

I designed a focus group interview in which the content was grounded in the quantitative results from the first phase of data collection (Ivankova et al., 2006). In addition, some of the focus group interview questions were adapted from various literature sources, such as the University of North Dakota Bush Longitudinal Study (Kelsch et al., 2004) and Mary Allen (2006), *Assessing General Education Programs*, to specifically target the research questions for this study. The relationship between the focus group interview questions (FQ) and research questions (RQ) are demonstrated in Table 2.

Table 2

Focus Group Questions (FQ) in Relation to Research Questions (RQ)

RQ	FQ
RQ3. In what ways do the qualitative data generated from the open-ended survey question and the focus groups reporting students' perceptions substantiate the quantitative results from the survey?	<p>FQ1. Describe some learning experiences you had in GE courses that helped you develop skills that you will use in real life or on the job? How might these courses have better prepared you?</p> <p>FQ2. In what way did your general education courses help you gain or make progress in developing your critical thinking</p> <p>FQ3. In what way did your general education courses encourage you to participate in political and social activities?</p> <p>FQ4. Describe learning experiences that might allow you to improve your understanding of other countries and cultures?</p> <p>FQ5. How did the general education program help you gain a better understanding of math and science? What can be done to better prepare students in these areas?</p> <p>FQ6. Were there learning opportunities that helped you develop better understandings of technology? How can the university better prepare you in this area?</p> <p>FQ7. How important to you is learning about arts, music, and/or drama? Why?</p> <p>FQ8. Is there anything else you would like to say about your experience with the general education program?</p>

The initial focus group interview protocol was field tested by four Rowan University undergraduate students before data collection and revised based on their feedback. The focus group interviews were then conducted during the month of June 2012. I utilized stratified purposeful sampling to select participants for the focus group interviews (Teddlie & Yu, 2007). Students who participated in the online survey were

divided into three homogeneous subgroups: the freshman-sophomore/non-transfer student subgroup, junior-senior/non-transfer student subgroup, and junior-senior transfer student subgroup with 1-30 transfer credits (Collins et al., 2007). Then students with different academic majors from each subgroup were emailed to solicit their participation in the focus groups. Six or seven students from each of the three subgroups participated in a focus group. Throughout the research process, I ensured participants' confidentiality and privacy by conducting the focus groups in a vacant classroom that provided an uninterrupted and confidential environment (Allen, 2006). Just before I started each focus group, I explained the purpose of the study, clarified how their confidentiality would be protected, and informed them of their rights (Allen, 2006). Participants were given the opportunity to ask questions prior to signing the consent form (see Appendix E) and participating in the focus group interview. I received permission from all to audio-record the focus group interview. I also collected educational demographic information from each participant (see Appendix F). Each of the three focus group interviews lasted for about 50 minutes.

Data Analysis

Data analysis for quantitative strand. I utilized the Predictive Analytics SoftWare® (PASW) to analyze the quantitative data collected from the survey. The survey items were summarized. Chi-square, inferential, and descriptive statistics were used to examine the data in regards to the research questions (Creswell & Plano Clark, 2011). Personal and educational demographic characteristics were also collected and summarized for the purpose of describing the participants and dividing them into comparison subgroups. I analyzed subgroups to investigate the differences in perceptions.

The independent variables in this study included gender, age, race/ethnicity, major, college year, transfer/non-transfer, working/non-working, and full-time/part-time enrollment. The dependent variables were the perceptions of students towards the current general education program and its learning outcomes and their self-perceptions concerning their undergraduate experience and learning. The impact of the independent variables on the dependent variables was studied through the cross-tabular analysis that was obtained through PASW (Creswell, & Plano Clark, 2011). Results from survey data were tabulated and visually displayed to provide a better understanding of emerging themes and results (Allen, 2006; Creswell & Plano Clark, 2011). Finally, I utilized two methods to study the research problem and reduce the uncertainty of data interpretation (Caracelli & Greene, 1993; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009).

Data analysis for qualitative strand. I audio-taped and transcribed verbatim the questions and responses for each focus group (Creswell & Plano Clark, 2011). Then, I identified meaning and structure to the open-ended survey data and focus group interview data through qualitative data content analysis (Anfara et al., 2002; Creswell & Plano Clark, 2011; Elo & Kyngas, 2007; Hsieh & Shannon, 2005). I used inductive content analysis to analytically determine the properties of textual information that was collected from the open-ended survey questions and during the focus group interviews. The inductive approach condenses textual data into general statements (Elo & Kyngas, 2007). I first read responses to identify recurrent and important aspects of students' perceptions (Hsieh & Shannon, 2005). I then designed a coding scheme that guided the consistent review of responses and accurately summarized data (Allen, 2006; Creswell & Plano

Clark, 2011). In order to identify relevant and pertinent elements, collected data were read, reviewed, coded, and broken down into different categories describing students' perceptions (Creswell & Plano Clark, 2011; Elo & Kyngas, 2007; Hsieh & Shannon, 2005). The data were organized into workable categories/themes based on the research questions; the presence of certain words or concepts within texts was identified through conventional content analysis (Allen, 2006; Creswell & Plano Clark, 2011; Hsieh & Shannon, 2005; McMillan, 2007). The most important structures of the communication content were detected by the frequencies of most used keywords (McMillan, 2007). The categories allowed the data to be summarized and reported in an accurate manner. The categories were then revised in order to avoid redundancy; each category was unique in terms of the theme it addressed.

I also transformed the qualitative data by converting it into a quantitative data type (Caracelli & Greene, 1993). Descriptive statistics of frequencies were used to summarize coded data from the open-ended survey question and focus group transcripts. I numerically coded, quantified, and analyzed the presence, meanings, and relationships of concepts within the qualitative categories, then made inferences about the messages within the texts (Caracelli & Greene, 1993).

Integrative strategy for mixed methods research. The quantitative and qualitative strands were integrated in that the survey data analysis informed the focus group participant sampling, interview protocol, and data collection. The two strands were also integrated during data interpretation and reporting (Caracelli & Greene, 1993; Creswell & Plano Clark, 2011; Ivankova et al., 2006; Teddlie & Yu, 2007). During data interpretation and explanation, the qualitative data and their analysis were used to explain

in more depth the statistical results that emerged from the quantitative strand. These data provided a rich understanding of participants' perceptions (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009). The quantified data generated from the open-ended and focus group interviews were also compared with the statistical results obtained from the quantitative strand to provide a holistic picture of students' perceptions during the discussion section and to provide recommendations for future research, practice, and educational policy (Caracelli & Greene, 1993; Creswell & Plano Clark, 2011).

Rigor

A pilot-test of the online questionnaire was conducted to ensure that the survey items were clear and concise to avoid any misinterpretations (Fowler, 1995), to find out the amount of time needed to complete the survey questionnaire, and to determine whether there were any problems with the data collection process (Creswell & Plano Clark, 2011). In addition, two professors who were involved in general education restructuring and assessment were asked to review the survey to ensure the content validity of its items. A check question was integrated into the online survey to ensure that the collected data were accurate. Students who completed the entire survey and who answered the check question correctly were included in the study. External validity, which “refers to the generalizability of results from a quantitative study to other populations, setting, times, and so forth” (Teddlie & Yu, 2007, p. 98), was established by selecting the whole undergraduate student population for the first quantitative phase of data collection.

Similarly, the initial focus group interview protocol was field tested to ensure that the questions were clear and concise. Then, during qualitative data collection, I

paraphrased participants' responses to verify that I understood their responses and to ensure the credibility of data (Allen, 2006). In addition, I did member checking for the qualitative data to ensure credibility (Anfara et al., 2002; Hsieh & Shannon, 2005). Data confirmability was also established by using two different sources of data: focus group interviews and surveys (Anfara et al., 2002). During data analysis, I checked for qualitative data dependability through peer examination and code record strategy (Hsieh & Shannon, 2005). Finally, I used two sources of data collection, survey and focus group interviews, to neutralize any bias related to a particular instrument (Anfara et al., 2002).

Research Paradigm

In mixed methods, inquiry is guided by philosophical assumptions, paradigms, and beliefs that inform the study (Creswell & Plano Clark, 2011). Thomas Kuhn defines paradigm as a set of general beliefs and philosophical assumptions that an individual develops to better understand the nature of the world (as cited in Creswell & Plano Clark, 2011). Paradigm, also known as worldview, is an understanding of a specific phenomenon through one's subjective lens. Creswell and Plano Clark (2011) note that the worldview informs how the researcher conducts and reports the study and shapes the process and language of research.

In this study, I utilized the pragmatist worldview that is commonly used in the mixed methods approach (Collins et al., 2007; Creswell & Plano Clark, 2011; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009). Johnson and Onwuegbuzie (2004) explain that pragmatism views truth and knowledge as concepts that are tentative and changing in nature. Similarly, Teddlie and Tashakkori (2009) define pragmatism as "a deconstructive paradigm that debunks concepts such as 'truth' and 'reality' and focuses

instead on 'what works' as the truth regarding the research questions and investigation" (p. 8). In the pragmatic worldview, the researcher uses multiple methods of data collection to better understand the research problem (Collins et al., 2007; Creswell & Plano Clark, 2011; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009). The pragmatic paradigm is pluralistic in nature and practice oriented. It values both objective and subjective knowledge and underscores the significance of the research questions and the aftereffect of the study more than it does methods (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009).

In addition to the pragmatic worldview, I employed feminist and transformational approaches that value the idea of "multiple constructions of reality rather than a single truth" (Van Note Chism & Banta, 2007, p. 17). The feminist approach underscores transformational, interactive, and inclusive leadership (Rosener, 1995). A transformational leader transforms participants into leaders by helping them shape their values and motives and attain their goals (Burns, 2003). In this study, I empowered students and allowed them to be part of the decision making by letting their voices, views, and opinions be heard and acknowledged (Burns, 2003; Goleman, Boyatzis, & McKee, 2002). I also empowered them by allowing them to be catalysts of change (Goleman et al., 2002). In addition, this study empowered me as an educational leader, especially as I work in the educational assessment field. This study enhanced my understanding of indirect assessment and students' self-perceptions of their learning experiences.

As a feminist leader, I strive to create a safe environment for self-expression and participation, and build strong trusting relationships with students (Rosener, 1995).

According to Burns (1995), “a leader empathetically comprehends the wants of followers and responds to them as legitimate needs, articulating them as values. He helps followers transform them into hopes and aspirations, and then into purposeful expectations, and finally into demands” (p. 143). I listened to students and reflected on their responses so that I would provide recommendations that would enhance students' learning and transform students' undergraduate learning experience (Burns, 1995; Rosener, 1995).

Ethical Considerations

Ethical considerations were very important for the integrity of the research study and well-being of the participants (Teddlie & Tashakkori, 2009). For this study, I gained permission from the participants (see Appendix E) and the Institutional Review Board of Rowan University (IRB) (see Appendix D) before data collection. Approval from the IRB means that my research study followed the ethical standards for research. My study also had minimal risk on the participants because they “experienced no stress beyond what they might experience in their everyday lives” (Teddlie & Tashakkori, 2009, p. 199). Participants were assured that any information they provided would be kept confidential. I am the only one having the ability to identify the participants. Before the focus group interviews, I provided each participant with a consent form that explained the study and ensured the participant’s right to privacy (Appendix E).

Finally, I respected my participants’ rights, values, and needs. This was crucial, especially since my research study was intrusive in nature and it collected information on students’ personal perceptions. During the focus group interviews, I continuously paraphrased participants’ responses to verify that I understood their responses (Allen, 2006). I also did member checking and peer examination to ensure that my participants’

responses were documented and reported properly (Anfara et al., 2002; Hsieh & Shannon, 2005). To conclude, the research design described in this chapter allowed me to collect data to answer the research questions, provide valuable information to improve students' learning, and add to the body of knowledge on this topic.

Chapter IV

Findings

The purpose of this study was to collect, review, and analyze data to investigate the differences in perceptions among undergraduate student subgroups towards the general education program and their undergraduate learning experiences. In addition, the study provided a rich understanding and a holistic picture of students' perceptions towards the general education program and their undergraduate experiences. Due to the nature of a sequential mixed methods design, a summary of the demographic characteristics of the sample and the quantitative results are presented first through simple descriptive statistics and correlations. Then, the qualitative data are presented and analyzed through content analysis. Both quantitative and qualitative data are analyzed in response to the research questions presented in Chapter I. Finally, results are presented using tabular and textual presentations.

Response Rate

The online survey was emailed to all the undergraduate student population at Rowan University, Glassboro, New Jersey. Of the 10,750 undergraduate students, 1,600 participated in the survey, yielding a return rate of 14.88%. However, 1,503 students' responses were included in this study as 97 students did not complete the survey and/or did not correctly answer the survey check question designed to ensure data accuracy. This study followed the sample size guidelines presented by Teddlie and Tashakkori (2009). It is noted that if the population size is greater than 3,000, then the minimum appropriate sample size for the quantitative phase of a mixed methods study should be at least 384 to

estimate the characteristics of the population within +/- 5% (Teddlie & Tashakkori, 2009, p. 183). The final sample size for this study was 1,503 with a 99% confidence interval of +/- 0.023. Thus, the student sample represented the university's undergraduate student population.

Participant Demographics

Demographic information was collected on students who participated in the online survey and focus group interviews.

Profile of the survey sample. Table 3 lists the personal and educational demographic information of the surveyed students. As noted in the Table 3, the majority of students was female (65%, $f=981$), between the ages of 18 and 25 (91.8%, $f= 1380$), and were White/Caucasian (77.5%, $f= 1165$). Most of the students (93.7%) were enrolled as full-time students; more than half (59%) worked on a job during the time school was in session and 50.4% lived off campus. Sixty four percent were transfer students who transferred their credits mainly from a community college. Finally, 35.9% were seniors, 27.2% were juniors, 19.4% were sophomores, and 17.6% were freshmen/first year. The majority of students were enrolled in education majors (23.4%), humanities and social sciences (22.2%), or science and mathematics (15.3%).

Table 3

Demographic Information of the Survey Sample (N=1503)

	<i>f</i>	<i>%</i>
Gender		
Female	981	65.3
Male	522	34.7
Age Range		
18-25	1380	91.8
26-35	71	4.7
36 or older	52	3.5
Racial/Ethnic Identification		
White or Caucasian	1165	77.5
Hispanic or Latino	96	6.4
African American or Black	87	5.8
Asian or Pacific Islander	53	3.5
Choose not to indicate	45	3
Multi-racial	38	2.5
Other	14	0.9
American Indian or Alaskan Native	5	0.3
College Year		
Freshman (0-23.99)	264	17.6
Sophomore (24-57.99)	291	19.4
Junior (58-89.99)	409	27.2
Senior (90 and above)	539	35.9
Major		
Education	351	23.4
Humanities and Social Sciences	334	22.2
Science and Mathematics	230	15.3
Communication and Creative Arts	164	10.9
Engineering	138	9.2
Business	130	8.6
Other and undeclared	83	5.5
Performing Arts	73	4.9
Number of Transfer Credits		
None	546	36.3
1-30 credits	449	29.9
31-49 credits	98	6.5
50-65 credits	216	14.4
65 credits or more	194	12.9

Profile of the focus group sample. Students who participated in the online survey were divided into three homogeneous subgroups based on the findings from the survey data analysis: the freshman-sophomore/non-transfer student subgroup, junior-senior/non-transfer student subgroup, and the transfer student subgroup with 1-30 transfer credits. A purposeful sample of six to seven students with different academic majors was selected from each of the three subgroups to form the focus groups (Collins et al., 2007).

The three focus groups were developed to provide a rich and complete description of survey data, enhance the study, and fully answer the research questions. The first focus group comprised of seven non-transfer students, three of which were freshmen and four were sophomores. Seven non-transfer students also participated in the second focus group in which two were juniors and five were seniors. The third focus group consisted of one junior and five seniors with 1-30 transfer credits. Twenty students between the ages of 18 and 25 participated in the three focus groups. Eight of these students were females, 12 were White or Caucasian, and eight were from historically underrepresented populations. In each focus group, students represented at least five of the seven major academic categories (see Table 4).

Table 4

Focus Group Demographic Information (N=20)

	Non-transfer (Freshman- Sophomore)	Non-transfer (Junior- Senior)	Transfer 1- 30 credits (Junior- Senior)
	<i>f</i>	<i>f</i>	<i>f</i>
Gender			
Female	2	3	3
Male	5	4	3
Age Range			
18-25	7	7	6
Racial/Ethnic Identification			
White or Caucasian	4	4	4
Hispanic or Latino	1	0	1
African American or Black	2	1	1
Asian or Pacific Islander	0	1	0
Multi-racial	0	1	0
Major			
Education	2	1	2
Humanities and Social Sciences	1	2	1
Science and Mathematics	1	1	1
Communication and Creative Arts	1	1	1
Engineering	0	1	0
Business	1	1	1
Performing Arts	1	0	0
College Year			
Freshman (0-23.99)	3	0	0
Sophomore (24-57.99)	4	0	0
Junior (58-89.99)	0	2	1
Senior (90 and above)	0	5	5
Enrolled in Summer Courses			
Yes	3	1	2
No	4	6	4

Preliminary Findings

The preliminary findings of the online survey are presented under two main categories: (a) students' perceptions towards the general education program and its learning outcomes, and (b) students' self-perceptions of their undergraduate learning. The descriptive statistics (mean, frequencies, and percentages) of the survey items are presented in Appendix G in Tables G1-4.

Perceptions towards general education and learning outcomes. Overall, students' responses dealing with their perceptions towards the general education program indicated that the majority agreed that the general education program provided them with well-rounded education and an enriching learning experience, and developed their vocational and occupational competencies. More than half of the students agreed that the general education program offered them an opportunity to explore different fields of knowledge outside their major; prepared them well for the advanced courses in their major; and allowed them to apply what they had learned to real-life situations. Similarly, more than 50% of the students agreed that they were satisfied with the advising process and that the goals of the general education program were well communicated to them. Finally, only 29.7% of students agreed that there were too many choices of general education courses at the university (see Figure 2).

As noted in Figure 3, more than 50% of the students reported that they had learned a fair amount about speaking and writing effectively, developing information literacy skills and critical and analytical qualities, researching and properly referencing the work of others, improving their aesthetic and creative qualities, and fostering their social and/or political activities. However, fewer students noted that they learned a fair

amount about developing their leadership skills and good health habits, and participating in community services (see Figure 3).

In addition, more than half of the students reported that they had learned a fair amount about social and behavioral sciences, human diversity, history and humanities, and other countries and cultures. Fewer students reported that they had learned a fair amount about math, technology, basic science, and a second language (see Figure 4). Finally, the students' self-perceptions towards their undergraduate experience and learning are discussed in the following section.

