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**GENDER INVOLVEMENT AT THE GRADUATE LEVEL**

by

Ann Elizabeth Nitsche

A Thesis

Submitted to the  
Department of Educational Services & Leadership  
College of Education

In partial fulfillment of the requirement

For the degree of  
Higher Education Administration

at

Rowan University

March 25, 2021

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## **Dedications**

This thesis, the research, work, and higher education journey I embarked on is dedicated to my supportive parents who have always pushed me to complete my ambitions to my fullest potential. They have encouraged me and reminded me to continue my educational career regardless of what else was going on. They have instilled a sense of dedication and perseverance in raising me that echoes with me “finish what you start”, “give it your best” and “you got this”. For this, I am forever grateful for their continued love, support, and guidance. Mom & Dad, thank you! This is for you!

## **Acknowledgments**

With love, I acknowledge my husband Michael, and our daughters Rose and Claire. Mike, I would not have been able to “finish what I started” without your love, assistance, and unwavering support to our family. You continue to make me proud everyday with your dedication and sacrifice for us. Thank you for all the grand displays, small everyday comforts and quiet but meaningful ways you show your selflessness daily. You are loved beyond words.

Rose and Claire, I hope that this is just one of my many positive examples to you in life. You can do it! You will do it! Always pursue your goals. Empower each other throughout life. Finish what you start. Know your worth, and do not settle for less than you expect. Most importantly always remember to be kind and stay humble throughout the journey. You are the positivity our future holds. I love you, times infinity.

## **Abstract**

Ann Elizabeth Nitsche  
GENDER INVOLVEMENT AT THE GRADUATE LEVEL  
2020-2021

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Master of Arts in Higher Education

This quantitative research study identifies the attitudes and opinions of the target population on identifying a gender gap in graduate-level education. The target population consists of 28 female graduate students enrolled in the spring 2021 semester at Rowan University. The objective of this study is to assess the knowledge about the gender gap and female involvement within the graduate programs at Rowan University, a public research university located in Glassboro, New Jersey. The literature review for the study examines the current research on a woman's place within the realm of higher education. It also discusses the background of women's education and the types of leadership roles they attain. The findings of this study will provide a detailed overview of the survey results and how they relate to our research questions. The conclusion of this quantitative research study will allow the reader to determine their own thoughts based on our findings.

## Table of Contents

Abstract .....	v
Chapter I: Introduction.....	1
Statement of the Problem.....	2
Significance of the Study .....	6
Purpose of the Study .....	6
Assumptions and Limitations .....	6
Operational Definitions.....	7
Research Questions .....	8
Overview of the Study .....	8
Chapter II: Review of Literature.....	10
Introduction.....	10
Background and Trends .....	10
Mattering Theory .....	12
Involvement .....	15
Confronting the Gender Gap in Education .....	17
Gaps During K-12.....	18
Gaps in College.....	21
Gender Gap in Higher Education Leadership and Other Roles .....	24
Summary of the Literature Review .....	26
Chapter III: Method .....	28
Context of the Study .....	28
Methodological Approach and Design .....	29

## Table of Contents (Continued)

Data Collection Strategy .....	29
Population and Sample Selection.....	30
Instrumentation .....	30
Procedures of Data Collection .....	31
How Data Analysis Will be Performed .....	31
Chapter IV: Findings.....	32
Profile of the Participants.....	32
Survey Responses .....	33
Chapter V: Discussion .....	40
Summary .....	40
Conclusions.....	44
Recommendations for Practice .....	44
Recommendations for Further Research.....	45
References.....	46
Appendix A: Recruitment Email .....	49
Appendix B: Consent and Instruction.....	50



## Chapter 1

### Introduction

Gender perceptions have prevailed since the very beginning of time; cave men did the hunting and fishing, but cave women did the child rearing and food preparation. The roles of men and women are clearly defined. Sex and gender, according to Evans, et.al, 2010, are vastly different things even though these terms are often used interchangeably. “Sex is biological, any gender refers to the culturally shaped expression of sexual differences” (p. 329). Society many times determines in one’s early childhood how boys should act or how girls should act. These thoughts carry through to what toys should appear to each sex and what activities or sports each gender is expected to pursue. When a person of a certain sex is not sure where they fit in the broad scope of things, they might be what is referred to as transgender. As late as 2010, Chrisler and McCreagy (2010) stated “particularly exemplary is Western medical institutions’ adherence to the deeply rooted notion that there are only two sexes, underscored by the genotypes XX and XY. From birth, individuals are identified by their external genitalia and then socialized according to the prescribed gender association” (p. 366).

It has taken centuries to get to what we are experiencing regarding our current gender roles. Prior to conception gender expectations are formulated and discussed as to how the child will be raised. Will our daughters be facilitating business meetings while our sons are scheduling and accompanying their children to doctors’ appointments?

In the essay by Mary Hartmen (2011) titled, *Not Your Mother’s Women’s Movement: Women and Leadership in the Twenty-First Century*, is being explored as to

whether the advancement in the role of women in leadership may be seen as “an unfinished revolution toward more genuine equality between women and men” (p. 12). An important example within Hartmen’s (2011) essay was how “The then dean, Erwin Griswold [Harvard Law School], famously asked all the women degree candidates, including Ruth Bader Ginsburg in 1960, to justify taking the place of a man,” (p. 13). Gender equality seems ever changing and continues to grow with new pronouns existing within the sexes that leads to interchangeable roles evolving within the workforce.

### **Statement of the Problem**

The problem of gender inequality has many facets to consider. The progression has been slow in reaching levels of equality. Stereotypes of both sexes has prevailed for so long and in so many cultures that the cycle is hard to overcome. When Betty Friedan did research for her book *The Feminine Mystique* in 1963, she found that women were expected to feel happy and fulfilled with being wives, homemakers, and mothers. Friedan found this to be false for many women including herself. She called it “the problem that has no name.” (Hartmen, 2011, p. 12). It is important to note that gender gap begins early in the career of male and female students. Sadker and Zittleman (2005) conducted research with principals and administrators of kindergarten through high schools and found that in the past when gender was the topic, it mainly meant girls. Girls have higher scores on standardized tests, typically do not have as many behavioral problems as boys, and in general, get better grades. Many teachers in the past and even today help to promote sex discrimination unknowingly by using games that pit boys and girls against each other. Research shows that having girls and boys separated on buses and playgrounds and in the cafeteria reinforces negativity about gender that can pertain to

both sexes. Gender gaps persist because of stereotypical thinking and biases that affect boys and girls alike. (Sadker & Zittleman, 2005, p. 2)

Principals need to address issues like teacher bias. It is known through research and personal observation that boys are called on more often than girls in the classroom. (Sadker & Zittleman, 2005) They also receive more comments or feedback from teachers in assignments and answers that are given. When discipline is involved, teachers tend to be harder on boys than girls even with the same offense.

Kelvin Pollard (2011) informs us that Americans have shown a great increase (over 50%) in the number of women that have been enrolling and graduating from college over the past forty years. Research shows that young women are more apt to enroll in and graduate from college than young men of the same age. Research done by Catherine Rampell (2011) found that many young women are postponing their working lives to get more education or to upgrade the degrees they already have attained. It was stated that males are willing to take mostly any job they can get, but the women seem to be more selective. They know that traditionally they have not had all the advantages offered to males. Culturally men have been expected to be the bread winners and main providers for their family. Younger women are now looking more toward the future and are more independent as opposed to earlier generations.

The numbers of enrollments for men and women returning to school show much higher percentages for women than men. It was found that women will have more opportunities in certain careers than men because of degrees in medical careers such as

dental hygienist, nursing, and home health care which men do not usually pursue because of perceptions of what careers men should be in.

There is a difference in how the sexes experience college and graduate school. Libby Sander (2012) noticed patterns in how students engage in college and how this can influence their development. She found that women seem and are much more diligent about classwork than men. Females get involved within the campus community by volunteering more than males. It was noted that male students spent more time enjoying themselves and relaxing. They have much lower stress levels and more confidence in most areas than female students. It was stated that the sexes “tend to view college differently” (Chronicle of Higher Education, 2012) women have been known to excel more than men in their studies. However, men find it easier to interact at events like job fairs with employers they hope to impress. While women spend more time and energy on classwork and papers, men students have more interaction with faculty on areas such as research projects. It has also been found that women are much harder on themselves than men. Women continually strive to increase the expectations they set for themselves and do not have the same level of confidence as men. This could be because of how they were raised and seen by others.