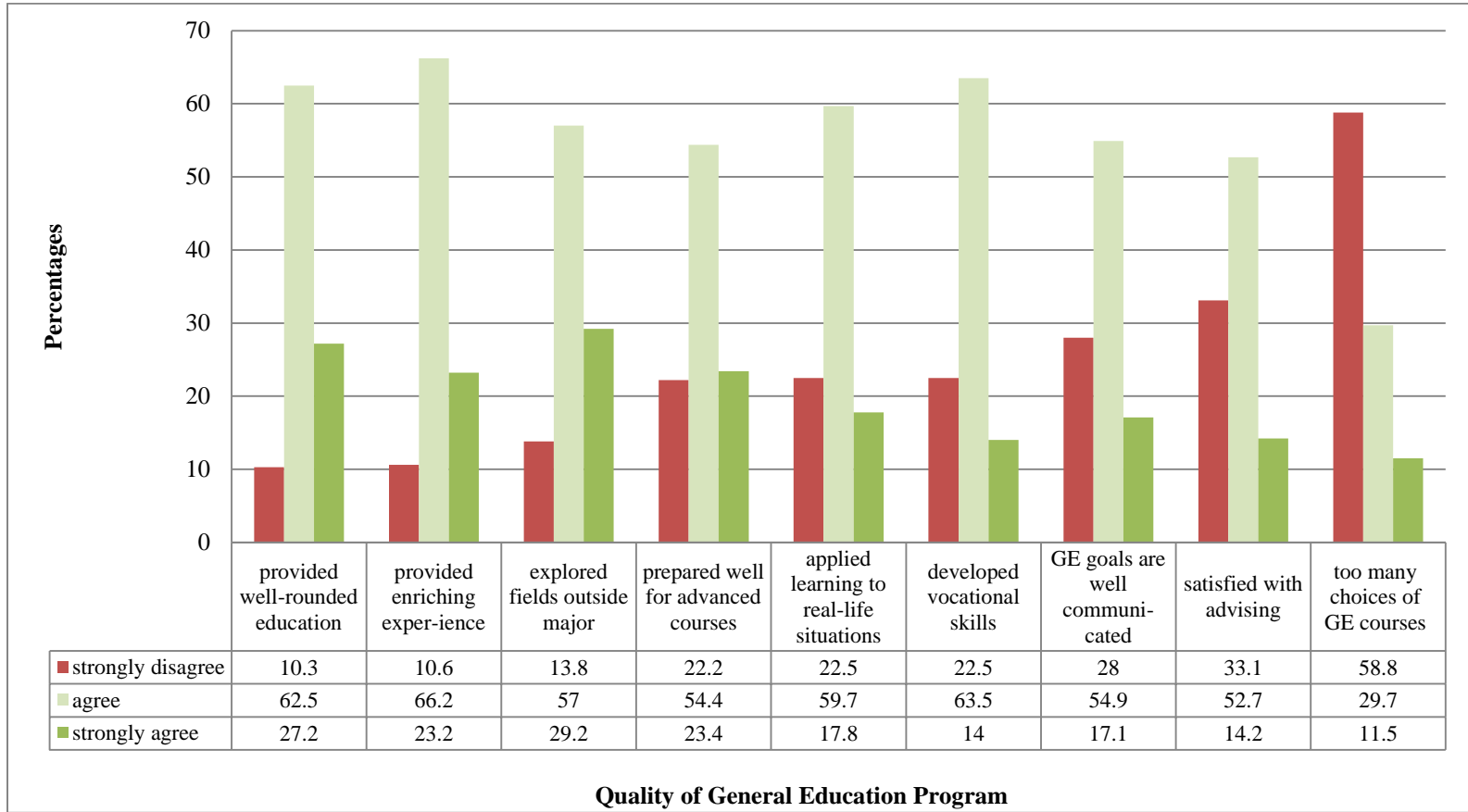


Figure 2. Percent responses towards program quality.

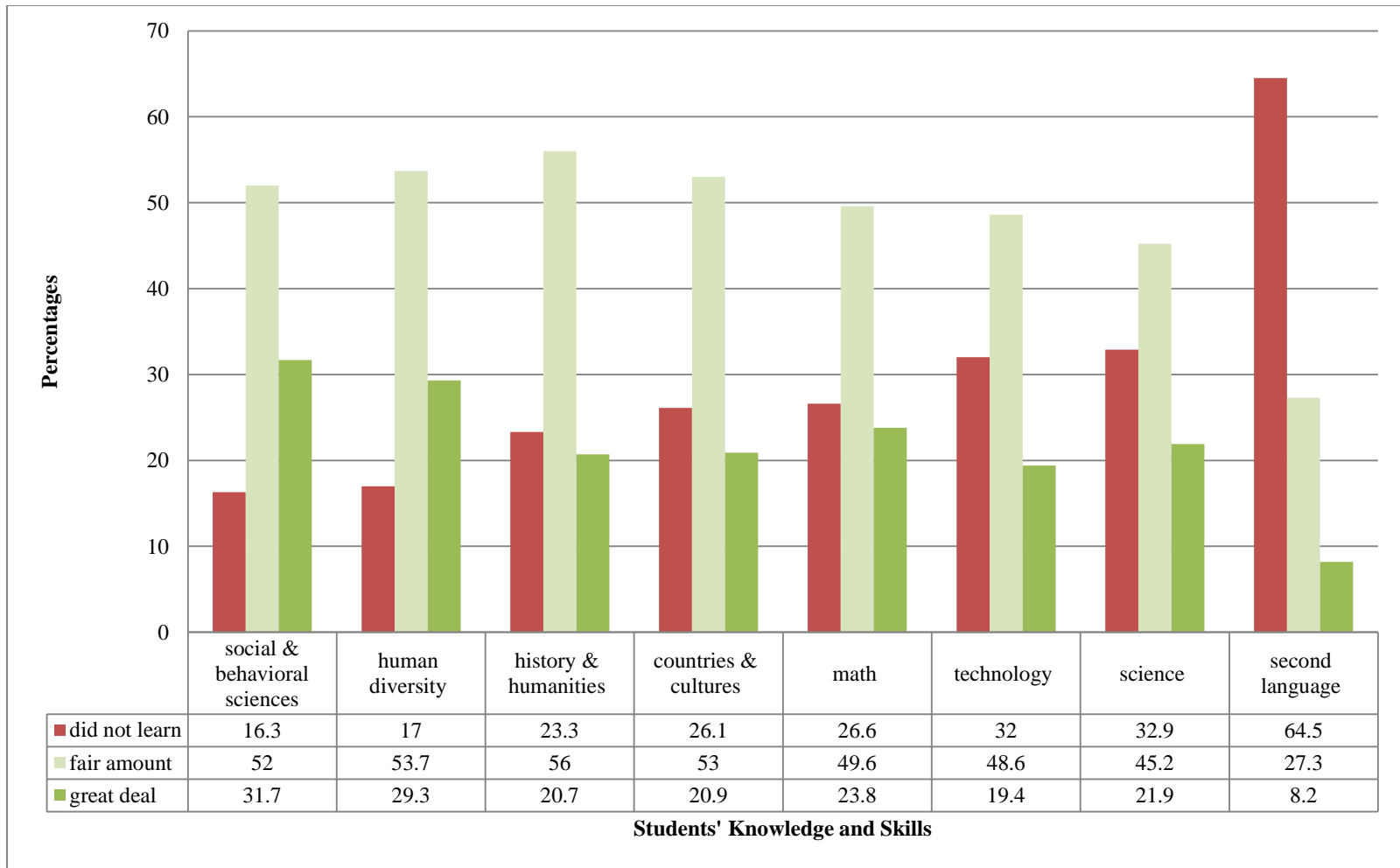


Figure 3. Percent responses towards specific abilities and skills.

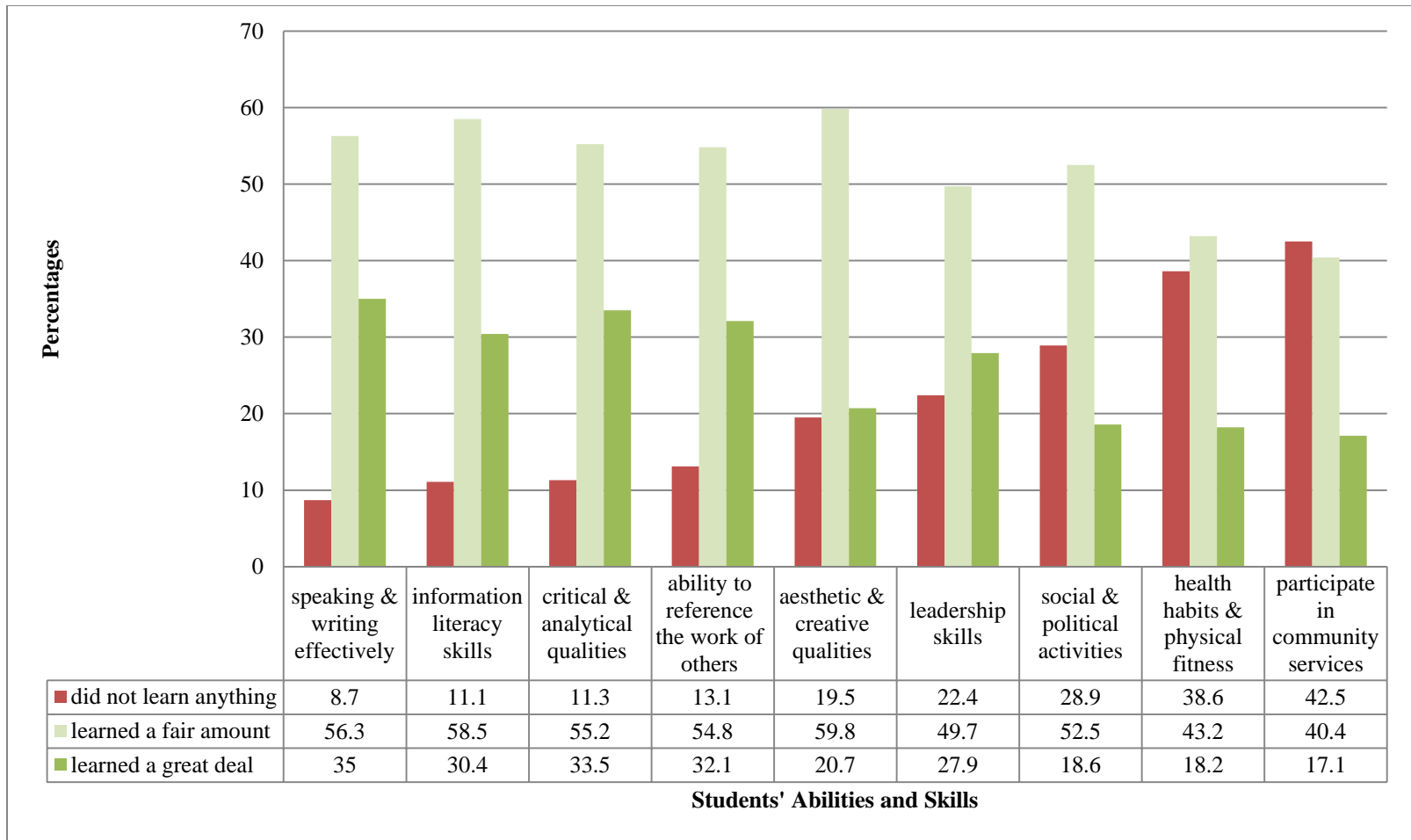


Figure 4. Percent responses towards specific knowledge and skills.

Self-perceptions towards undergraduate learning. An overall look at the students' responses towards their undergraduate experience shows that the majority agreed that they gained a general education and appreciation of ideas. About 54% of the students agreed that during their undergraduate experience they became more cultured and they got prepared for graduate or professional school. However, fewer students agreed that they learned about things that interest them and that they received training for a specific career (see Figure 5).

An overwhelming majority of students reported that it was important or very important to them to speak and write effectively (98.5%); develop critical and analytical qualities (97.3%); understand and use technology (96.3%); develop an understanding and appreciation of human diversity (91.7%); and understand social and/or behavioral sciences (91.3%). It was also important or very important to students to become community leaders (86.1%) and influence political and social values (80%); broaden acquaintance and enjoyment of literature (76.5); learn about arts, music, and/or drama (71.7%); and another language (68%) (see Figure 6).

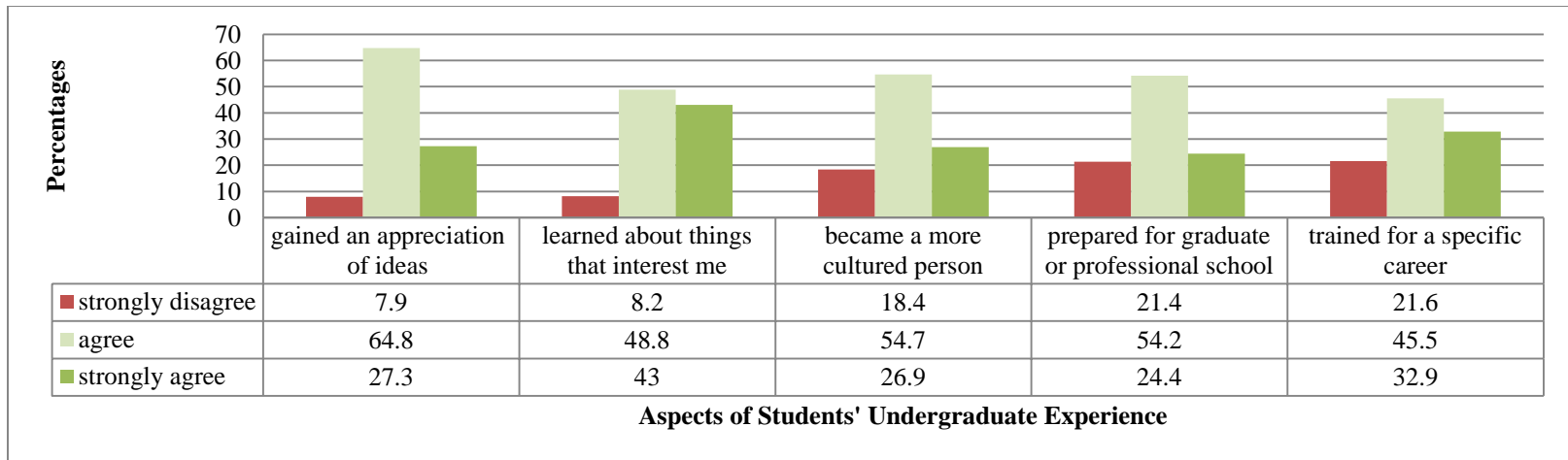


Figure 5. Percent responses towards undergraduate experience.

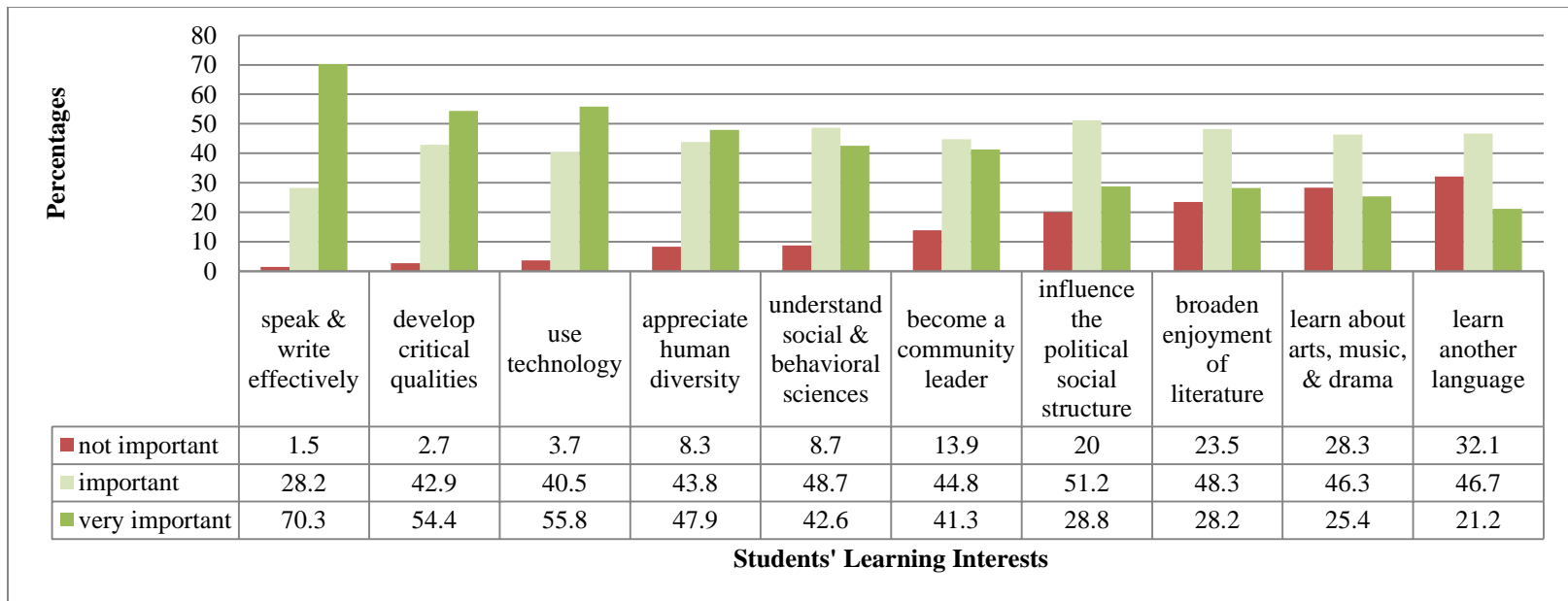


Figure 6. Percent responses towards undergraduate learning.

Quantitative Analysis of Survey Data

Chi-square, inferential, and descriptive statistics were used to examine the quantitative survey data. A Pearson Chi-Square was calculated to determine if there were any significant relationships between the demographic variables (independent variables) and the students' perceptions towards the general education program and their undergraduate experience and learning (dependent variables). Group differences were calculated in terms of gender, age range, racial/ethnic identification, part-time/full-time enrollment, college year, major, work status, living status, and transfer credits. Students' perceptions towards the general education program and their undergraduate experience and learning were found to be statistically significant among students from different academic years and majors, as well as between transfer and non-transfer students.

Due to extensive significant findings, data presented in this chapter pertain only to data themes that emerged from the closed-ended survey items and that were repeated in the open-ended survey item and focus group interviews. A comprehensive list of all significant findings is presented in Appendix G. The quantitative data from the closed-ended survey items were analyzed in response to the first two research questions:

1. What are the differences in perceptions towards the general education program at Rowan University among undergraduate student subgroups?
2. What are the differences in self-perceptions among undergraduate student subgroups towards their undergraduate experience and learning?

Data analysis in response to the first research question. The Pearson Chi-Square test indicated that there were 12 out of 26 survey items with a significant statistical difference when academic years were compared to the perceptions of students

towards the general education program and its learning outcomes (see Tables G5-6). However, only 6 of the 12 survey items with statistical significance are discussed in this chapter. The survey items that discuss preparing students for their major ($\chi^2(1503) = 23.891, p = 0.001$), communicating general education goals to students ($\chi^2(1503) = 15.292, p = 0.018$), advising ($\chi^2(1503) = 21.745, p = 0.001$), course choices ($\chi^2(1503) = 17.462, p = 0.008$), and understanding math ($\chi^2(1503) = 17.783, p = 0.007$) and basic science ($\chi^2(1503) = 26.949, p = 0.000$) were statistically in relation to students' academic year (freshman, sophomore, junior, and senior).

More than a quarter of the sophomores (27.1%), juniors (32%), and seniors (27.5%) strongly disagreed that the goals of general education program were well communicated to them. Interestingly, 23.9% of freshmen strongly disagreed. A larger number of juniors (39.1%) and seniors (35.3%) than freshmen (27.7%) and sophomores (25.4%) were dissatisfied with the advising process for course selection. Similarly, more seniors (63.5%) and juniors (59.7%) than sophomores (56%) and freshmen (50.8%) strongly disagreed that there were too many choices of general education courses (see Figure 7). Finally, 28.8% of seniors noted that they "did not learn anything" about understanding math, followed by 27.6% of juniors, 25.1% of sophomores, and 22.3% of freshmen. On the other hand, more freshmen (35.2%) than sophomores (34.4%), juniors (32%), and seniors (31.7%) "did not learn anything" about understanding basic science (see Figure 8).