Graduate schools often pair advisors with graduate students to help with the publishing process. Pezzoni, et al. (2016), stated “we are particularly interested in how the publications of graduate students relate to their gender and the gender of the advisor. We are also interested whether the gender effects of the advisor are mediated by the gender of the graduate student” (p. 3).

For an exceptionally long time it was thought that the topic of nature versus nurture was the reason for differences between the sexes. The questions focused on whether these differences were because of “biological characteristics” or if “socialization” caused them. The gap between men and women has decreased in the areas of “career aspirations” and “degree attainment”. The career paths of studying law and medicine are not only male driven (Sax & Harper, 2007, p. 670). Many times, gender differences appear long before college and these differences are sometimes “reinforced” once students enter college. Recent studies revealed that “men and women had significant different college outcomes even after controlling for differences in their pre-college and college experiences” (p. 670-671). It has become evident that females are earning higher education degrees at much higher rates than males.

Jumana Saleh (2016) researched the topic of the gender learning gap in medical universities. He found that more women than men were admitted, women outperformed males academically, are pursuing and earning more medical degrees and have shown more empathy than men. Additionally, women seem to have more to prove than men. “Stereotyping in medical education is a significant factor that influences women’s academic aspirations by discouraging interests in occupations usually dominated by males, such as engineering and mathematics” (2016, p. 267). It was noted that males still receive better opportunities and positions, along with more pay than females doing the same work.

Research has shown that females in leadership roles have faced struggles gaining titles let alone gaining the respect a male would in the same role/establishment. The percentage of women in these roles is just beginning to gain some traction. When females

do succeed in being promoted to a leadership role or a role equal to a male's title and responsibility/ workload, research has also shown that the pay wage gap is still a real factor. Forbes (2019) reported, that "the American Association of University Women found women earned 80 cents for every dollar paid to a man in the U.S. on average" (p. 1-2).

### **Significance of the Study**

It is important to focus on the inequities that female graduate students, and women in general, face in being recognized as equal counterparts to males. This study brings to light gender differences within higher education and the gaps that need to be filled for equality. This study will share information about the shift in gender norms and the differences females experience within higher education.

### **Purpose of the Study**

The purpose of this quantitative study is to increase the present understanding of the gender gap within the graduate population at Rowan University. A criterion sample survey will be administered. This research will also study female involvement at the graduate level at Rowan University. This study will add to the literature regarding gender involvement changes in the structure of an institution and changing gender "norms."

### **Assumptions and Limitations**

This study is limited to a sample population of graduate students at Rowan University in Glassboro, NJ who volunteered to be study participants during the spring 2021 semester. Participants were notified that their participation is anonymous, confidential and voluntary. It is assumed that the survey participants will be truthful with

their answers and will understand the questions asked. It is to be noted that the findings may be biased due to the data collected and the researcher's perspective.

### **Operational Definitions**

1. Sex: The biological makeup of a person.
2. Gender: How someone portrays themselves; as male or female.
3. Gender Identity: The emotional and psychological sense of self a person has.
4. Gender Gap: The differences experienced as a result of gender identity in many facets of life.
5. Gender Norms: A role that is expected in society of people of a certain sex.
6. Gender Roles: Behaviors that the different sexes take on through culture and norms.
7. Influence: Views from someone that makes an impression on someone about a topic.
8. Institutional Structure: How a college, university, institution, or company is set up and managed.
9. Involvement: Showing interest in, and or taking part in, and or putting effort into, and or being a part of an idea, a movement or a specific part of a group, college, university, institution, company or around others involved within the same interest.
10. Leadership: In a role of influence or decision making, showing strength or power over others or ideas, taking charge of a certain group, or department.
11. Leadership Roles: The part or role one plays in taking charge, guiding a group/ department or taking/ having a stance of authority.

12. Perceptions: What is believed about the roles of the sexes, gender, status, or position.
13. STEM: This acronym stands for Science, Technology, Engineering and Math
14. Students: People enrolled in graduate studies at Rowan University.
15. Title IX: clause of the 1972 Federal Education Amendments, signed into law on June 23, 1972, which stated that “no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance,” (Britannica, 2020, p. 1).