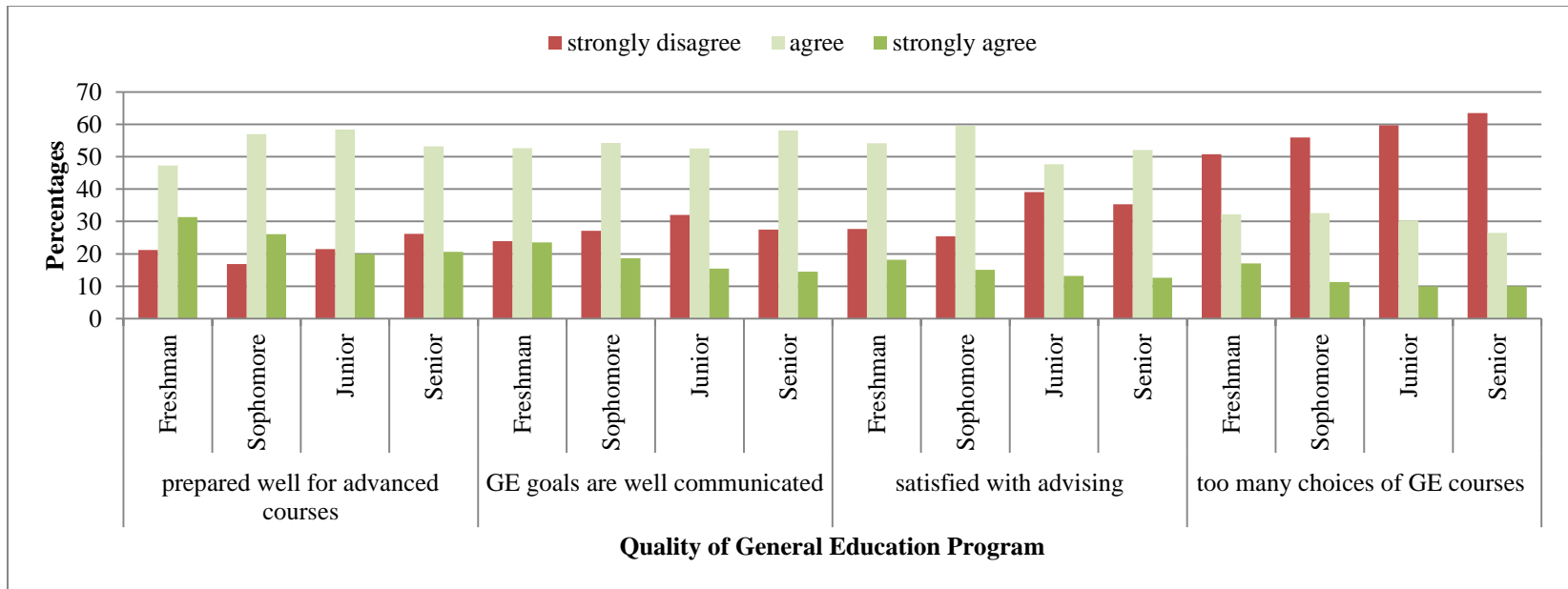


Figure 7. Percent responses towards the program by academic year.

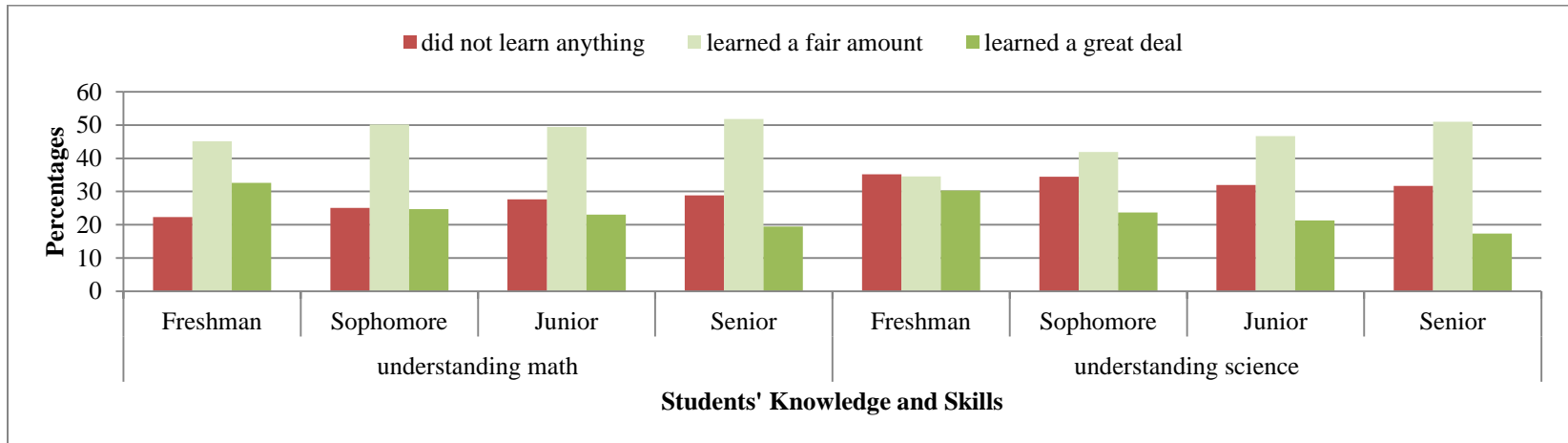


Figure 8. Percent responses towards learning outcomes by academic year.

The chi-square test was performed to examine the relationship between students' perceptions and their academic majors. Fifteen of the 26 survey items about the general education program and its learning outcomes were statistically significant (see Tables G7-8). However, only 9 of the 15 survey items with statistical significance are discussed in this section. The majority of performing arts (66.2%), humanities and social sciences (64.7%), engineering (63.8%), communication (59.8%), science and mathematics (57.8%), and education majors (55%) strongly disagreed that there were too many choices of general education courses ($\chi^2(1503) = 26.384, p = 0.049$) (see Table G7). However, 46.5% of business majors strongly disagreed with this statement.

The majority of students in all majors noted that they learned a fair amount about developing critical and analytical qualities ($\chi^2(1503) = 39.064, p = 0.001$). More students in humanities and social sciences (fair amount= 52.1%; great deal= 41.3%), business (fair amount= 60.5 %; great deal= 30.2%), science and mathematics (fair amount= 59.6%; great deal= 29.1%), education (fair amount= 57%; great deal= 31.6%), and performing arts majors (fair amount= 59.4%; great deal= 28.4%) noted that they developed critical and analytical qualities than communication (fair amount= 51.8%; great deal= 31.1%) and engineering majors (fair amount= 45.7%; great deal= 35.5%) (see Figure 9).

A significant difference in perceptions towards the development of aesthetic and creative qualities exists between majors ($\chi^2(1503) = 17.783, p = 0.007$). Approximately 30% of engineering students and 21.3% of science and mathematics students noted that they did not develop aesthetic and creative qualities in comparison to only 16.7% of humanities and social sciences, and 13.6% performing arts majors. In addition, 37.9% of performing arts, 34.8% engineering, 32.6% of science and mathematics, 31.4% of

education, 27.4% of communication, 25.6% of business, and 22.5% of humanities/social sciences majors noted that the general education program did not foster their social and/or political activities ($\chi^2(1503) = 43.110, p = 0.000$) (see Figure 9).

There were also significant differences in perceptions between majors toward understanding math ($\chi^2(1503) = 145.19, p = 0.000$), basic science ($\chi^2(1503) = 166.08, p = 0.000$), and technology ($\chi^2(1503) = 89.860, p = 0.000$) (see Table G8).

Approximately 41% of performing arts, 39% of communication, 32.3% of humanities and social sciences, and 29.6% of education majors noted that they did not learn anything about math, in comparison to 16.3% of business, 14.5% engineering, and 11.7% of science and mathematics. Similar findings emerged concerning the understanding of basic science and the development of technology in which more students in the performing arts and communication were less satisfied than students in education, business, and humanities and social sciences, followed by science/mathematics and engineering (see Figure 10).

Furthermore, about 32% of performing arts, engineering, and science/mathematics students noted that the general education program did not improve their understanding of other countries and cultures ($\chi^2(1503) = 30.208, p = 0.017$), in comparison to 27.1% of students in education and less than a quarter of communication, business, and humanities/social sciences students. Finally, more than two thirds of education, performing arts, and science/mathematics majors and more than half of engineering, business, communication, and humanities and social sciences majors reported that they did not learn anything about a second language ($\chi^2(1503) = 36.225, p = 0.003$).

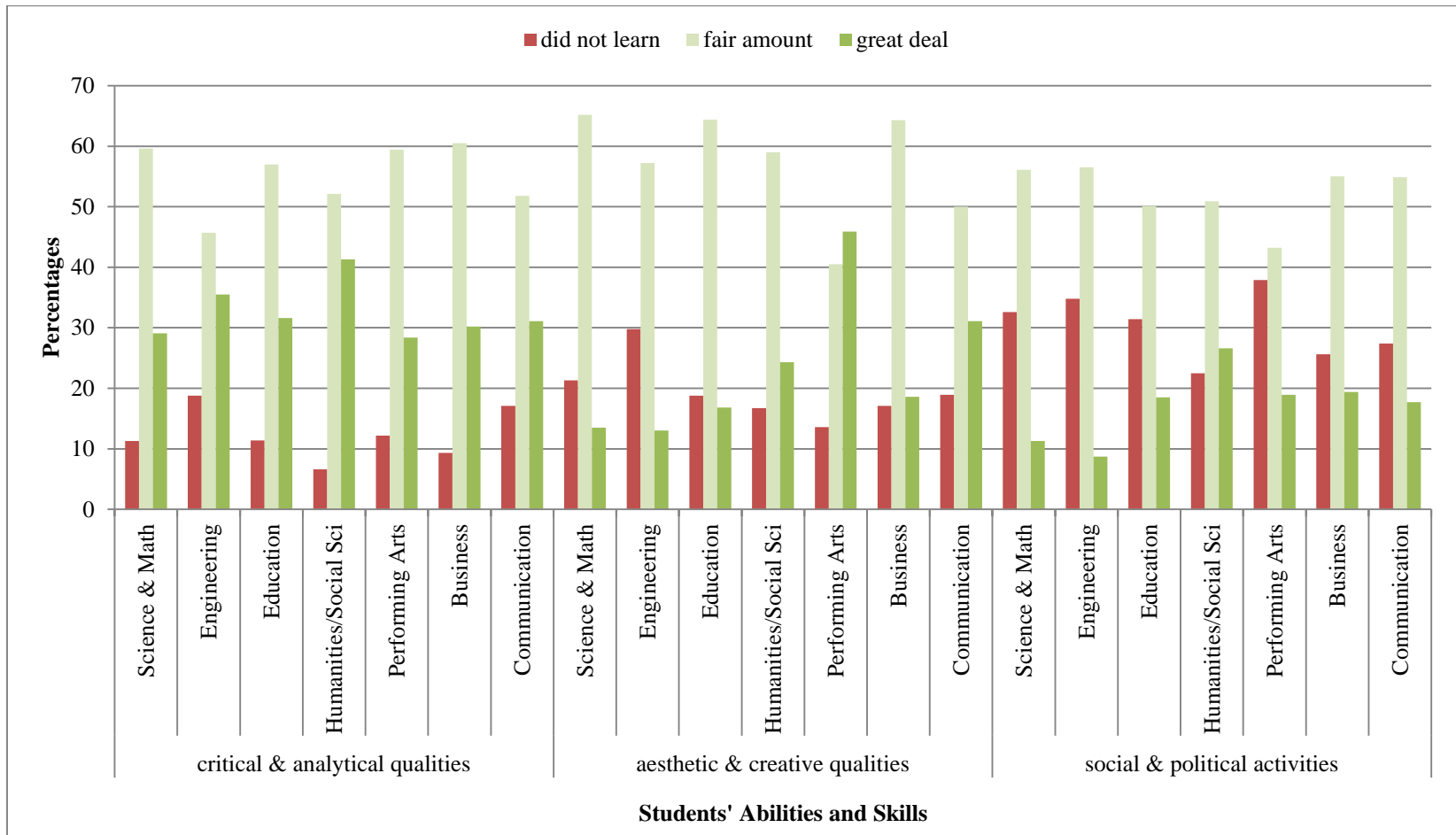


Figure 9. Percent responses towards specific abilities and skills by major.

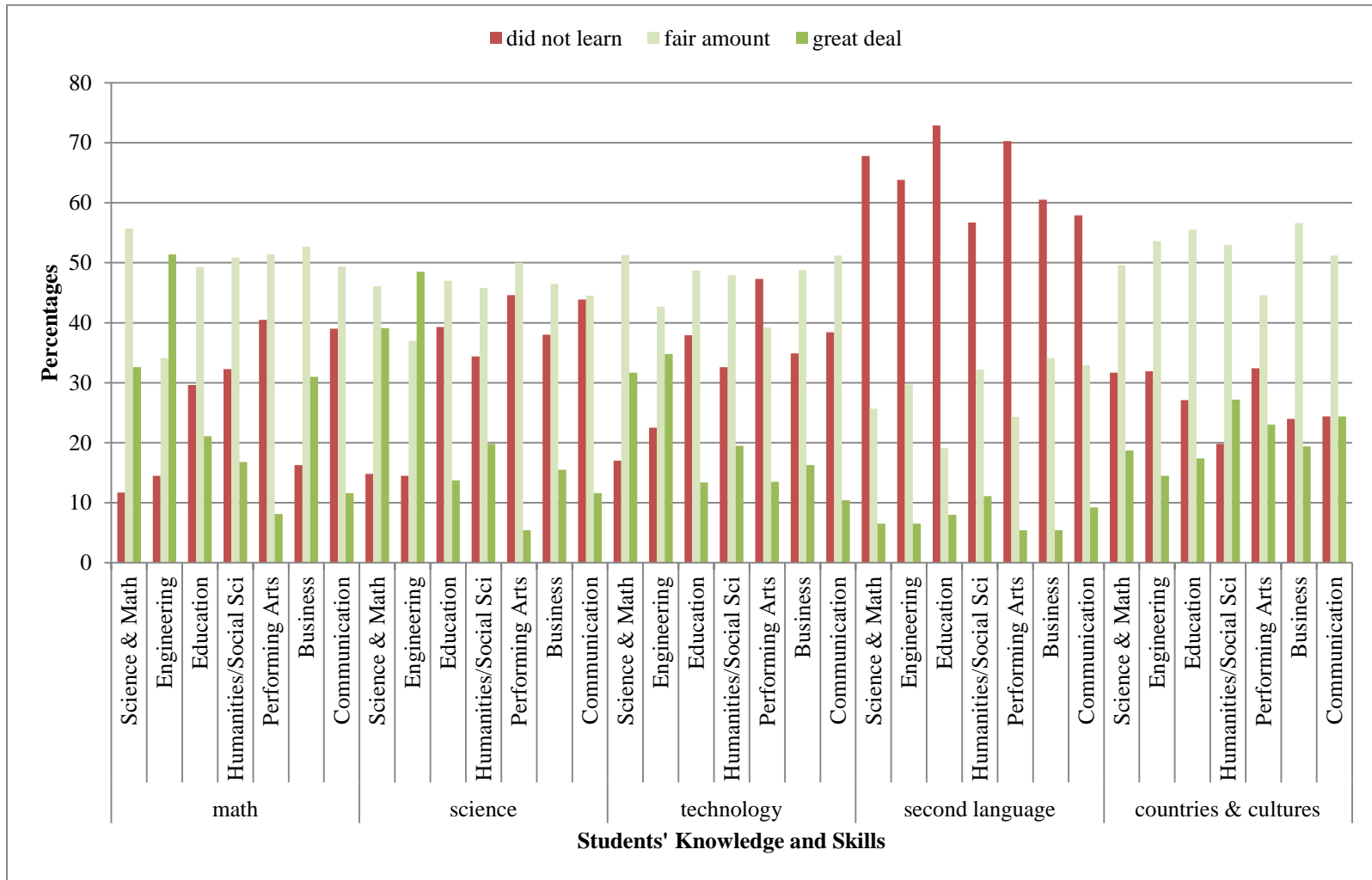


Figure 10. Percent responses towards specific knowledge and skills by major.

The chi-square test was performed to examine the relationship between students' perceptions and the number of transfer credits. Nine of the 26 survey items about the general education program and its learning outcomes were statistically significant (see Tables G9-10). However, only five of the nine survey items that were statistically significant are discussed in this section. Approximately 27% of students with 1-49 transfer credits, 21.1% of non-transfer students, and about 18% of students with more than 50 transfer credits strongly disagreed that they were able to apply what they learned in general education courses to real-life situations ($\chi^2(1503) = 21.084, p = 0.007$). Similar results were reported concerning the development of vocational and occupational competencies throughout the general education program ($\chi^2(1503) = 17.933, p = 0.022$).

In addition, more students with 1-49 transfer credits reported that the general education goals were not well communicated to them ($\chi^2(1503) = 22.899, p = 0.003$) in comparison to non-transfer students and those with more than 50 transfer credits. Significant differences also existed in students' perceptions towards the course choices in the general education program ($\chi^2(1503) = 16.608, p = 0.034$). More than 65% of students with 1-49 transfer credits and about 55% of non-transfer students and students with more than 50 transfer credits strongly disagreed that there were too many choices of general education courses (see Figure 11). Finally, more than 31% of students with 31 or more transfer credits, 26.7% with 1-30 transfer credits, and 20.9% non-transfer students reported that they did not learn anything about math ($\chi^2(1503) = 25.489, p = 0.001$) (see Table G10).

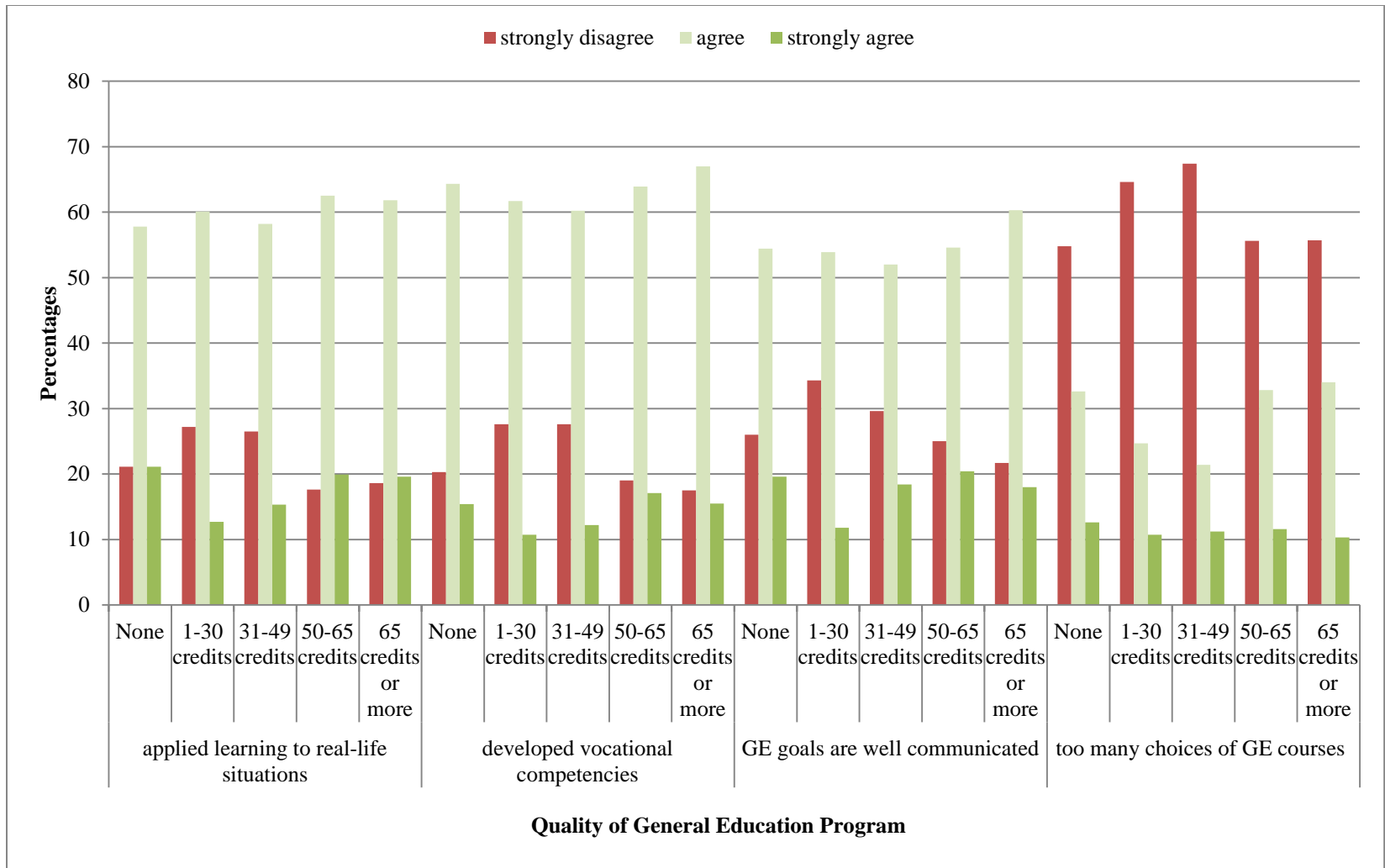


Figure 11. Percent responses towards the program by transfer credits.