### **Research Questions**

This Study addresses the following research questions:

1. How does a gender gap at the graduate level influence/effect leadership roles?
2. How will female involvement at the graduate level change gender norms?
3. Will more female involvement at the graduate level change the structure of the institution?

### **Overview of the Study**

Chapter II discusses the background and trends regarding the gender gap, and theories to help understand and investigate the gender gap. This chapter also reviews the history of the gender gap, gaps within higher education, and gaps within leadership roles.

Chapter III discusses the method that will be used to collect data about the research problems. This chapter also discusses the population sample, demographics, data collection procedure and data collection instruments and how the data will be analyzed.



Chapter IV presents the findings of the study. It discusses the results of the research questions posed in the beginning of the thesis.

Chapter V summarizes and discusses the major findings from this study as they relate to the literature review discussed in Chapter II. This chapter will also conclude the study and offer recommendations for future research regarding like topics.

## **Chapter II**

### **Review of Literature**

#### **Introduction**

Many changes in education have occurred in the last 30 years. Researchers have noted that the percentage of males seeking bachelor's degrees has declined while females are enrolling in and completing bachelor's degrees in record numbers. The numbers also show that more women are enrolling in graduate schools and earning more master's and terminal degrees than men.

Buchmann and DiPrete (2006) found that "the female advantage in college completion exists across all racial and ethnic groups in the United States, and it is found in most industrialized societies" (p. 516). The findings of other researchers show that this reversal of male to female dominance in education has an impact on the formation of families, the labor market, and marriage patterns. This shift also impacts the gender gap in relation to wages. College officials and administrators now are voicing concerns about diversity on campuses and what this could mean.

#### **Background and Trends**

It is important to look at family background and the changes it has produced regarding the gender gap in education. In the timeframe before the 1960s if both parents in a family had a college education, both sons and daughters had equal opportunity for a college education. However, if parents had not gone to college, sons were favored over daughters to attend college. As the 1970s unfolded, there was a shift in thinking about

educating daughters. Families that had an “absent father” or parents with less education gave more attention to daughters receiving a college education (Buchmann & DiPrete, 2006).

Family resources also played a part in the enrollment shift. Buchmann and DiPrete (2006) noted a change in the value placed on education and family resources. The resources referred to are “family-based financial, social, and cultural resources” (p. 518). The role of women in society in general has always been second to men in many areas. There has been discrimination, conscious or not, by family, educators, and employers due to perceptions and stereotypes about the role women play in society.

The shifting trend in advantage from male to female is also due to the number of women in society who now are the head of families. This is due to the rising numbers of divorce and the number of women having children outside of marriage. Buchmann and DiPrete (2006) disagreed as to why this trend is occurring but noted that “trend data shows that the white female advantage in college completion is largely attributable to a declining rate of college completion among boys whose fathers were high school educated or absent,” (p. 534).

The changing trends concerning marriage in society today offers much information on the gender gap. Research shows that other trends and factors that significantly relate to gender gap issues are “occupational distribution” and poverty (DiPrete & Buchmann, 2005, p. 3). Not all researchers agree with the thinking that occupational distribution adds to the gender gap. The “human capital theory argues that

education is an investment decision” (p. 3). The theory assumes that “trends in educational returns should produce trends in educational investments” (p. 3).

In relation to poverty and the gender gap, research has found that when women get college degrees, it is thought of as “insurance against poverty” (DiPrete & Buchmann, 2005, p. 7). In the last few decades, more women are the head of a household, single or have dependents. “Higher education provides a woman insurance against living in poverty through three mechanisms: higher wages, lower rates of out-of-marriage childbearing, and (because of educational homogamy) lower risks of divorce” (DiPrete & Buchmann, 2005, p. 8).

### **Mattering Theory**

The mattering theory discussed by Nancy Schlossberg (1989) gives an understanding of how the involvement of students can help to “promote the quality of community,” (p. 1). She connects and compares mattering to marginality and how they affect people of different genders, class, and socioeconomic groups (Schlossberg, 1989). Marginality and mattering explore the feelings of people regarding where they belong in society and how they fit in. Information about marginality and mattering may help solve some problems concerning the gender gap.

Schlossberg (1989) makes a connection to her work on mattering and marginality to life transitions. Her work on students transitioning from middle school to high school, and high school to college and beyond has given much insight as to how important these theories are for people in general. Marginality can describe personality types; specifically, how individuals hold on to the past and how they navigate the future as it

relates to their culture. Marginality can be both a permanent and temporary condition according to Schlossberg (1989). Schlossberg (1989) found that everyone can be considered marginal at different times of one's life in different experiences, "marginality elicits feelings about mattering," (p. 3).

Research done by Morris Rosenberg and others (as cited in Schlossberg, 1989) "suggest that mattering is a motive: the feeling that others depend on us, are interested in us, are concerned with our fate, or experience us as an ego-extension exercises a powerful influence on our actions" (Schlossberg, 1989, p. 3). Mattering can affect any individual at any time in their life and in different experiences. This makes mattering "paradoxical" (Schlossberg, 1989, p. 3) because it can affect young and old alike and people of all ethnic, religious, or socioeconomic groups. Mattering is considered a belief and Schlossberg (1989) states it "acts as a motivator," (p. 3).

One aspect that is identified as mattering is dependence specifically who do we depend on, who depends on us. Another aspect is importance specifically who does one consider to be important. Ego-extension, another aspect of mattering, concerns itself with success or failure and whether other people see one in these instances. Attention is another aspect of mattering. Attention links to mattering when a person moves to someplace new or assumes a new job. Appreciation is one more aspect of mattering that can affect a person in family situations, in careers, in schools and other environments (Schlossberg, 1989, p. 3).

Schlossberg and other researchers are exploring the degree that "institutions make their constituents feel they matter" (1989, p. 5). Studies were done with adult learners and

how they felt they mattered to advisers, faculty, and the institutions themselves concerning policies, activities, practices and so forth. In studying institutions of higher learning, it was found that “when an activity program is designed to reach all learners, it can help all students feel connected and involved” (1989, p. 5).

According to Schlossberg (1989) rituals play a major part in marginality and mattering particularly when individuals going through transitions. Some transitions have rituals to accompany them like graduation from college and entering graduate school or the workforce. An example like choosing a major or finishing an assignment does not include a ritual. The researcher Myeroff (as cited in Schlossberg, 1989), feels that rituals are an important part for someone during what he refers to as “lost moments” (Schlossberg, 1989, p. 6). An example of a lost moment would be a divorce or the loss of someone due to death.

Schlossberg and other researchers have devised mattering scales that were used for adult learners in postsecondary education. These scales helped adult learners answer questions about the institutions they attended and if or how they matter to all concerned there. The scales identified five topics, “administration, advising, peers, multiple roles, and faculty” (Schlossberg, et. al., 1990, p. 1). These scales not only helped the students, they also gave-institutions great insight into what they could improve upon. The scales helped institutions in determining problem areas and areas that proved to be successful for them.

The knowledge of marginality and mattering is particularly useful when it relates to getting students fully involved in the learning process. It is important for students to be

aware of their place in community (whether it is a campus community or their home community). It is also useful for students to know where they belong when experiencing different environments, and expectations. Student involvement theory compliments marginality and the mattering theory in assisting students in creating connections to the institution they are attending.

### **Involvement**

Student involvement theory simply means any effort a student makes to become immersed in their college experience (Astin,1999). This effort can be demonstrated in a student's mental preparation for classes and coursework, what a student does physically (make appointments with professors, advisers, peers) and the enthusiasm exhibited by the student in participation of college events. Astin (1999) says the emphasis of this theory is not about feelings or how to go about thinking; it is what the student does to enhance their college experience.

Many times, the administrators, faculty, and staff of an institution, focus on areas such as: acquiring highly rated professors, finances, and creating unique or appealing coursework. All these areas are necessary, but they can be linked to other theories like subject matter theory, resource theory, and individualized theory. Explanations of these theories show that there is value in each; however, student involvement theory is most useful in helping students get motivated to learn. Motivation is a key concept in the student involvement theory because the more students can immerse themselves in their school environment, the more successful they will be.