Data analysis in response to the second research question. The Pearson Chi-Square indicated that 4 of the 15 survey items were significant when academic year was compared to the self-perceptions of students towards their undergraduate experience and learning (see Tables G11-12). The survey items that discussed career training ($\chi^2(1503) = 19.673, p = 0.000$), graduate and professional school preparation ($\chi^2(1503) = 12.984, p = 0.043$), speaking and writing effectively ($\chi^2(1503) = 13.335, p = 0.038$), and understanding of human diversity ($\chi^2(1503) = 13.671, p = 0.034$) were statistically significant when compared to students' academic year. The majority of students noted that they received training for a specific career: sophomores (agree= 48.4%; strongly agree= 33.7%), seniors (agree= 42.7%; strongly agree= 36.5%), juniors (agree= 45.7%; strongly agree= 33.5%), and freshmen (agree= 47.7%; strongly agree= 23.5%). Similarly, the majority of students stated that they were prepared for graduate or professional school: juniors (agree= 54.3%; strongly agree= 25.4%), sophomores (agree= 57%; strongly agree= 22.3%), seniors (agree= 50.6%; strongly agree= 28.2%), and freshmen (agree= 58.3%; strongly agree= 17.4%) (see Figure 12).

The majority of students noted that it is very important to them to speak and write effectively: seniors (important= 23%; very important= 75.7%), sophomores (important= 28.9%; very important= 69.4%), juniors (important= 31.8%; very important= 67%), and freshmen (important= 32.6%; very important= 65.5%). Similarly, a great number of students stated that it is very important to them to develop an understanding of human diversity: seniors (important= 41%; very important= 52.9%), sophomores (important= 43.6%; very important= 48.5%), juniors (important= 45%; very important= 44.5%), and freshmen (important= 48.1%; very important= 42.4%) (see Figure 13).

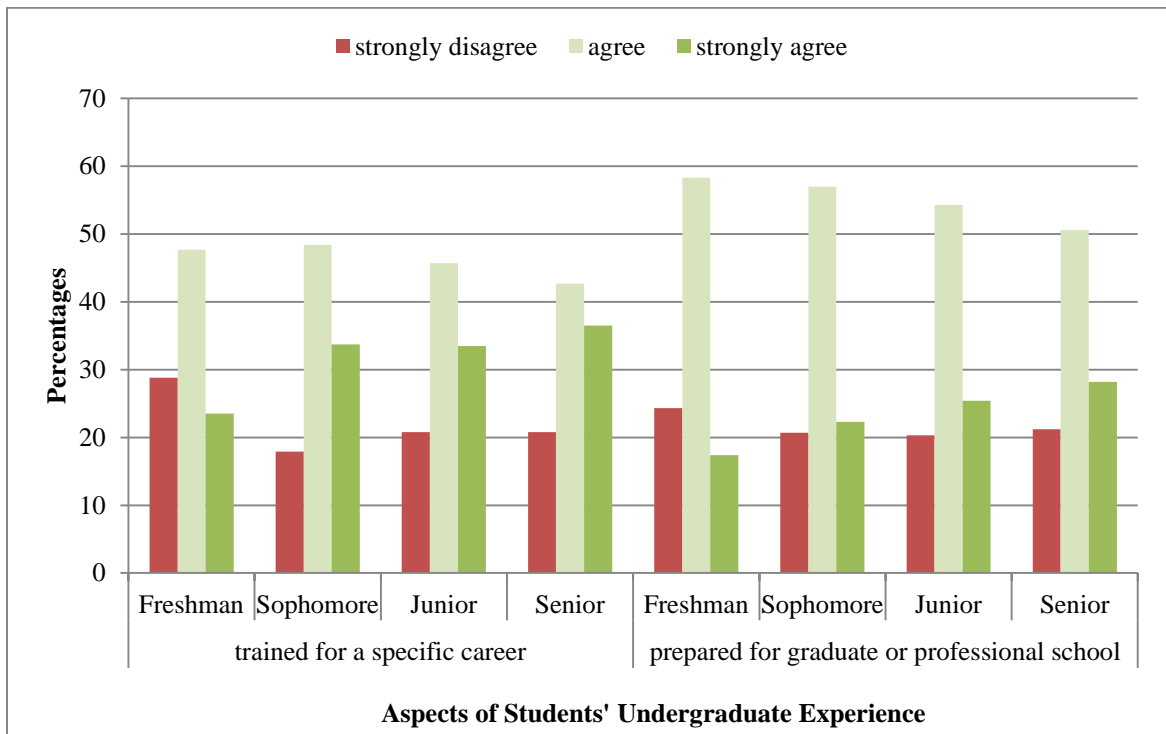


Figure 12. Percent responses towards experiences by academic year.

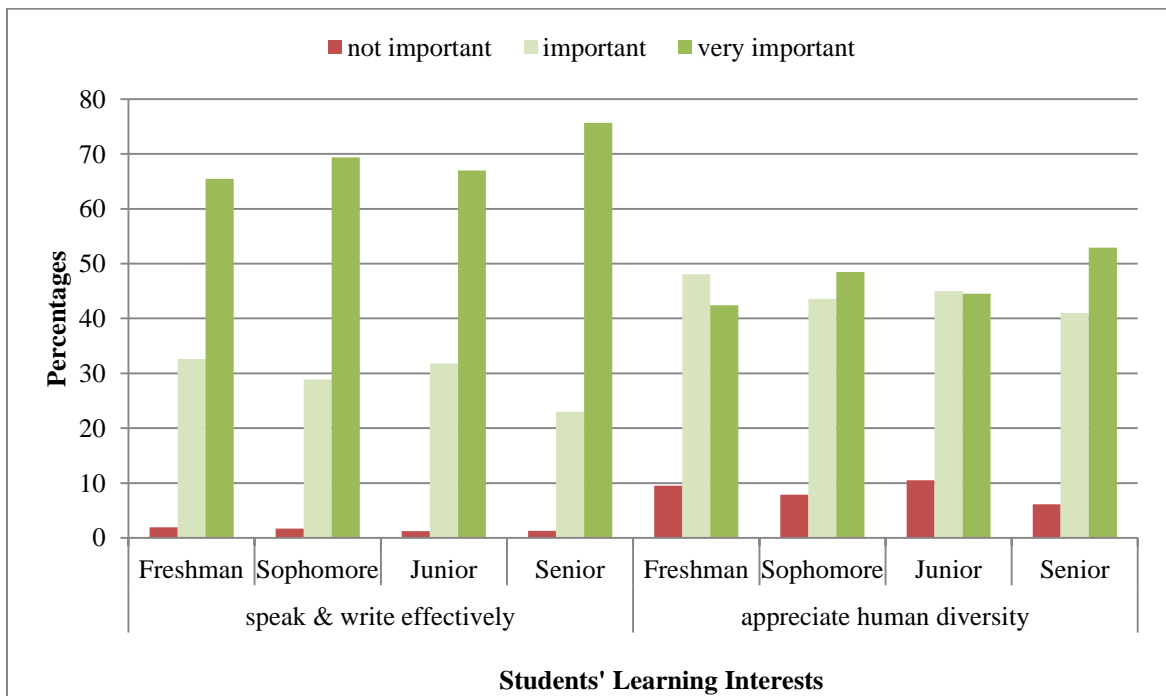


Figure 13. Percent responses towards students' learning by academic year.

Only 5 of the 15 survey items (see Tables G13-14) that were statistically significant when academic major was compared to students' self-perceptions towards their undergraduate experience and learning are discussed in this chapter. Students noted that they received training for a specific career ($\chi^2(1503) = 128.766$, $p = 0.000$). A greater number of education (agree= 47%; strongly agree= 43.9%), performing arts (agree= 29.7%; strongly agree= 59.5%), and engineering students (agree= 34.8%; strongly agree= 47.8%) noted that they received training for a specific career than students in business (agree= 50.4%; strongly agree= 27.1%), communication (agree= 47.6%; strongly agree= 26.8%), science and math (agree= 50.9%; strongly agree= 22.6%), and humanities and social sciences (agree= 46.1%; strongly agree= 24.6%).

The majority of students from all majors, except education majors, noted that it is very important to them to develop critical and analytical qualities ($\chi^2(1503) = 36.780$, $p = 0.002$). The majority of education students noted that it is important to them to develop those skills (agree= 51.8%; strongly agree= 45.6%) (see Figure 14). In addition, the majority of students in engineering (71.7%), science and math (60%), business (58.9%), and communication (57.3%) reported that it is very important to them to understand and use technology ($\chi^2(1503) = 34.106$, $p = 0.005$). On the other hand, more students in humanities and social sciences (important= 43.1%; very important= 39.5%), business (important= 55.8%; very important= 32.6%), communication (important= 50.6%; very important= 27.4%), and education (important= 55.8%; very important= 24.5%) reported that it is very important to them to influence the political structure and/or social values ($\chi^2(1503) = 53.022$, $p = 0.000$) than students in the other majors. Finally, 44.2% of students in engineering, 34.9% in business, 31.3% in science and math, 27.3% in

education, and 26% in humanities and social sciences reported that it is not important to them to learn about arts, music, and/or drama ($\chi^2(1503) = 168.758$, $p = 0.000$). However, only 18.3% of students in communication and 4.1% in performing arts reported that it is not important to develop these competencies related to arts, music, and/or drama (see Figure 14).

The Pearson Chi-Square test indicated that there were 2 of 15 survey items with significant statistical difference when transfer credits were compared to students' self-perceptions towards their undergraduate experience and learning (see Table G15). The majority of students noted that it is very important to them to understand and use technology ($\chi^2(1503) = 18.025$, $p = 0.021$): 64.4% of students with 65 transfer credits or more, 56.2% of students with no transfer credits, 55.6% of students with 50-65 transfer credits, 52.6% of students with 1-30 transfer credits, and 51% of students with 31-49 transfer credits. Similarly, more than half of the students with 65 transfer credits or more (59.8%) and 31-49 transfer credits (52%) reported that it is very important to them to develop an understanding of human diversity ($\chi^2(1503) = 24.348$, $p = 0.002$). However, less than half of the students with 50-65 transfer credits (49.1%), with no transfer credits (46.3%), and 1-30 transfer credits (43.2%) reported that it is very important to them to develop an understanding of human diversity (see Figure 15).

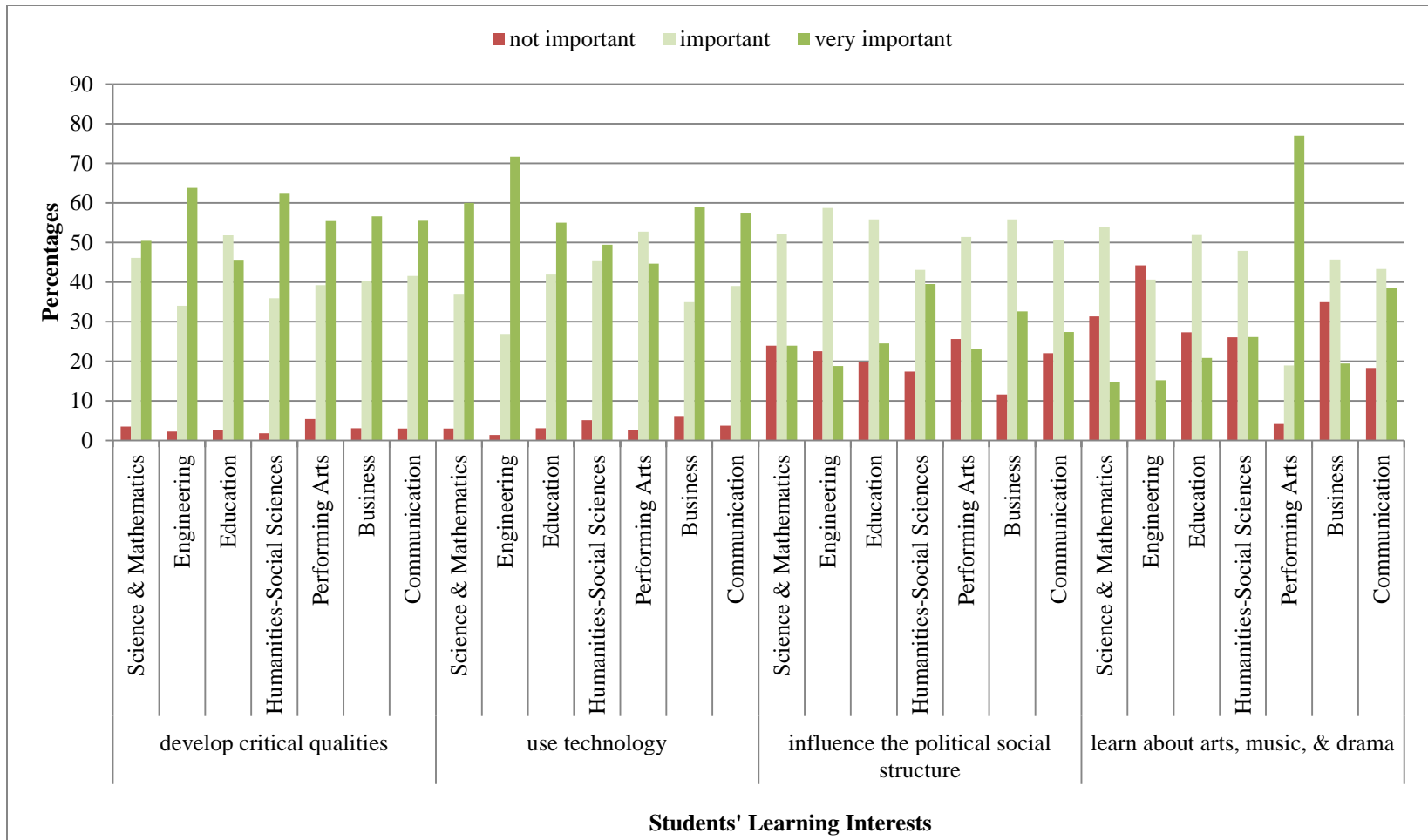


Figure 14. Percent responses towards students' learning by major.

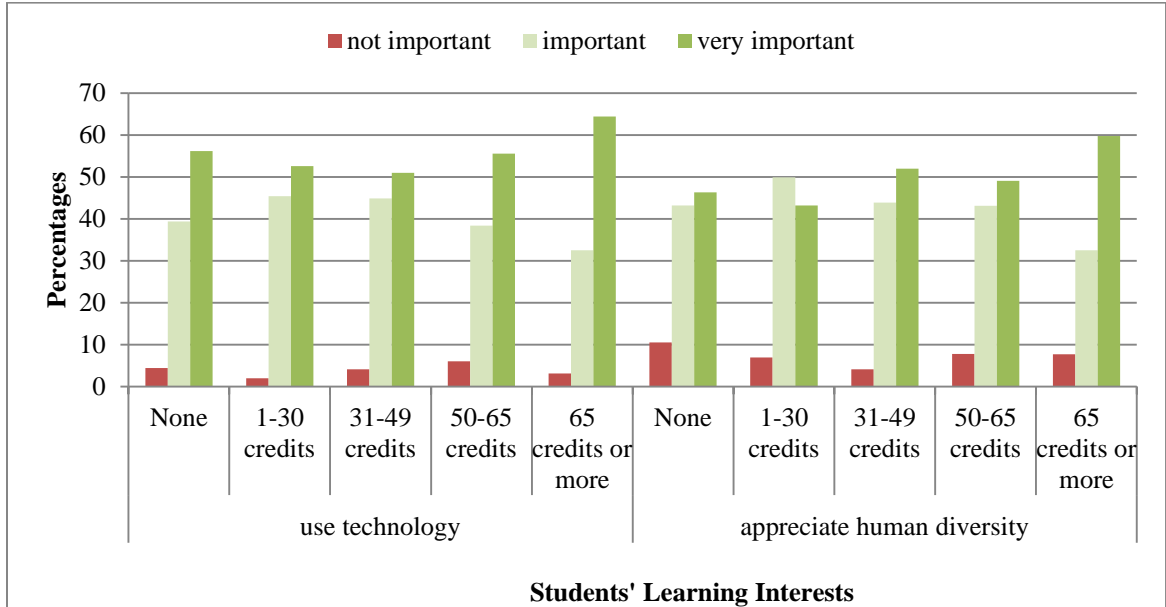


Figure 15. Percent responses towards students' learning by transfer credits.

Qualitative Analysis of Survey Data

Content analysis was used to analytically determine the properties of textual information and to study the qualitative data that emerged from the open-ended survey question. The collected data were broken down into different themes and analyzed in response to the third research question. The qualitative data provided a rich understanding of the quantitative results from the survey.

Close to 26% of students who participated in the survey responded to the open-ended survey question. The open-ended question provided insight into certain aspects of students' perceptions, specifically towards the quality of the general education program, its courses, advisement, and communicating goals and requirements. It also uncovered unanticipated students' perceptions towards the general education faculty members. This aspect of the general education program and students' undergraduate experience was not

addressed in the closed-ended survey items. However, the students chose to elaborate on this aspect in their comments. There were 246 comments on general education courses, 136 on the quality of general education experience, 101 on advisement, 73 on communicating general education goals and requirements, and 72 on faculty members who are teaching general education courses.

The quality of the general education program. Student responses confirm and explain the results of the closed-ended survey items. To exemplify, findings from the survey closed-ended questions indicated that 89.7% of surveyed students agreed or strongly agreed that the general education program provided them with a well-rounded education (see Table G1). Similar findings were reported in the open-ended question in which the majority of students who commented on the quality of general education noted that is "wonderful," "well balanced," and "extremely in-depth." A sophomore, non-transfer, science major student stated, "The general education program at this university is a great program that really helps us to become well rounded students! It allows us to take general education courses in areas other than our intended major."

However, students who were disappointed with the quality of the general education program noted that some general education courses were not challenging enough and were "too easy." A non-transfer junior student from the College of Performing Arts explained, "The general education courses I have taken are too easy and did not seem to have high standards for grading. The workload was not very strenuous. I didn't learn anything, so it felt like I wasted my time." Other students felt as if they were "repeating the stuff they learned in high school." Students preferred to focus their time and energy on courses that were related to their majors. Some also reported that there are

"way too many requirements and no flexibility." Finally, the majority of dissatisfied students noted that general education is a "waste of their time and money." Even a junior student with a math major, who transferred 50-65 credits from a community college, noted, "As a transfer student I did not get to participate in the university's general education courses. However, I have heard many students complain that it was both a waste of time and money when they could have been taking courses that directly correlate to their major." A non-transfer sophomore student from the College of Business noted:

I felt like I was repeating the same stuff I learned in high school. Students should be able to bypass many of these courses. They are a waste of our money and time. We pay too much money on the general education program and we spend the first two years taking classes that are completely unrelated to our major.