The policies and practices of an institution need to address many topics that will get students more involved and keep them engaged while they are attending college. Factors like attendance, accessibility of staff, class schedules, honors programs, clubs, and sports are just a few things to consider in order to help keep students involved. Many administrative decisions about nonacademic issues need to be reviewed. Building locations like dormitories, libraries, and student centers need to be planned out carefully. Rules and regulations, cultural events, financial aid policies are all factors that affect the development of students and how they experience college life. (Astin,1999).

Factors that promote persistence of students to remain in college can be as simple as living on campus, making campus jobs available to students, and having productive orientation sessions. Interactions with faculty and peers at social events all support and encourage student involvement. Astin (1999) summarizes that “student involvement theory refers to the quantity and quality of the physical and psychological energy that students invest in the college experience,” (p. 528).

Astin (1999) shows that “the greater the student’s involvement in college, the greater will be the amount of student learning and personal development,” (p. 529). The focus of student involvement theory is to motivate students to actively participate in all aspects of their college life to help them succeed.

Subject matter theory was mentioned earlier in connection with the achievement and development of students. “According to this theory, student learning and development depend primarily on exposure to the right subject matter” (Astin,1984, p. 520). Subject matter theory places an emphasis on the content of the course, the



instructor, and how the course is presented. Success can be gained if the professor is truly knowledgeable. One of the limitations of this theory is that the professor might do the hard work and the student might become a passive participant.

Administrators and policymakers favor the resource theory, which encompass many aspects of the institution. It can pertain to facilities like libraries, dormitories, and laboratories, human resources like counselors, highly esteemed professors and other faculty members and resources having to do with scholarships, financial aid and funds for research. This theory can have many benefits, but it does not ensure that students will make use of certain expensive facilities or take advantage of the knowledge high quality professors might impart.

The individualized theory “attempts to identify the curricular content and instructional methods that best meet the needs of the individual student” (Astin, 1999, p. 521). This theory does not just emphasize curriculum, it considers counseling, independent study for students, and advising as key components. The downside to this theory is the expense and it is hard to “put into practice” (1999, p. 521).

### **Confronting the Gender Gap in Education**

The success of a graduate student depends on their level of campus involvement, their confidence in themselves to successfully pursue their college goals and is influenced as far back as the beginning of their academic experiences from kindergarten through high school. This might be due to perceptions by teachers, administrators and cultural or societal norms. The way the students feel about success and failure in school is much different for boys than for girls. When boys succeed at something, they usually think that

they are smarter than girls. When they fail, they blame it on bad luck or not putting in enough time. “Girls are more likely to attribute success to good luck and failure to inability” (Sadker & Zittleman, 2005, p. 3). Teachers often encourage boys to stick to it and solve problems that are difficult. When girls have problem solving troubles, teachers will help them more readily. That is an example that the expectations for girls are less than for boys.

Girls many times fall into stereotypical beliefs that if they appear to be too smart in subjects like math or science, they will be unpopular. Boys are made to feel feminine if they are attracted to subjects like music, writing, reading, or art. These biases and stereotypes are harmful to both sexes.

### ***Gaps During K-12***

There are many more issues on this gender gap topic that principals and administrators should become aware of and act upon in order to achieve equality for the sexes. It is suggested that districts should review Title IX policies. These policies should be reviewed with and communicated to students, teachers, and parents alike. All districts need to adhere to suggestions like this no matter in what areas they are in, or whether the district is considered wealthy or poor (Sadker & Zittleman, 2005, p. 3).

Single-sex schools are no exception when it comes to breaking barriers concerning sex discrimination. Sadker and Zittleman (2005) found that many single-sex institutions may seem to be better at closing the gender gap. However, the possibility of having teachers of a high caliber, interested, and engaged parents, and smaller classes might be an alternate explanation.

Some researchers who have explored single-sex schools find that they can put boys at a disadvantage. A study done in California showed that these “schools turned out to be a dumping ground for boys with behavior problems, with no funds for teacher training and no specific programs or curricula” (Sadker & Zittleman, 2005, p. 2). The No Child Left Behind Act (NCLB) does not seem to help in prohibiting sex discrimination when it comes to education. “NCLB basically ignores gender issues except for promoting segregation of students by sex” (p. 2).