General education courses. In the closed-ended survey items, 58.8% strongly disagreed that there were too many choices of general education courses (see Table G1). Similarly, the majority of students who commented on the course options in the open-ended question reported that the university should offer a greater variety of general education courses, especially since many courses are "simply a repetition of other courses." Also, students underscored the fact that general education courses should appeal more to their "interests" and "provide them with a unique and interesting experience." They explained that they are interested in courses that have "hands-on and real life application projects" to better prepare them for their career and life after college. A non-transfer sophomore student from the College of Humanities and Social Sciences noted:

There are a lot of classes that I am required to take in the general education program that I will have little to no use for once I graduate. These courses do not interest me at all. I prefer to take courses that could help me in my future career, instead of sitting through something I am hardly ever going to use.

In addition, students noted that they are mainly interested in taking courses that are only related or incorporated into their majors. A non-transfer junior student in the College of Communication stated, "I do not see a point in forcing a student to take a class that is outside of his or her major." Similarly, a senior student with a computer science major and 1-30 transfer credits explained:

As a student who came to the university knowing that I wanted to be in the Computer Science field I found general education tedious, boring, and at a time, a wasting experience. I only did the work in order to get the grade. I feel I would've been better off able to use those credit hours getting a larger understanding from my Computer Science courses - something that I enjoy. Each time I have taken a general education course, I have done the bare minimum and I can barely remember anything I learned. On the contrary, in my Computer Science courses I applied myself and put many hours working on projects that interested me because I enjoyed them.

Some students pointed out that general education courses could "qualify to fulfill multiple requirements" in order to decrease the number of courses required for graduation. Finally, students suggested that the university might offer more course sections, online and evening offerings, and courses during summer and winter breaks. A junior student in the College of Humanities and Social Sciences and with 50-65 transfer credits, noted, "I had to take most of my general requirements at a community college since most of the general education classes are offered during the day." Similarly, a senior student in the College of Science and Mathematics and with 31-49 transfer credits reported:

There are not that many options for working students. I had to take most of my general requirements at neighboring community colleges since most of the classes are offered during the day while I am working. The university also does not offer winter break or online courses like community colleges.

Advisement and communication. In the closed-ended survey items, 33.1% of students reported that they were not satisfied with the advising process. In addition, 28%

strongly disagreed that the goals of the general education program were well communicated to them (see Table G1). Similarly, in the open-ended question, students reported that they were "unhappy" with the advising process and "greatly disappointed" with the advisors. For example, students noted that advisors are "out of touch," "rude," and "not knowledgeable." A non-transfer, junior student stated, "Advisors should be more knowledgeable about course requirements. They should be nicer to the students, especially since some of them are rude." A junior student with an education major and 1-30 transfer credits stated, "Advisors should be more helpful and knowledgeable with what courses each of their students should take. I have been set back because of communications being unclear and not being informed of certain classes I need to take." Similarly a senior student with an economics major and 31-49 transfer credits explained:

General advisement could definitely improve. During my time as an Economics major I had great advisement but in the CAP center I felt the advisors were out of touch, and did not even know the course requirements well enough to help me.

Students reported that the advisors should be more helpful and make an effort to get to know their students through "more regular guidance sessions." Many students complained about the lack of advisement through extended hours or over the weekends. Furthermore, there is poor communication between advisors and students. Students noted that there should be "better lines of communication of general education requirements so that they do not feel aimless." A sophomore student with an education major and 1-30 transfer credits stated, "Advisement needs to be greatly improved. Advisors should be more available to students. Advisement appointments last up to five minutes and you leave feeling more unsure than when you arrived."

Furthermore, students requested that the general education requirements and guidelines be more clear, organized, and accessible to all students. A non-transfer, sophomore student in the College of Humanities and Social Sciences explained,

Better advertisement of requirements and better communication would make the general education program a little easier to understand. In some areas, there are many options and it is hard to figure out which ones will count towards your general education requirements.

Another non-transfer freshman student with a science major stated, "I believe that the general education goals could be communicated more clearly to incoming freshmen. The university should also make the requirements clearer and more accessible. It should also advertise course options to students." Similarly, transfer students mainly complained that the university was not clear about the general education requirements. In some cases, they had to repeat basic courses that they had successfully completed at a community college because of unclear transfer course evaluation. They stated that the repetition of courses delayed their graduation. A senior transfer student noted, "Asking transfer students to repeat certain courses makes the institution appear to be more interested in generating revenues than the genuine welfare of their student body."

Teaching and learning. In the open-ended question, students commented on a general education aspect related to faculty members and teaching practices that was not addressed in the closed-ended survey questions. Students emphasized the importance of teaching practices in enhancing or limiting their learning experiences. A senior student in the College of Communication and Creative Arts with 31-49 transfer credits, noted, "Everything depends on the professor that teaches a course and how that professor gets to the students." Students stated that some of the faculty members who taught general education courses did not engage students in the classroom. Their lectures were boring

and mainly focused on PowerPoint presentations. A non-transfer, freshman student with an undeclared major stated, “Faculty members need to step away from reading PowerPoint word for word and expect the students to learn from that. Just listening and reading from a PowerPoint does not teach me at all.”

Students noted that faculty members and adjuncts should be evaluated before being accepted to teach at the university. A junior student with an engineering major and with 1-30 transfer credits stated, “The University should hire professors that can teach, not just professors who are smart.” In addition, students were disappointed that general education faculty consisted mostly of adjuncts. A junior student from the College of Science and Mathematics, with 31-45 transfer credits stated, “The university should hire less adjuncts. Adjuncts barely have office hours and it's difficult to seek help from them since they are not present on campus most of the time.” Finally, in the open-ended survey comments, students remarked about their learning experiences with math, science, technology, art, music, social and political activities, and multicultural and foreign languages. These experiences will be further explored and discussed in the focus group interviews analysis.

Qualitative Analysis of Focus Group Data

Data from the focus group interviews were initially coded according to a number of themes that corresponded to the focus group questions. Three major themes emerged from the content analysis of the data and were summarized through descriptive statistics of frequencies: real life and job preparedness, academic preparedness, and student engagement.

Real life and job preparedness. During the focus group interviews, students listed five major aspects of the general education program that helped them develop skills for real life and future jobs: public speaking, writing and researching information, resume and interview workshops, classroom discussions on current issues, and computer skills. Four students noted that the general education program did not help them develop skills for real life or their profession. A sophomore non-transfer student with a business major stated, "The general education program didn't help me be better prepared for my future career in business. Most of the general education professors are just lecturing and talking. Courses should have more hands-on applications." Similarly, a non-transfer senior student with a humanities and social science major noted:

I did not learn that much about real life and my future profession. The general education courses should be a lot more hands-on. I really get bored just sitting there and hearing the professor talk and then telling me what to read. I then come to class and get tested on this information and end up not learning anything.

At the beginning of the focus group interviews, six participants stated that "nothing really comes to mind." Then as the discussion progressed, nine students reported that the Public Speaking course was very helpful because it developed communication skills that can be directly applied to their profession. They indicated that this course provided them with information and skills to become more confident in presenting themselves in a professional manner. A senior non-transfer student in the College of Science and Mathematics explained:

The public speaking course prepared me for my future job. I got a better perspective on how to give presentations or give my viewpoint in a formal manner. I think that a lot of people are really bad at public speaking. But realistically, in any job, you need to present yourself professionally.

Moreover, eight students reported that College Composition I and College Composition II helped develop their writing skills and research abilities. It also prepared them for their majors, career, and real world (see Table 5). An education, senior student with 1-30 transfer credits explained:

When I took the Composition I course, I thought that it was just going to be like another writing class. But in addition to developing my writing skills that are crucial in any profession, my professor chose current topics that are relevant and that I could relate to. It made me aware of the world I was living in.

In addition, four students noted that the workshops on how to write a resume and interview for a job were very helpful. These workshops helped them develop competencies to increase their marketability and employability. However, students stated that many skip these workshops since they are not required as part of the general education program and are offered outside the classroom. A non-transfer, senior student with an engineering major stated:

Many students aren't familiar with professional things as far as resumes and interviews. Resumes and interview workshops that are offered in the Student Services Center are very important. However, many students do not take time out of their day to do things they're not required to do.

Finally, two students noted that in the Computing Environments course they developed computer skills such as the ability to use Microsoft Software and design websites. They noted that these skills are important for any student in any profession. Two students reported that discussing current topics and issues in some of their general education courses better prepared them for life. A non-transfer, freshman student with a communication and creative arts major noted, "Class discussions in a general education psychology course opened my eyes to a lot of things that happen in the world and provided me with skills to work with different people." In summary, students

recommended that general education courses should be more geared towards hands-on activities, group work, and service learning. Courses should not "be limited to lecturing."

As a non-transfer, junior student with a humanities and social sciences major explained:

The only general education course that provided me with a hands-on experience was a sociology class. I did a service learning project. I liked it because I was exposed to things other than just reading about sociology topics. I got to see a lot of the service organizations around this area. I even ended up joining one. Most probably, I wouldn't have joined this organization if I wasn't enrolled in this class.

Academic preparedness. Students discussed several aspects of their general education learning experience that fostered or hindered their development of critical thinking, understanding of math, science, and technology, and learning about arts, music, and drama.

Developing critical thinking. Five major aspects of students' learning were highlighted in the focus group interviews concerning the development of critical thinking competencies: in-depth thinking, classroom discussions, applying learning, writing research papers, and thinking outside the box (see Table 5). Seven of the 20 students noted that the general education program did not help develop their critical thinking. They noted that most general education courses were focused on basic concepts that did not require in-depth thinking. A transfer, junior student with a science and mathematics major stated:

Most of the critical thinking that I've done was within my major classes because they required in-depth thinking. I don't think I've ever really covered it in my general education courses. You are usually given a topic and asked to research that one topic and then you write about it instead of having to compare it to something else or apply it in a different context.

Students added that the courses that developed their critical thinking were mainly in their major. A non-transfer, junior student with a business major explained:

The only place where I really developed my critical thinking was in my major courses. It wasn't really in any of my general education courses. I did not have to critically think too much in the general education courses. It's just like you go through the motions because all they do is really tell you to read, study, take tests, and the class is over.

On the other hand, students who developed critical thinking in general education courses noted that it allowed them to think outside the box and apply what they learned to new situations. A non-transfer freshman student with an education major noted that, "The World Regional Geography course made me think critically. I learned how different cultures were inter-connected. It made me think and analyze the different aspects of cultures in a new way. I really had to think outside the box." Other students noted that researching interesting topics in general education courses, such as in sociology and public speaking courses, strengthened their critical thinking. A senior non-transfer student with a humanities and social sciences major noted, "I improved my critical thinking in some of the general education courses that allowed me to research articles in my specific area of study. I then had to write a paper by synthesizing information and reflecting on it." In addition, students explained that bringing in different viewpoints, analyzing, and discussing cultivated their critical abilities. A non-transfer, senior student with a communication and creative arts major stated:

One general education course that strengthened my critical thinking was a sociology course. We discussed several controversial issues such as racial profiling. It was basically a shocker for some people in the class to hear stories about social profiling. During these discussions, we brought in different points of views, analyzed, and reflected on them.

Understanding math and science. Four aspects of learning were discussed concerning the understanding of math and science: applying learning, feeling failure, student interests, and faculty members (see Table 5). More than half of the students reported that taking math and science courses made them feel bad about themselves because they are not good at these subjects. They have a tough time understanding math and science concepts, especially since they are not related to their major. It seems that the major issue is that the students do not understand and appreciate the value of science and math. One non-transfer, senior student with an education major explained, "I am very upset with the whole math general education requirement. I am not going to use it and I am not good at it. I feel like a failure. I don't like this feeling!" Another non-transfer, freshman student with a performing arts major noted, "I don't think the science courses are applicable at all. I took an anatomy course and I do not understand its benefits. Not one bit! As far as physics and chemistry, I would sit there and I would feel dumb!"

Nine students reported that they are not interested in math and science because they do not apply to their majors. A transfer, senior student with a humanities and social sciences major noted, "Math and science are not related to my major and I do not want to go anywhere in that direction." Similarly, a non-transfer, freshman student with a communication and creative arts major stated, "I am a communication major. I don't need math. I've never been good at math and almost failed. There is nothing in my major that has to do with math or science." Some students noted that they only take these courses because they are part of the general education requirements. On the other hand, four students reported that they "love" math and science because they are related to their major. About three quarters of the students stated that their understanding of math and

science would greatly improve if the faculty members incorporated "hands-on learning" and explained their usefulness. Students emphasized the importance of connecting math and science to real life applications. A sophomore, non-transfer student with a science and mathematics major stated, "I was always good at math. But I could see how some students struggled with it. Faculty members should incorporate more group work or hands-on learning instead of just lecturing so that students could better understand math concepts." A transfer, senior student with a communication and creative arts major stated:

I was never really good at math, so I was never interested in it. But the professor that I had was really good with how she taught it. She gave a lot of hands-on activities and related it to real life situations. She always reached out and tried to find another way of doing things to make all the students understand.

Half of the students complained that many faculty members teach math and science at a fast pace and at an advanced level. A non-transfer sophomore student with an education major stated, "Faculty members are not teaching at the pace of the students. They talk on a level that's very advanced. Students can't really keep up with them and they are left behind to struggle." Other students noted that some faculty members intimidated them, which deterred them from asking clarifying questions. A non-transfer, sophomore student with a humanities and social sciences major stated:

Since I've been here, I've slowly but surely hated math a little bit more than I did before. Professors made it that much harder for me. I love math, but the professors are not working at the pace of the students. They only care about grades, tests, and homework. They intimidate students and do not try to help them. They're working on the straight agenda and if you're not up with the agenda, then you're behind.

Three students from the freshman-sophomore group noted that they did not take any science or math courses so far. As a result, they did not provide any comments. Finally, some transfer students noted that the transition to the university was hard. The

courses that they completed at the community college were easy and did not prepare them well. A senior, transfer student with an education major explained, "The science transition was tough. I completed a science course at a community college with an A grade. But I struggled with my first science course at this university."

Developing competencies in technology. Half of the students stated that they did not learn anything related to technology in general education courses. The other half noted that they only learned basic computer skills and software in one general education course, Computing Environments. However, they stated that learning basic computer skills was not really beneficial because they have been using computers since they were young. They are interested in learning more advanced technology. A senior, non-transfer student with a science and mathematics major stated, "Courses in my major are geared toward technology because they deal with the computer and networking stuff. But there was no general education course that developed my technology skills." One senior, a transfer student with an education major explained, "I took the Computing Environments course that was more about Microsoft Word, Excel, and PowerPoint. There was nothing I learned in that class that I did not know before. I have been using computers since I was in third grade." A non-transfer, freshman student with a performing arts major noted:

We all have been on computers since we were kids. If there is something that you forget or never really learned, you can probably go on YouTube, look up a video, and learn it in like a minute. A class that just teaches you about Microsoft Office and other software, that we've used hundred times, is not useful. The courses should focus on advanced technology. Maybe learn about hardware and how technology works.

Eight students suggested that instead of offering a class on technology, technology should be integrated into the general education program and undergraduate experience. A sophomore, non-transfer student with a business major stated,

“Technology is advancing at an increasing rate and things are getting more complicated. The university should not just add another technology course into the program. Instead, it should integrate technology into the whole undergraduate experience.”

Finally, students explained that their technology learning experience was greatly impacted by the faculty members teaching their general education courses. One senior, non-transfer student with a humanities and social sciences major stated:

It all comes down to the professor. I actually had a professor who made his class interesting by using the technology in the classroom. He taught us how to use star maps and everything. And his quizzes were based on what the student knew using the technology. And then there is another professor who tries to do everything right from the book. He didn't know how to use technology.

Students noted that some faculty members integrated technology into their classrooms and encouraged students to utilize it. Others did not know how to use technology and hindered their students from developing competencies in technology.

Learning about arts, music, and drama. Students discussed two main learning aspects concerning arts, music, and drama: understanding the benefits and applying learning (see Table 5). Three students indicated that arts and music are very valuable aspects of the general education program. They added that all students should learn, understand, and value them. A non-transfer, freshman student with a performing arts major noted, “I definitely believe that art and music are important. They are very valuable and everyone needs to learn them. They are so influential, but some students don't understand that. Music tells you a lot about your culture and yourself.” However, the majority of students noted that they do not understand the value and benefits of learning arts, music, and drama. One freshman, non-transfer student with an education major noted, “I don't see how arts and music would benefit me.” Students complained about

memorizing information in art and music classes instead of learning information that they can use. A non-transfer, senior student with an engineering major stated, "It's pointless to study art and music! Why do I need to waste my time and money?" Another senior, transfer student with business major stated, "Memorizing information in one of the general education art classes did not make me a better person. I didn't grow from that." Students reported that they are just taking these courses to meet their general education requirements. A non-transfer, junior student with a humanities and social sciences major stated:

Art and music are important. But I don't think the general education classes that I chose were useful. I took an art appreciation class where I was tested every couple of weeks. I just had to memorize paintings and information about their authors or who designed them. Such classes are shallow. They did not help me because I did not learn how music can be used to influence our lives or how art can be used for certain medical purposes. You just memorize information to get a good grade and that's it.

Six students noted that they would like to better understand the applications of art, music, and drama and how they can influence their lives. A senior, non-transfer student with an education major explained:

I did not really think that art and music are important, until I learned something that amazed me. I learned about music therapy where they take kids with severe autism and they play music and sing for them. A child with autism who couldn't talk is now singing the lyrics while someone is playing the guitar with him. This made me appreciate the value of music.

Student engagement. Two aspects of student engagement were discussed during the focus group interviews. Students reflected on their engagement in political and social activities and their involvement in learning opportunities that enhanced their understanding of other countries and cultures.

Participating in political and social activities. Four learning aspects emerged during the focus group interviews concerning students' engagement in political and social activities. Students talked about the following learning aspects: involvement outside the classroom, discussing and researching current issues, student interests, and avoiding controversial topics (see Table 5). All students in the three focus groups noted that they had never been involved in any social or political activities outside the classroom. One junior, transfer student with a science and mathematics major stated, "It is good to be politically and socially involved at the university, especially since I don't watch the news. But I have no idea what's going on outside of my circle of friends and outside of my classes." Others noted that the general education program did not encourage them to do things outside of the classroom that they would not have normally done. A freshman, non-transfer student with a communication and creative arts major explained, "The only opportunity for students to be actively involved in current political or social activities outside the classroom is through joining a club or an organization. Other than that, there is no active involvement in the general education classroom." In addition, 14 students reported that discussing, researching, or writing about current social and political issues increased their awareness. These courses were mainly College Composition I and II and sociology courses. A senior, non-transfer student with an education major noted, "In College Composition I and II courses, we discussed political and social issues, such as, the issue of abortion, voting age, and women's rights. It made us think in a different way."

Similarly, a junior, non-transfer student with business major stated:

I wouldn't say any of my general education classes directly involved me politically or socially. But in some of my general education classes, we discussed

and wrote papers on political and social events. We shared our opinions which made us think more critically and be more informed.

Twelve students noted that they are interested in being more involved in social and political activities to be better prepared for the real world. One senior, non-transfer student with an education major stated, "It is important that everyone get involved in politics and what their government is doing, or they will be lost when they actually get out into the real world." Two non-transfer students noted that many students are not interested because "they just don't want to know." Finally, four students noted that political and social issues are usually controversial. They explained that many faculty members avoid discussing social or political topics so that they do not have to deal with students' emotional reactions and disagreements of values. A senior, non-transfer student with a humanities and social sciences major explained, "I feel like in many courses the professors try to steer the class away from talking about current political and social issues because they can be controversial and a fight could start in the class."

Understanding other countries and cultures. Five learning aspects emerged from the focus group interviews concerning the understanding of other countries and cultures. These learning aspects are: involvement outside the classroom, importance, student interests, course readings, and learning another language (see Table 5). The majority of students (15 of 20) reported that they learned "nothing" about other countries and cultures in the general education program. Five students noted that reading assignments in some of their general education literature, sociology, and multicultural courses provided them with some information. A non-transfer, sophomore student with a science and mathematics major noted, "Reading assignments in the Western Literature course gave students a little insight on other cultures through the authors' works and writings. I also

feel like a lot of students get their cultural background from world languages." Four other students noted that language courses provided them with global and cultural background information. However, students pointed out that what they learned depended on the faculty member teaching these courses. A non-transfer, junior student with a humanities and social sciences major stated:

I took Spanish and Italian this year and I think that learning about other countries and culture depends on the professor. In the Spanish course, I did not learn anything about the culture. Whereas, the professor who taught the Italian course, wanted us to learn about the Italian language, people, and culture.

An overwhelming majority of students stated that learning about other countries and cultures "cannot be done in a classroom." Students noted that it should be done outside the classroom by interacting with diverse groups, going on field trips, joining multicultural clubs, and studying abroad. A senior, non-transfer student with a communication and creative arts major stated:

I don't think you can really learn about other countries and cultures in a classroom. That's really hard to do. You need to really immerse yourself in the culture. I took a German course and I do not remember anything. But then I went on a field trip to Germany and that changed everything. That kind of tied it all together. It was awesome! This really helped me learn about their culture, by seeing it, talking to people, and visiting the cities. That's where you learn culture. You don't learn it in a classroom.

One transfer, senior student with an education major noted, "Coming to a diverse campus opened my eyes to different ways of living. I learned so much about others outside the classroom than in the classroom. I interacted with a diverse group of friends on and off campus." Finally, eight students noted that they are interested in learning about other cultures, beliefs, traditions, while three are not. Nine students reported that regardless of their major, it is important to them to be educated about other countries and exposed to different cultures. This allowed them to develop skills and knowledge to

interact with individuals from different backgrounds. A non-transfer senior student with an education major noted:

It is very important to me to learn about other countries and cultures because I should be a citizen of the world rather than just my country. I have to understand different cultures to be a well-rounded person. When I go out into the real world, I then can understand people's motives and where they come from.

On the other hand, two students did not believe that this is important to them unless it is related to their majors or if they were going to travel to another country. A non-transfer, sophomore student with a business major noted, "It is not that important to learn about other countries and cultures unless you are traveling to that country."

Table 5

Subthemes and Frequencies Among Student Subgroups

Subthemes	Aspects of students' learning	Non-transfer (freshman-sophomore) n=7 <i>f</i>	Non-transfer (junior-senior) n=7 <i>f</i>	Transfer 1-30 credits (junior-senior) n=6 <i>f</i>
Real life or job preparedness	Public speaking	0	6	3
	Writing & researching	0	5	3
	Professional workshops	1	3	0
	Classroom discussions	2	0	0
	Computer skills	0	2	0
Developing critical thinking	In-depth thinking	2	3	2
	Classroom discussions	1	4	2
	Applying learning	2	3	2
	Writing research papers	0	4	0
	Thinking outside the box	2	1	1
Understanding math and science	Applying learning	4	7	3
	Feeling failure	3	5	4
	Student interests	4	6	3
	Faculty members	4	3	3
Developing competencies in technology	Integration across program	2	3	3
	Limited to basic skills	2	5	3
	Impact of faculty members	2	4	1
Learning about arts, music, and drama	Understanding the benefits	4	7	4
	Applying learning	1	4	1
Participating in political and social activities	Involvement outside the classroom	7	7	6
	Discussing and researching current issues	3	7	4
	Student interests	0	4	2
	Avoiding controversial topics	0	4	0
Understanding other countries and cultures	Involvement outside the classroom	5	7	4
	Importance	3	5	3
	Student interests	1	7	3
	Course readings	2	2	1
	Learning another language	0	3	1

Chapter V

Discussion, Recommendations, and Conclusion

This chapter provides a summary of the research, discussion of the findings, and conclusion. In addition, the chapter discusses recommendations for future research, practice, and educational policy. The purpose of this sequential mixed methods study was to explore the differences in students' perceptions and provide a rich understanding of students' perceptions towards the general education program and their undergraduate learning experiences.

Discussion of the Findings

The qualitative data and their analysis were used to explain the statistical results that emerged from the quantitative strand and to provide an in-depth understanding of the participant's perceptions (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009). Both the quantitative and qualitative data analysis provided a better understanding of students' perceptions towards their academic abilities, practical and intellectual skills, civic and social and responsibilities, and global preparedness, that had been identified in many studies (AACTE, 2010; AMA, 2010; AAC&U, 2007; Boning, 2007; Hart Research Associates, 2009; Partnership for 21st Century Skills, 2008; Wehlburg, 2010) as essential competencies. Finally, data analysis provided insight into students' perceptions towards their relationship with their faculty members and how that influenced their learning experience.

Enhancing communication of goals and requirements. In many cases, the purpose and goals of general education are not well articulated to students (Arun &

Roksa, 2011; Humphreys, 2006; Menand, 2010). Humphreys (2006), Menand (2010), and Arun and Roksa (2011) note that many undergraduate students do not have a clear understanding of the nature and purpose of the general education program. This concern was also underscored and examined in this study in which 28% of students reported that the goals of the general education program are not well communicated to them (see Figure 2). Those students seemed to be confused about the general education requirements. During the focus groups interviews, those students kept referring to their major when asked about the general education program. Even several students explained that they are not clear on what is considered part of the general education requirements. One student noted that she did not understand exactly what the general education requirements are. Freshmen "feel aimless" because they were not properly educated about the general education program.

Students who were unsatisfied with how the general education goals were communicated to them noted that their advisors chose their courses for them without their input. In addition, many students, including juniors and seniors, did not have a good understanding of the goals of the general education program and its benefits. Some students stated that they do not understand why they need to take general education courses. They stated that some of these courses "wasted their time and money." Students also reported that they just take these courses to meet their general education requirements. A transfer, senior student with a computer science major explained, "I found general education tedious, boring, and at times, a wasting experience. I only did the work in order to get the grade... I have done the bare minimum and I can barely remember anything."

Approximately 59% of students did not believe that the university had enough general education course choices (see Figure 2). Students requested that the university eliminate redundancy of courses. It should offer more variety of choices and more sections of popular courses to meet their interests and needs. Students also suggested that the university should offer online, evening, and weekend courses, as well as courses during summer and winter breaks. Students' recommendations should be taken seriously. Higher education institutions are urged to be responsive to the changing demographics and world by designing a general education program that meets the needs of 21st century students (AACTE, 2010), especially since most of the undergraduate students work, 40% of the undergraduate students are 24 or older, and many are part time students (AAC&U, 2007).

Transfer students mainly complained that the university was not clear about the general education goals and requirements. They stated that they had a "tough" time understanding the general education requirements during their transition to the university. Transfer students were frustrated with the evaluation of their transfer credits. They explained that no student should be asked to repeat basic courses that they had successfully completed at a community college. They stated that the repetition of courses delayed their graduation and caused them further hardship. A student noted, "Asking transfer students to repeat certain courses makes the institution appear to be more interested in generating revenues than in the genuine welfare of their student body."

Finally, there is poor communication between advisors and students. About 33% of students were not satisfied with the advising process (see Figure 2). Students were disappointed because they believed that the advisors were not helpful. Students indicated

that advisors could be more knowledgeable and student centered. In addition, they suggested that the advising sessions should be available in the evenings and on the weekends. Failure to communicate the goals, values, and requirements of general education is a critical issue. In many studies, it is reported that students might develop negative perceptions about the general education program that would prevent them from getting involved in enriching experiences (Humphreys, 2006; Menand, 2010; Shertzer & Schuh, 2004).

Improving the quality of the general education program. The majority of students (89.7%) reported that the general education program provided them with a well-rounded education and enriching learning experiences (see Figure 2). Similarly, 86.2% reported that the general education program offered them the opportunity to explore different fields of knowledge outside their majors. Those students explained that the general education program is well balanced and extremely in-depth. It allowed them to grow, learn, and explore their interests. On the other hand, students who were unsatisfied with their general education experience stated that it is not challenging enough. They also noted that they "wasted their money and time" on courses that did not "interest" them. Students noted that if they were not interested in a course, they were not going to try that hard, and they were not going to learn. This study provided a rich description of students' perceptions towards the quality of general education learning outcomes. Students described their experiences in fostering critical qualities and communication skills, developing aesthetic and creative qualities, understanding math, science, and technology, and learning about other countries and cultures.

Advancing critical qualities and communication skills. An effective general education program should cultivate writing and speaking abilities, critical thinking, and problem solving abilities (AAC&U, 2007; Boning, 2007; Rhodes, 2010; Wehlburg, 2010). The American Management Association reports that employers identified critical thinking and problem solving, effective communication, and collaboration as important competencies that all graduates should possess (AMA, 2010). Findings from this study supplement previous literature since they show that undergraduate students also value these competencies and consider them very important. For instance, 98.5% of students reported that it is crucial to them to write and speak effectively (see Figure 6). About 91% of students noted that they developed their communication skills during the general education program. Students explained that they developed their communication skills mainly in Composition I and II and Public Speaking courses.

Furthermore, 97.3% of students reported that it is crucial to them to develop critical and analytical qualities. However, a lower percentage of students (88.7%) noted that they developed their critical and analytical qualities in general education courses. Students explained that fostering their critical abilities was limited to classroom discussions and writing research papers on controversial topics. Students complained that general education courses did not challenge them enough and encourage them to "think outside the box." They mainly developed their critical abilities in their major courses where they were able to apply what they learned to new situations. These results are consistent with Laird et al.'s (2009) findings showing that practical competencies, such as critical qualities, are underscored more in non-general education courses.

Strengthening aesthetic and creative qualities. More than a quarter of the students (28.3%) noted that it is not important to them to learn about arts, music, and/or drama (see Figure 6), and 19.5% of students reported that they did not develop their aesthetic and creative qualities (see Figure 3). Students noted that they are not interested in arts, music, and drama and that they only took them because they are part of the general education requirements. Students did not understand the value and benefits of art, music, and drama or how they could influence their lives. Students mainly complained that the general education music and art courses were more focused on memorizing information than developing specific skills and abilities.

However, in today's world, both knowledge and skills are needed for academic and professional development. Students' lack of interest in general education, the changing needs of society, and employers dissatisfaction with students' career preparation emphasize the importance of academic and career preparation. Universities should offer students opportunities to apply their knowledge in real life situations and foster their interests and learning (AACTE, 2010; AAC&U, 2007; Partnership for 21st Century Skills, 2010).

Strengthening math and science competencies. A number of students did not develop an understanding of basic science (32.9%) and math (26.6%) (see Figure 4). These students noted that they are not interested in science and math because they are not related to their majors. They explained that students usually do not retain much of the information if they are not interested in what they are learning. In addition, many students stated that it was hard for them to learn and understand science and math. Both science and math courses negatively affected their GPA and made them feel "like a complete

failure." To better understand science and math, students should recognize their usefulness and application to real life situations. General education courses should incorporate "hands-on learning." Finally, transfer students noted that the transition to Rowan University was hard. The science and math courses that they completed at the community college were easy and did not prepare them well for courses that they are currently taking at the university.

The findings regarding the students' perceptions towards the understanding of math and science are significant. These findings present an important aspect of student learning that is not emphasized in many previous studies. Colleges and universities are expected to provide their undergraduate students with rigorous curricula to help them strengthen their math, science, and problem solving skills (AMA, 2010; AAC&U, 2007; Arun & Roksa, 2011; Boning, 2007; Partnership for 21st Century Skills, 2008). However, as noted in this study, providing students with a rigorous curriculum is not enough. Students should be provided with a supportive learning environment that triggers their interests and helps them understand the value, usefulness, and application of math and science.

Strengthening technology competencies. In 2006, Hart Research Associates' employer survey reported that 82% of business employers believe that higher education institutions should place more emphasis on technology. Similarly, this study revealed that understanding and learning technology are also important to students. The overwhelming majority of students (96.3%) reported that it is crucial to them to understand and use technology (see Figure 6). However, 32% of students did not learn anything about the new developments in technology (see Figure 4). Students were disappointed that they

only learned basic computer skills and software in general education courses. They are interested in learning about more advanced technology that should be integrated into the general education curriculum. Finally, students explained that their technology learning experiences were greatly impacted by faculty members who taught their general education courses. Some faculty members were technology savvy while others are not.

These findings indicate that the current general education program is not fulfilling the technology needs of its students. According to AACTE (2010), higher education institutions should create technology-enabled learning communities that are not only limited to the classrooms. Technology tools should be used to expand the students' learning environment (AACTE, 2010). However, much of the general education literature fails to emphasize the important role that faculty members play in developing technology enabled learning communities. Students in this study reported that in many cases their experiences were hindered because some faculty members did not know how to utilize technology in the classroom. As a result, the university should provide more support and professional development to foster faculty members' technology skills.

Advancing global understanding. The majority of students (91.7%) noted that it is essential to them to develop an understanding and appreciation of human diversity (see Figure 6). However, 17% of students reported that their understanding in this area was not enhanced by the general education program. In addition, 26.1% of students reported that they did not improve their understanding of other countries and cultures (see Figure 4). Although learning another language is crucial to 67.9% of the students, only 35.5% of students indicated that they did learn a second language. Students explained that it is important to them to be educated about other countries and be exposed to different

cultures. They noted that they should develop skills and knowledge that prepare them to work and interact with individuals from diverse backgrounds. Students stated that learning about other countries and cultures "cannot be done in a classroom." It can be accomplished mainly outside the classroom through the interaction with diverse groups, going on field trips, joining multicultural clubs, and studying abroad. Unfortunately, students complained that the general education program did not provide them with such enriching experiences. Their learning experiences were limited to taking language courses and/or reading assignments in other general education courses.

The findings from this study agree with several reports (AACTE, 2010; AAC&U, 2007; Partnership for 21st Century Skills, 2008) showing that many colleges and universities are not preparing their undergraduate students to function in the interconnected world. Learning about other countries and cultures is becoming increasingly important, especially since graduates are going to work in the global world. Furthermore, the more skilled graduates are, the better the economy (AACTE, 2010; AMA, 2010; AAC&U, 2007; Hart Research Associates, 2009; Partnership for 21st Century Skills, 2008; Stearns, 2010). As a result, the university should expose its students to different languages, provide them with global training, and expand their knowledge about different parts of the world.

Improving students' preparedness for their academic majors. In this study, some seniors were disappointed with the general education program because they believed that its requirements delayed their graduation. On the other hand, freshmen noted that they had yet to take many courses in their major, so they were not sure how well they are being prepared. Approximately 22% of surveyed students strongly

disagreed that that general education program prepared them well for the advanced courses in their major (see Figure 2). These students believed that they were not well prepared for their majors because general education courses had nothing to do with their majors. Some students reported that general education courses were "too easy" and offered them basic high school skills, instead of preparing them for advanced courses.

In many cases, students took general education courses just to meet their graduation requirements. Students noted that the general education program and their major were not properly integrated. One student noted that the general education program was "kind of separate from the major." These findings corroborate what was reported in several studies indicating that many students were not interested in the general education program because they perceived it as not being relevant to their discipline (AACTE, 2010; AMA, 2010; AAC&U, 2009a). Many studies (AACTE, 2010; AAC&U, 2007; Wehlburg, 2010) encourage higher education institutions to integrate their general education program with academic curricula to improve students' undergraduate learning experience and increase retention.

Improving students' preparedness for real life and future profession. Higher education institutions have always underscored the importance of essential academic knowledge in undergraduate education. However, there has been a growing interest in academic, technical, and career skills and competencies (AMA, 2010; Partnership for the 21st Century Skills, 2010). Colleges and universities should underscore vocational skills and competencies to increase their students' marketability and employability as well as prepare them for life and active citizenship (Allen, 2006; AACTE, 2010; AMA, 2010;

AAC&U, 2007; Boning, 2007; Humphreys, 2006; Menand, 2010; Partnership for 21st Century Skills, 2010; Rhodes 2010).

Unfortunately, a fair number of students stated that the general education program did not provide them with opportunities to develop their vocational and occupational competencies (22.5%). The same number of students (22.5%) noted that they did not apply what they learned to real life situations (see Figure 2). Students complained that they only developed basic competencies that were limited to learning public speaking, writing, researching information, basic computer skills, and discussing current issues. They would have liked to experience opportunities outside their classrooms that better prepared them for their future career and life and engaged them in active learning. Students' recommendations corroborate what has been reported in previous studies. Many studies (Allen, 2006; AACTE, 2010; AAC&U, 2007; Boning, 2007; Humphreys, 2006; Rhodes, 2010) note that students should be able to apply the knowledge and skills they have attained from their undergraduate experience to real life situations. They should acquire transferable skills to achieve their long-term professional goals and keep up with the changing world. As a result, students should be exposed to internships or job shadowing to develop practical and vocational skills and credentials.

Furthermore, the National Survey of Student Engagement (NSSE, 2007) reported that 54% of surveyed seniors did not participate in community-based projects within their coursework. Similarly, in this study, 86.1% of students noted that it is essential to them to become community leaders (see Figure 6). However, 42.5% of students did not participate in community services, and 22.4% of students did not develop their leadership skills (see Figure 3). Students were disappointed with the general education program

because it did not encourage them to get engaged in activities outside their classrooms. Similar findings emerged when students were asked about developing their social and political activities. Eighty percent of students noted that it is crucial to them to influence the political structure and/or social values (see Figure 6). Students explained that the only learning experience they had pertaining to this area was centered on discussions or researching information about current issues. However, a fair number of students (28.9%) noted that the general education program did not foster their social and political activities (see Figure 3). The program did not encourage them to get involved in social and political activities inside or outside their classrooms. These findings align closely with what was reported in the previous literature (AACTE, 2010; AAC&U, 2007; Boning, 2007; Laird et al., 2009; Rhodes 2010) that in many cases, the essential learning outcomes such as individual and social responsibilities are not integrated throughout curricula. These studies urged higher education institutions to develop a coherent general education model that enables students to integrate essential competencies within disciplines and connect them to real life situations. However, this study shed light on an aspect of students' perceptions towards fostering their social and political activities that was not addressed in the previous literature. In the focus group interviews, students explained that some faculty did not want to discuss political or social topics in the classroom since they were controversial in nature. If the university wants to integrate this type of learning across the undergraduate experience, it should provide professional development for its faculty to help them address controversial topics with students.

Strengthening students' relationship with faculty members. Most of the general education studies and reports focus mainly on restructuring general education programs and improving learning outcomes. However, few studies address how the teaching of general education courses impact students' learning and their undergraduate experience. The findings from this study add to the general education literature by providing a better understanding of students' perceptions towards the teaching of general education courses. Although the teaching of the general education program was not addressed in the closed-ended survey questions of this study, students chose to comment about it in the open-ended question and focus group interviews. Students noted that their learning experience was greatly impacted by the faculty members who taught general education courses. They explained that it is not only important to have a good curriculum, but also to have great faculty members who can teach. It is also important that all faculty members know how to use and integrate technology into their classrooms.

Furthermore, students stated that general education faculty members were at two extremes in their teaching. They either had high expectations, cared about them, and helped them learn and grow, or they "did not care" about teaching general education courses. These faculty members spent much of their time lecturing and reading power points. Some students also complained that there were too many adjuncts teaching general education courses. Some students noted that in many cases, adjuncts worked on more than one campus. As a result, their focus was split between many jobs and they did not have high expectations for academic excellence from their students. Furthermore, students complained that many general education faculty members taught math and science at a fast pace. A student stated that "they were not teaching at the pace of the

students. Students were left behind to struggle." Others noted that some faculty members intimidated students, which deterred them from asking clarifying questions. As students reported in this study, faculty members play a very crucial role in fostering a positive learning environment for all students. The Wabash National Study of Liberal Arts Education reported that good teaching and high quality interactions, academic challenges and high expectations, and the diversity of experiences are the main factors that positively impact student learning experiences (Orcutt, 2008; Pascarella & Colleagues, 2007; Rhodes, 2010).

Recommendations for Research, Practice, and Educational Policy

Based upon the results and conclusions of this study, the following recommendations for research, practice, and educational policy are suggested.

Research. Due to extensive significant findings, only specific aspects of students' perceptions towards their undergraduate experience and learning were further explored in the quantitative strand of this study. A qualitative study could be conducted to provide an in-depth understanding and a holistic picture of the students' perceptions towards the general education experiences and learning outcomes that were not explored in this study. Future studies could further investigate students' perceptions towards the learning of social and behavioral sciences, the understanding of the complexity of issues in history and humanities, the enjoyment of literature, and the development of good health habits and physical fitness.

This study indirectly assessed the general education program and its learning outcomes through students' perceptions. An additional study could be conducted to directly assess the general education program and evaluate students' work to find out

whether they have achieved specific learning outcomes. Such a study could provide the university with valuable information to improve the undergraduate experience and strengthen students' skills.

Finally, a study might be conducted to explore graduates' perceptions of how well the general education program prepared them for their careers and life after college. Further research might also be conducted to explore the perceptions of general education faculty members towards the general education program and its learning outcomes. These studies could complement this study by providing a holistic picture of the general education program from different perspectives.

Practice. The university could enhance the students' undergraduate experience and foster their academic abilities, career skills, civic responsibility, social understanding, and global preparedness by restructuring certain aspects of the current general education program. The general education program should provide students with opportunities outside the classroom to develop their leadership skills, engage in social or political activities, and learn about other countries and cultures. The general education program could engage students in active learning, hands-on activities, real life applications, field trips, and community services to better prepare students for citizenship and life after college. In addition, the university could develop partnerships with businesses to provide students with opportunities to develop their vocational and practical skills and build relationships with future employers.

Furthermore, the university could clearly communicate the values, goals, and requirements of general education to all students. The general education courses ought to appeal more to students' interests to provide them with unique and interesting

experiences. Students do not usually retain much of the information if they are not interested in what they are learning. As a result, the university could better communicate the value and benefits of learning math, science, arts, music, and drama and how they can apply to their majors and to real life situations.

The university should provide a challenging yet supportive environment for its diverse undergraduate student population. It could improve the communication between advisors and students. Advisors could be more helpful and student centered. They ought to make an effort to get to know their students through regular guidance sessions. Advisement could also be available through extended hours or on the weekends. The university could offer more course sections, online, evening, summer and winter break courses to better accommodate the needs of diverse students. Finally, it could provide a supportive mentoring program and professional development opportunities for faculty members to strengthen their technology and teaching skills to enhance student learning.

Educational policy. To clearly communicate the learning goals of the general education program, a new policy could be instituted that requires the documentation of the general education learning goals on rubrics and course syllabi. This policy would ensure that learning outcomes were clearly communicated in writing, and the assessment of the students' performances related to these learning outcomes would also be stated. In addition, the university could improve the quality and efficiency of its general education program by instituting new curricular policies. The general education requirements might be decreased to eliminate redundancy, qualifying some courses to fulfill multiple requirements, and by integrating general education learning outcomes across disciplines. For example, critical and analytical qualities, communication skills, and advanced

technology should not be restricted to a number of courses, instead they should be addressed across the students' undergraduate experience. Finally, the university could provide a better support system for transfer students during their first semester. It could collaborate with community colleges to institute new policies that facilitate credit transfer and evaluation.

Conclusion

This research study explored the differences in perceptions among undergraduate student subgroups towards the general education program and their learning experience. It provided an in-depth understanding of students' perceptions and increased awareness of their needs. Finally, it provided recommendations to improve the quality of the general education program. In this study, students underscored the importance of clear communication, good teaching, high quality interactions, application of knowledge, and academic challenges in their undergraduate learning experience. These findings corroborate what was reported by the Wabash National Study of Liberal Arts Education (Center of Inquiry in the Liberal Arts at Wabash College, 2009). The major recommendation offered is for the university to reform its general education program in order to provide a fruitful learning experience for its undergraduate students.

Furthermore, the university should design a plan to better articulate the general education goals, values, and learning outcomes to its undergraduate students. Students will not be actively involved in their undergraduate experience if they lack a clear understanding of the nature and purpose of the general education program. This aspect was underscored and examined in this study, which revealed that students developed negative perceptions about the general education program. Students' negative perceptions

prevented them from getting involved in enriching experiences. Finally, to better prepare students for the complex and ever changing world, citizenship, and future career, the university should integrate the specialized, professional, and general education programs into the students' undergraduate experience. The university should be more aggressive in exploring effective practices that positively impact its students' engagement and learning.

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Appendix A

Text of Recruitment Email

Dear student:

I am writing to request your assistance in a dissertation study focused on indirect assessment of the university's general education program through students' perceptions. The study explores students' perceptions towards the university's current general education program and its learning outcomes, and their perceptions towards their undergraduate experience and learning. The study aims to increase awareness of students' needs and provide recommendations to improve general education program.

General education is "the core of the undergraduate curriculum for all students, regardless of major. It contributes to the distinctiveness of college-educated adults and guarantees that all college graduates have a broad-balanced education" (Allen, 2006, p. 1).

Please take few moments to assist in this effort by completing the following online survey <https://www.surveymonkey.com/s/GE>

Your thoughtful responses to the items in the survey are very valuable for the study. Individuals who complete the survey can participate in a raffle of 3 \$50 gift certificates to the university bookstore. You can participate in the raffle by providing your email address in the last question of the survey.

Your participation in this survey is voluntary, and you may withdraw at anytime. Your responses will be completely confidential. The data collected from the survey instrument will be used in future publication and educational purposes provided that no personally identifiable information would be used. No one other than I will see your individual responses.

If I have any questions about my rights as a research subject, I may contact the Associate Provost for Research at: Rowan University Institutional Review Board for the Protection of Human Subjects, Office of Research, 201 Mullica Hill Road, Glassboro, NJ 08028-1701, Tel: 856-256-5150

Thank you in advance for your assistance.

Sincerely,

Rihab Saadeddine, Doctoral student
Department of Educational Leadership
Rowan University
saaded15@students.rowan.edu

Appendix B

Questionnaire

1. I- Personal and Educational Demographics

While your participation in this survey is voluntary and you are not required to answer any of the questions herein, your cooperation and participation are important to the success of the project and are greatly appreciated. If you choose to participate, please understand that all responses are strictly confidential and no personally identifiable information is being requested. Your completion of this survey constitutes informed consent and your willingness to participate.

Please indicate by checking all that apply:

*** 1. Gender**

- Male
 Female

*** 2. Age Range**

- 18-25
 26-35
 36 or older

*** 3. What is your racial or ethnic identification?**

- | | |
|---|--|
| <input type="radio"/> African American or Black | <input type="radio"/> White or Caucasian |
| <input type="radio"/> American Indian or Alaskan Native | <input type="radio"/> Multi-racial |
| <input type="radio"/> Asian or Pacific Islander | <input type="radio"/> Other |
| <input type="radio"/> Hispanic or Latino | <input type="radio"/> Choose not to indicate |

*** 4. Are you currently enrolled at this university as a**

- Full-time student (12 credits/semester or more)
 Part-time student (6-11 credits/semester)
 Less than 6 credits

*** 5. What is your current college year?**

- Freshman/fist year (0-23.99)
 Sophomore (24-57.99)
 Junior (58-89.99)
 Senior (90 and above)

*** 6. What is your major? Please choose one from the drop down list**

List of majors by alphabetical order

Major:

***7. During the time school is in session, do you work on a job for pay? (on campus-off campus)**

- Yes
- No

***8. Where are you living during this semester?**

- on campus
- off campus (commute to campus)

***9. How many credits did you transfer from any other institution into this university?**

- none
- 1-30 credits
- 31-49 credits
- 50-65 credits
- 65 credits or more

***10. Did you transfer your credits from**

- Community College
- Four year institution
- Other

2. II-Students' Perceptions

***11. Please indicate your degree of agreement with each of the following statements concerning the university's general education program:**

	Strongly Disagree	Agree	Strongly Agree
The general education program provides me with an enriching learning experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The general education program provides me with well-rounded education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The general education courses prepares me well for the advanced courses in my major.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The general education program offers me an opportunity to explore different fields of knowledge outside my major.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The goals of the general education program are well communicated to students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are too many choices of general education courses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with the advising process for the general education course selection.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to apply what I learned in my general education courses to real-life situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to develop vocational and occupational competencies from the general education program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** 12. In thinking about your general education experience up to now, to what extent do you feel you have gained or made progress in each of the following?**

	I did not learn anything	I learned a fair amount	I learned a great deal
developing aesthetic and creative qualities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
speaking and writing effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
developing critical and analytical qualities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
developing the ability to research and properly reference the work of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
developing an understanding and appreciation of human diversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
fostering my social and/or political activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
improving my understanding of other countries and cultures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
developing information literacy skills (find, retrieve, analyze, and use information)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
developing my leadership skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
please mark "I did not learn anything"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
developing good health habits and physical fitness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
learning a second language	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
understanding new developments in technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
learning about social and behavioral sciences (such as psychology, sociology, geography and anthropology, economics, and political sciences)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
understanding the complexity of issues in history and humanities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
participating in community services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
understanding basic science (biology, chemistry, and physics)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
understanding math	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

II- Students' Perceptions

*** 13. Thinking of your undergraduate experience at this university, please indicate your degree of agreement with each of the following statements:**

	Strongly Disagree	Agree	Strongly Agree
During my undergraduate experience, I gained a general education and appreciation of ideas (intellectual interests).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During my undergraduate experience, I became a more cultured person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During my undergraduate experience, I learned more about things that interest me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During my undergraduate experience, I got trained for a specific career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
During my undergraduate experience, I got prepared for graduate or professional school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** 14. Please indicate the importance to you personally, for each of the following:**

	Not important	Important	Very important
to develop critical, evaluative, and analytical qualities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to speak and write effectively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to develop an understanding and appreciation of human diversity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to understand and use technology.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to learn about arts, music, and/or drama.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to broaden my acquaintance with and enjoyment of literature.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to understand social and/or behavioral sciences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to learn another language.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to become a community leader.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to influence the political structure and/or social values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Do you have any suggestions or comments on the general education program at this university?

16. Please enter your university email address if you want to participate in a gift card raffle to the university bookstore

Appendix C

Focus Group Interview Protocol

Undergraduate Students' Perceptions of General Education: Mixed Methods Approach

1. Describe some learning experiences you had in GE courses that helped you develop skills that you will use in real life or on the job? How might these courses have better prepared you?
2. In what way did your GE courses help you gain or make progress in developing your critical thinking?
3. In what way did your GE courses encourage you to participate in political and social activities?
4. Describe learning experiences that might allow you to improve your understanding of other countries and cultures?
5. How did the general education program help you gain a better understanding of math and science? What can be done to better prepare students in these areas?
6. Were there learning opportunities that helped you develop better understandings of technology? How can the university better prepare you in this area?
7. How important to you is learning about arts, music, and/or drama? Why?
8. Is there anything else you would like to say about your experience with the general education program?

Probing questions:

Could you please tell me more about this?

I believe I heard you saying this... Did I understand you correctly?

Please help me understand what you mean?

Please provide an example?

Is there anyone else that would like to comment?

Appendix D

Institutional Review Board (IRB) Approval Letter



November 23, 2011

Rihab Saadeddine
2 Heritage Valley Drive
Sewell, NJ 08080

Dear Rihab Saadeddine:

In accordance with the University's IRB policies and 45 CFR 46, the Federal Policy for the Protection of Human Subjects, I am pleased to inform you that the Rowan University Institutional Review Board (IRB) has approved your project:

IRB application number: 2012-036

Project Title: Undergraduate Students' Perceptions of General Education: Mixed Methods Approach

In accordance with federal law, this approval is effective for **one calendar year** from the date of this letter. If your research project extends beyond that date or if you need to make significant modifications to your study, you must notify the IRB immediately. Please reference the above-cited IRB application number in any future communications with our office regarding this research.

Please retain copies of consent forms for this research for three years after completion of the research.

If, during your research, you encounter any unanticipated problems involving risks to subjects, you must report this immediately to Dr. Harriet Hartman (hartman@rowan.edu or call 856-256-4500, ext. 3787) or contact Dr. Shreekanth Mandayam, Associate Provost for Research (shreek@rowan.edu or call 856-256-5150).

If you have any administrative questions, please contact Karen Heiser (heiser@rowan.edu or 856-256-5150).

Sincerely,

Harriet Hartman, Ph.D.
Chair, Rowan University IRB

c: Ali Houshmand, President's Office, Bole Hall

Office of Research
Bole Hall
201 Mullica Hill Road
Glassboro, NJ 08028-1701

856-256-5150
856-256-4425 fax

Appendix E

Letter of Informed Consent

I accept to participate in a focus group conducted by Rihab Saadeddine, who is a doctoral student in the Educational Leadership program, at Rowan University. This focus group will be part of the data collection for a dissertation's study focused on indirect assessment of general education program through students' perceptions.

The study explores students' perceptions towards their undergraduate experience and learning, and their perceptions towards the university's current general education program and its learning outcomes. The study aims to increase awareness of students' needs and provide recommendations to improve general education program.

I understand that the focus group interview will last for approximately one hour. I will be asked to answer questions related to this research. I also understand that my responses will be audio-taped. The electronic file of the focus group interview audio-tape will be saved on a password protected computer until a written word-for-word copy of the focus group has been created. As soon as this process is completed, the files will be deleted.

I understand that my responses and the information gathered in this focus group will be kept confidential; and that the personal information given will be kept private. I also understand that the data collected will be used in future publication and educational purposes provided that I am in no way identified and my name is not used. No one other than the researchers will see my individual responses to any question.

I understand that during the focus group interview I will not be exposed to any physical or psychological harm, and that I can refuse to take the focus group or stop at anytime without penalty.

If I have any questions about my rights as a research subject, I may contact the Associate Provost for Research at: Rowan University Institutional Review Board for the Protection of Human Subjects, Office of Research, 201 Mullica Hill Road, Glassboro, NJ 08028-1701, Tel: 856-256-5150

(Signature of Participant)

(Date)

(Signature of Researcher)

(Date)

Rihab Saadeddine
Doctoral student, Department of Educational Leadership
Rowan University, 201 Mullica Hill Road, Glassboro, NJ, 08028
saaded15@students.rowan.edu

Appendix F

Focus Group Demographics Survey

Undergraduate Students' Perceptions of General Education: Mixed Methods Approach

Focus group number _____

Date: _____

Please indicate by checking all that apply:

1. Gender:

Male

Female

2. Age Range:

18-25

26-35

36 or older

3. What is your racial or ethnic identification?

African American or Black
Caucasian

American Indian or Alaskan Native

Asian or Pacific Islander

Hispanic or Latino
indicate

White or

Multi-racial

Other

Choose not to

4. What is your current college year at this university?

Freshman/first year (0-23.99)

Sophomore (24-57.99)
above)

Junior (58-89.99)

Senior (90 and

5. What is your major?

6. How many credits did you transfer from any other institution into this university?

none

1-30 credits

31-49 credits

50-65 credits

65 credits or more

Appendix G

Tables of Significant Findings

Table G1

Descriptive Statistics for Perceptions Towards the Program (N=1503)

Survey items	Strongly disagree (1)		Agree (2)		Strongly agree (3)	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
The general education program provides me with well-rounded education <i>M</i> =2.17	155	10.3	939	62.5	409	27.2
The general education program offers me an opportunity to explore different fields of knowledge outside my major <i>M</i> =2.16	207	13.8	856	57.0	440	29.3
The general education program provides me with an enriching learning experience <i>M</i> =2.13	160	10.6	995	66.2	348	23.2
The general education courses prepares me well for the advanced courses in my major <i>M</i> =2.01	334	22.2	817	54.4	352	23.4
I was able to apply what I learned in my general education courses to real-life situations <i>M</i> =1.95	337	22.4	898	59.7	268	17.8
I was able to develop vocational and occupational competencies from the general education program <i>M</i> = 1.92	337	22.4	955	63.5	211	14.0
The goals of the general education program are well communicated to students <i>M</i> =1.89	421	28.0	825	54.9	257	17.1
I am satisfied with the advising process for the general education course selection <i>M</i> =1.81	497	33.1	792	52.7	214	14.2
There are too many choices of general education courses <i>M</i> =1.53	883	58.8	447	29.7	173	11.5

Table G2

Descriptive Statistics for Perceptions Towards Learning Outcomes (N=1503)

Survey items	I did not learn anything (1)		I learned a fair amount (2)		I learned a great deal (3)	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Speaking and writing effectively <i>M</i> =2.26	131	8.7	846	56.3	526	35.0
Developing critical and analytical qualities <i>M</i> =2.22	170	11.3	829	55.2	504	33.5
Research and reference the work of others <i>M</i> =2.19	197	13.1	824	54.8	482	32.1
Developing information literacy skills <i>M</i> =2.19	167	11.1	879	58.5	457	30.4
Learning about social and behavioral sciences <i>M</i> =2.15	245	16.3	782	52.0	476	31.7
Appreciation of human diversity <i>M</i> =2.12	255	17.0	807	53.7	411	29.3
Developing my leadership skills <i>M</i> =2.04	350	22.3	745	49.6	408	27.1
Please mark "I did not learn anything" <i>M</i> =1	1503	100				
Developing aesthetic and creative qualities <i>M</i> =2.01	293	19.5	899	59.8	311	20.7
Understanding the complexity of issues in history and humanities <i>M</i> =1.97	350	23.3	841	56.0	312	20.8
Understanding math <i>M</i> =1.97	400	26.6	746	49.6	357	23.8
Improving my understanding of other countries and culture <i>M</i> =1.95	393	26.1	796	53.0	314	20.9
Fostering my social and/or political activities <i>M</i> =1.90	435	28.9	788	52.4	280	18.6
Understanding basic science <i>M</i> =1.89	495	32.9	679	45.2	329	21.9
Understanding technology <i>M</i> =1.87	481	32.0	730	48.6	292	19.4
Developing good health habits and physical fitness <i>M</i> =1.80	580	38.6	650	43.2	273	18.2
Participating in community services <i>M</i> =1.75	639	42.5	607	40.4	257	17.1
Learning a second language <i>M</i> =1.44	970	64.5	410	27.3	123	8.2

Table G3

Descriptive Statistics for Perceptions Towards Experiences (N=1503)

Survey items	Strongly disagree (1)		Agree (2)		Strongly agree (3)	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
During my undergraduate experience, I learned more about things that interest me <i>M</i> =2.35	123	8.2	733	48.8	647	43.0
During my undergraduate experience, I gained a general education and appreciation of ideas (Intellectual interests) <i>M</i> =2.19	119	7.9	973	64.7	411	27.3
During my undergraduate experience, I got trained for a specific career <i>M</i> =2.11	325	21.6	684	45.5	494	32.9
During my undergraduate experience, I became a more cultured person <i>M</i> =2.09	276	18.4	823	54.8	404	26.9
During my undergraduate experience, I got prepared for graduate or professional school <i>M</i> =2.03	321	21.4	815	54.2	367	24.4

Table G4

Descriptive Statistics for Perceptions Towards Students' Learning (N=1503)

Survey items	Not important (1)		Important (2)		Very important (3)	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
To speak and write effectively <i>M</i> =2.69	22	1.5	424	28.2	1,057	70.3
To develop critical and analytical qualities <i>M</i> =2.52	41	2.7	645	42.9	817	54.4
To understand and use technology <i>M</i> =2.52	56	3.7	609	40.5	838	55.8
To develop an understanding and appreciation of human diversity <i>M</i> =2.40	124	8.3	659	43.8	720	47.9
To understand social and/or behavioral sciences <i>M</i> =2.34	131	8.7	732	48.7	640	42.6
To become a community leader <i>M</i> = 2.27	208	13.8	674	44.8	621	41.3
To influence the political structure and/or social values <i>M</i> =2.09	300	20.0	770	51.2	433	28.8
To broaden my acquaintance with and enjoyment of literature <i>M</i> =2.05	353	23.5	726	48.3	424	28.2
To learn about arts, music, and/or drama <i>M</i> =1.97	425	28.3	696	46.3	382	25.4
To learn another language <i>M</i> =1.89	482	32.1	703	46.8	318	21.2

Table G5

Perceptions Towards General Education by Academic Year (N=1503)

Survey Items	Academic Year	Strongly disagree	Agree	Strongly agree	Chi-Square Test		
		<i>f</i>	<i>f</i>	<i>f</i>	X^2	<i>df</i>	<i>p</i>
The general education program provides me with well-rounded education	Freshman	32	132	100	25.228	6	0.000**
	Sophomore	25	184	82			
	Junior	40	267	102			
	Senior	58	356	125			
The general education program offers me an opportunity to explore different fields of knowledge outside my major	Freshman	33	131	100	19.187	6	0.004*
	Sophomore	38	158	95			
	Junior	52	242	115			
	Senior	84	325	130			
The general education program provides me with an enriching learning experience	Freshman	33	148	83	22.185	6	0.001**
	Sophomore	30	186	75			
	Junior	35	287	87			
	Senior	62	374	103			
The general education courses prepares me well for the advanced courses in my major	Freshman	56	125	83	23.891	6	0.001**
	Sophomore	49	166	76			
	Junior	88	239	82			
	Senior	141	287	111			
The goals of the general education program are well communicated to students	Freshman	63	139	62	15.292	6	0.018*
	Sophomore	79	158	54			
	Junior	131	215	63			
	Senior	148	313	78			
I am satisfied with the advising process for the general education course selection	Freshman	73	143	48	21.745	6	0.001**
	Sophomore	74	173	44			
	Junior	160	195	54			
	Senior	190	281	68			
There are too many choices of general education courses	Freshman	134	85	45	17.462	6	0.008*
	Sophomore	163	95	33			
	Junior	244	124	41			
	Senior	342	143	54			

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G6

Perceptions Towards Learning Outcomes by Academic Year (N=1503)

Survey Items	Academic Year	I did not learn anything <i>f</i>	I learned a fair amount <i>f</i>	I learned a great deal <i>f</i>	Chi-Square Test		
					χ^2	<i>df</i>	<i>p</i>
Learning about social and behavioral sciences	Freshman	65	118	81	21.364	6	0.002*
	Sophomore	43	142	106			
	Junior	60	222	127			
	Senior	77	300	162			
Understanding the complexity of issues in history and humanities	Freshman	86	123	55	19.159	6	0.004*
	Sophomore	69	158	64			
	Junior	85	243	81			
	Senior	110	317	112			
Understanding math	Freshman	59	119	86	17.783	6	0.007*
	Sophomore	73	146	72			
	Junior	113	202	94			
	Senior	155	279	105			
Understanding basic science	Freshman	93	91	80	26.949	6	0.000**
	Sophomore	100	122	69			
	Junior	131	191	87			
	Senior	171	275	93			
Developing good health habits and physical fitness	Freshman	85	111	68	24.515	6	0.000**
	Sophomore	97	134	60			
	Junior	160	183	66			
	Senior	238	222	79			

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G7

Perceptions Towards the General Education Program by Major (N=1503)

Survey Items	Major	Strongly disagree	Agree	Strongly agree	Chi-Square Test		
		<i>f</i>	<i>f</i>	<i>f</i>	X^2	<i>df</i>	<i>p</i>
The general education program offers me an opportunity to explore different fields of knowledge outside my major	Science & Math	27	151	52	36.601	16	0.002*
	Engineering	18	74	46			
	Education	59	215	77			
	Humanities/Social	38	172	124			
	Performing Arts	11	40	23			
	Business	25	63	41			
	Communication	17	94	53			
	Other	7	27	11			
The general education courses prepares me well for the advanced courses in my major	Science & Math	44	136	50	48.892	16	0.000**
	Engineering	53	56	29			
	Education	62	208	81			
	Humanities/Social	59	186	89			
	Performing Arts	27	31	16			
	Business	34	65	30			
	Communication	38	84	42			
	Other	9	25	11			
There are too many choices of general education courses	Science & Math	133	74	23	26.384	16	0.049*
	Engineering	88	39	11			
	Education	193	115	43			
	Humanities/Social	216	75	43			
	Performing Arts	49	17	8			
	Business	60	54	15			
	Communication	98	46	20			
	Other	26	14	5			
Undeclared	19	13	5				

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G8

Perceptions Towards Learning Outcomes by Major (N=1503)

Survey Items	Major	I did not	I learned	I learned	Chi-Square Test		
		learn anything	a fair amount	a great deal	χ^2	df	p
		f	f	f			
Developing critical and analytical qualities	Science & Math	26	137	67	39.064	16	0.001**
	Engineering	26	63	49			
	Education	40	200	111			
	Humanities/Social	22	174	138			
	Performing Arts	9	44	21			
	Business	12	78	39			
	Communication	28	85	51			
	Other/Undeclared	7	47	28			
Developing the ability to research and properly reference the work of others	Science & Math	28	140	62	46.772	16	0.000**
	Engineering	31	70	37			
	Education	46	210	95			
	Humanities/Social	28	165	141			
	Performing Arts	14	42	18			
	Business	20	66	43			
	Communication	18	87	59			
	Other/Undeclared	11	44	27			
Developing information literacy skills	Science & Math	28	137	65	38.945	16	0.001**
	Engineering	29	76	33			
	Education	29	220	102			
	Humanities/Social	26	182	126			
	Performing Arts	9	46	19			
	Business	18	80	31			
	Communication	21	93	50			
	Other/Undeclared	7	44	31			
Learning about social and behavioral sciences	Science & Math	52	122	56	139.43	16	0.000**
	Engineering	48	70	20			
	Education	56	205	90			
	Humanities/Social	23	145	166			
	Performing Arts	18	41	15			
	Business	21	73	35			
	Communication	21	85	58			
	Other /Undeclared	6	40	36			
developing an understanding and appreciation of human diversity	Science & Math	46	134	50	46.731	16	0.000**
	Engineering	36	80	22			
	Education	53	173	125			
	Humanities/Social	38	178	118			
	Performing Arts	15	35	24			
	Business	24	68	37			
	Communication	33	94	37			
	Other/Undeclared	10	44	28			

Developing aesthetic and creative qualities	Science & Math	49	150	31	68.732	16	0.000**
	Engineering	41	79	18			
	Education	66	226	59			
	Humanities/Social	56	197	81			
	Performing Arts	10	30	34			
	Business	22	83	24			
	Communication	31	82	51			
Other/Undeclared	17	52	13				
Understanding the complexity of issues in history and humanities	Science & Math	65	131	34	62.111	16	0.000**
	Engineering	52	70	16			
	Education	76	201	74			
	Humanities/Social	48	185	101			
	Performing Arts	15	44	15			
	Business	37	69	23			
	Communication	36	99	29			
Other/Undeclared	20	42	20				
Understanding math	Science & Math	27	128	75	145.19	16	0.000**
	Engineering	20	47	71			
	Education	104	173	74			
	Humanities/Social	108	170	56			
	Performing Arts	30	38	6			
	Business	21	68	40			
	Communication	64	81	19			
Other/Undeclared	26	40	16				
Improving my understanding of other countries and culture	Science & Math	73	114	43	30.208	16	0.017*
	Engineering	44	74	20			
	Education	95	195	61			
	Humanities/Social	66	177	91			
	Performing Arts	24	33	17			
	Business	31	73	25			
	Communication	40	84	40			
Other/Undeclared	20	45	17				
Fostering my social and/or political activities	Science & Math	75	129	26	43.110	16	0.000**
	Engineering	48	78	12			
	Education	110	176	65			
	Humanities/Social	75	170	89			
	Performing Arts	28	32	14			
	Business	33	71	25			
	Communication	45	90	29			
Other/Undeclared	21	41	20				

Understanding basic science	Science & Math	34	106	90	166.08	16	0.000**
	Engineering	20	51	67			
	Education	138	165	48			
	Humanities/Social	115	153	66			
	Performing Arts	33	37	4			
	Business	49	60	20			
	Communication	72	73	19			
	Other/Undeclared	33	34	15			
Understanding new developments in technology	Science & Math	39	118	73	89.860	16	0.000**
	Engineering	31	59	48			
	Education	133	171	47			
	Humanities/Social	109	160	65			
	Performing Arts	35	29	10			
	Business	45	63	21			
	Communication	63	84	17			
	Other/Undeclared	25	46	11			
Developing good health habits and physical fitness	Science & Math	91	107	32	41.174	16	0.001**
	Engineering	75	48	15			
	Education	110	155	86			
	Humanities/Social	125	149	60			
	Performing Arts	33	27	14			
	Business	46	58	25			
	Communication	71	68	25			
	Other/Undeclared	29	37	16			
Participating in community services	Science & Math	90	119	21	39.425	16	0.001**
	Engineering	74	48	16			
	Education	143	144	64			
	Humanities/Social	131	126	77			
	Performing Arts	36	24	14			
	Business	53	49	27			
	Communication	79	60	25			
	Other/Undeclared	32	37	13			
Learning a second language	Science & Math	156	59	15	36.225	16	0.003*
	Engineering	88	41	9			
	Education	256	67	28			
	Humanities/Social	189	108	37			
	Performing Arts	52	18	4			
	Business	78	44	7			
	Communication	95	54	15			
	Other/Undeclared	55	19	8			

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G9

Perceptions Towards the General Education by Transfer Credits (N=1503)

Survey Items	Transfer Credits	Strongly disagree	Agree	Strongly agree	Chi-Square Test		
		<i>f</i>	<i>f</i>	<i>f</i>	X^2	<i>df</i>	<i>p</i>
The general education program provides me with well-rounded education	None	56	319	171	21.332	8	0.006*
	1-30 credits	54	293	102			
	31-49 credits	16	53	29			
	50-65 credits	13	143	60			
	65 credits or more	16	131	47			
The general education courses prepares me well for the advanced courses in my major	None	119	288	139	33.557	8	0.000**
	1-30 credits	131	230	88			
	31-49 credits	27	50	21			
	50-65 credits	31	127	58			
	65 credits or more	26	122	46			
I was able to apply what I learned in my general education courses to real-life situations	None	115	316	115	21.084	8	0.007*
	1-30 credits	122	270	57			
	31-49 credits	26	57	15			
	50-65 credits	38	135	43			
	65 credits or more	36	120	38			
I was able to develop vocational and occupational competencies from the general education program	None	111	351	84	17.933	8	0.022*
	1-30 credits	124	277	48			
	31-49 credits	27	59	12			
	50-65 credits	41	138	37			
	65 credits or more	34	130	30			
The goals of the general education program are well communicated to students	None	142	297	107	22.899	8	0.003*
	1-30 credits	154	242	53			
	31-49 credits	29	51	18			
	50-65 credits	54	118	44			
	65 credits or more	42	117	35			
There are too many choices of general education courses	None	299	178	69	16.608	8	0.034*
	1-30 credits	290	111	48			
	31-49 credits	66	21	11			
	50-65 credits	120	71	25			
	65 credits or more	108	66	20			

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G10

Perceptions Towards Learning Outcomes by Transfer Credits (N=1503)

Survey Items	Transfer Credits	I did not	I learned	I learned	Chi-Square Test		
		learn anything	a fair amount	a great deal	X^2	df	p
		f	f	f			
Understanding math	None	114	296	136	25.489	8	0.001**
	1-30 credits	120	210	119			
	31-49 credits	34	40	24			
	50-65 credits	71	100	45			
	65 credits or more	61	100	33			
Developing good health habits and physical fitness	None	163	252	131	39.190	8	0.000**
	1-30 credits	205	182	62			
	31-49 credits	45	39	14			
	50-65 credits	90	87	39			
	65 credits or more	77	90	27			
Participating in community services	None	201	236	109	17.223	8	0.028*
	1-30 credits	209	177	63			
	31-49 credits	40	40	18			
	50-65 credits	105	73	38			
	65 credits or more	84	81	29			

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G11

Perceptions Towards Undergraduate Experience by Academic Year (N=1503)

Survey Items	Academic Year	Strongly	Agree	Strongly	Chi-Square Test		
		disagree		agree	X^2	df	p
		f	f	f			
During my undergraduate experience, I got trained for a specific career	Freshman	76	126	62	19.673	6	0.000**
	Sophomore	52	141	98			
	Junior	85	187	137			
	Senior	112	230	197			
During my undergraduate experience, I got prepared for graduate or professional school	Freshman	64	154	46	12.984	6	0.043*
	Sophomore	60	166	65			
	Junior	83	222	104			
	Senior	114	273	152			

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G12

Perceptions Towards Students' Learning by Academic Year (N=1503)

Survey Items	Academic Year	Not important	Important	Very important	Chi-Square Test		
		<i>f</i>	<i>f</i>	<i>f</i>	X^2	<i>df</i>	<i>p</i>
To speak and write effectively	Freshman	5	86	173	13.335	6	0.038*
	Sophomore	5	84	202			
	Junior	5	130	274			
	Senior	7	124	408			
To develop an understanding and appreciation of human diversity	Freshman	25	127	112	13.671	6	0.034*
	Sophomore	23	127	141			
	Junior	43	184	182			
	Senior	33	221	285			

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G13

Perceptions Towards Undergraduate Experience by Major (N=1503)

Survey Items	Major	Strongly disagree	Agree	Strongly agree	Chi-Square Test		
		<i>f</i>	<i>f</i>	<i>f</i>	<i>X</i> ²	<i>df</i>	<i>p</i>
During my undergraduate experience, I learned more about things that interest me	Science & Math	20	122	88	30.317	16	0.016*
	Engineering	16	65	57			
	Education	30	181	140			
	Humanities/Social	14	157	163			
	Performing Arts	4	27	43			
	Business	16	67	46			
	Communication	17	74	73			
	Other /Undeclared	6	40	36			
During my undergraduate experience, I gained a general education and appreciation of ideas	Science & Math	24	156	50	42.982	16	0.000**
	Engineering	18	92	28			
	Education	24	238	89			
	Humanities/Social	15	203	116			
	Performing Arts	7	37	30			
	Business	9	93	27			
	Communication	17	99	48			
	Other/Undeclared	5	54	23			
During my undergraduate experience, I got trained for a specific career	Science & Math	61	117	52	128.766	16	0.000**
	Engineering	24	48	66			
	Education	32	165	154			
	Humanities/Social	98	154	82			
	Performing Arts	8	22	44			
	Business	29	65	35			
	Communication	42	78	44			
	Other/Undeclared	31	53	16			
During my undergraduate experience, I became a more cultured person	Science & Math	47	134	49	40.865	16	0.001**
	Engineering	33	74	31			
	Education	64	203	84			
	Humanities/Social	43	178	113			
	Performing Arts	11	33	30			
	Business	28	76	25			
	Communication	35	83	46			
	Other/Undeclared	15	41	26			
During my undergraduate experience, I got prepared for graduate or professional school	Science & Math	44	135	51	44.390	16	0.000**
	Engineering	21	67	50			
	Education	77	199	75			
	Humanities/Social	58	184	92			
	Performing Arts	15	34	25			
	Business	29	70	30			
	Communication	52	79	33			
	Other/Undeclared	25	47	10			

Table G14

Perceptions Towards Students' Learning by Major (N=1503)

Survey Items	Major	Not important	Important	Very important	Chi-Square Test		
		<i>f</i>	<i>f</i>	<i>f</i>	χ^2	<i>df</i>	<i>p</i>
To speak and write effectively	Science & Math	4	89	137	44.211	16	0.000**
	Engineering	3	50	85			
	Education	6	86	259			
	Humanities/Social	4	74	256			
	Performing Arts	1	24	49			
	Business	1	48	80			
	Communication	2	33	129			
	Other/Undeclared	1	20	61			
To develop critical and analytical qualities	Science & Math	8	106	116	36.780	16	0.002*
	Engineering	3	47	88			
	Education	9	182	160			
	Humanities/Social	6	120	208			
	Performing Arts	4	29	41			
	Business	4	52	73			
	Communication	5	68	91			
	Other/Undeclared	2	41	39			
To understand and use technology	Science & Math	7	85	138	34.106	16	0.005*
	Engineering	2	37	99			
	Education	11	147	193			
	Humanities/Social	17	152	165			
	Performing Arts	2	39	33			
	Business	8	45	76			
	Communication	6	64	94			
	Other/Undeclared	3	40	39			
To develop an understanding and appreciation of human diversity	Science & Math	30	113	87	89.173	16	0.000**
	Engineering	22	80	36			
	Education	12	148	191			
	Humanities/Social	19	122	193			
	Performing Arts	3	33	38			
	Business	15	62	52			
	Communication	17	64	83			
	Other/Undeclared	6	37	39			
To understand social and/or behavioral sciences	Science & Math	28	126	76	137.157	16	0.000**
	Engineering	37	67	34			
	Education	19	173	159			
	Humanities/Social	10	125	199			
	Performing Arts	4	38	32			
	Business	13	76	40			
	Communication	14	84	66			
	Other/Undeclared	6	42	34			

To become a community leader	Science & Math	42	118	70	48.535	16	0.000**
	Engineering	18	63	57			
	Education	28	147	176			
	Humanities/Social	49	138	147			
	Performing Arts	11	37	26			
	Business	12	62	55			
	Communication	31	74	59			
	Other/Undeclared	17	35	30			
To influence the political structure and/or social values	Science & Math	55	120	55	53.022	16	0.000**
	Engineering	31	81	26			
	Education	69	196	86			
	Humanities/Social	58	144	132			
	Performing Arts	19	38	17			
	Business	15	72	42			
	Communication	36	83	45			
	Other/Undeclared	17	36	29			
To broaden my acquaintance with and enjoyment of literature	Science & Math	65	125	40	70.202	16	0.000**
	Engineering	49	61	28			
	Education	79	170	102			
	Humanities/Social	58	157	119			
	Performing Arts	8	33	33			
	Business	39	62	28			
	Communication	34	69	61			
	Other/Undeclared	20	49	13			
To learn about arts, music, and/or drama	Science & Math	72	124	34	168.758	16	0.000**
	Engineering	61	56	21			
	Education	96	182	73			
	Humanities/Social	87	160	87			
	Performing Arts	3	14	57			
	Business	45	59	25			
	Communication	30	71	63			
	Other/Undeclared	30	30	22			

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

**Correlation is significant at the 0.001 level (2-tailed)

Table G15

Perceptions Towards Students' Learning by Transfer Credits (N=1503)

Survey Items	Transfer Credits	Not	Important	Very	Chi-Square Test		
		important		important	X^2	df	p
		f	f	f			
To understand and use technology	None	24	215	307	18.025	8	0.021*
	1-30 credits	9	204	236			
	31-49 credits	4	44	50			
	50-65 credits	13	83	120			
	65 or more	6	63	125			
To develop an understanding & appreciation of human diversity	None	57	236	253	24.348	8	0.002*
	1-30 credits	31	224	194			
	31-49 credits	4	43	51			
	50-65 credits	17	93	106			
	65 or more	15	63	116			

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

**Correlation is significant at the 0.001 level (2-tailed)