Whitmore and McGee (2010) presented data concerning both boys and girls in grades K-12. The researchers agreed that all students, male and female, all races and ethnic groups need to have at least one year of education after completing high school in order to survive in today’s world. These researchers feel that all students need better preparation starting in elementary school in order to compete in today’s world.

In addressing the topic of girls not excelling in science, technology, engineering, and mathematics (STEM courses), much research has been done and written about the subject. Studies on this subject explore girls and women in STEM courses and the number of women faculty members who teach those subjects in all levels of education. “It is still the rule that the higher the educational level, the fewer the women and especially so in STEM fields” (Bystydzienski & Bird, 2006, p. 1). It has been difficult for women to pursue careers in the field because of the perceptions about women in STEM fields.

Institutions need to make changes as do policymakers concerning women in this field at any level, whether students or faculty. Instead of “trying to change women to fit

the sciences and engineering, these fields need to be changed in order to fully embrace women” (Bystydzienski & Bird, 2006, p. 5).

The gender gap is reinforced in college when considering the facts that women students have always been at a disadvantage when it pertains to STEM courses. Sax (1994) examined the self-concept of males and females concerning mathematics in college. She found that in general women scored lower on math tests. Studies show that because women have lower confidence in math than men, performance on math tests suffer. Sax notes “that women are more reluctant to voice confidence in math because they have been socialized in a system that discourages the development of women’s mathematical confidence” (1994, p. 142).

Some factors that influence self-concept in math are the successes or failures students had in high school math. Another factor is the question of what degrees students hope to complete concerning math. Some models and theories on this subject of self-concept in math are the “relative deprivation” model, the “environmental press”, and the “internal/external frame of reference” model (Sax, 1994, p. 143).

The relative deprivation theory put in simple terms is, even though one’s math ability could be average or above, “a student will feel more academically confident among a relatively lower-ability peer group than among a higher-ability grouping” (Sax, 1994, p. 144). The environmental press theory has to do with the selection of a college that a student makes. It might be more beneficial to receive a lower grade from a highly selective institution, than receive a better grade from a school that is not ranked as highly (p. 144). The internal/external frame of reference theory explanation is when “math self-

concept is enhanced when students rate their math ability higher than their verbal ability, and when they believe that their math ability is higher than that of their peers” (p. 145). Each of these theories have limitations when students are trying to close the gender gap in some way.

When men and women rate themselves on mathematical abilities men give themselves higher ratings, women give themselves only average ratings. Studies have shown that if female students score higher on the math portion of the SAT, they “are more likely to increase their mathematical confidence during the college years” (Sax, 1994, p. 152). There are two similarities that are shared by both sexes in relation to “changes in math self-concept” (p. 157). These two similarities are: the number of courses taken in science and math, and any satisfaction the students had while taking these courses.

### *Gaps in College*

Americans enrolling and graduating from college has increased over 50% during the past 40 years (Pollard, 2011). Research shows that young women are more apt to enroll in and graduate from college than young men of the same age. These numbers are consistent across ethnic and racial groups. They show that more women are attaining degrees in graduate studies. Pollard notes that when comparing athlete students in Division I schools, more white and African American women graduated within six years. Statistics show many of the schools researched had 70% or more of women’s teams graduate in six years than the percentage of men’s teams. The statistics given on

enrollment and graduation rates for women revealed what he referred to as “the feminization of higher education” (2011, p. 1).

Research by Jaschik (2008) revealed that both female and male undergraduates who participated in sports have higher grades. An interesting fact is that this is because of the increase in faculty that are female. Female student-athletes had higher grades if they were enrolled in private colleges than male student-athlete at private colleges (2008, p. 1).

Some institutions are beginning to focus on many aspects concerning gender. Differences between male and female students in study habits, engagement, and mattering are giving schools insight into how to best accommodate student needs. Males and females engage in college life very differently.

In comparing men and women students, women tend to be more active when it comes to campus activities and excel academically. They do more volunteer work in the surrounding community and “women may spend more time revising papers and hitting the books...” (Sander, 2012, p. 4). They spend more time preparing for class than men do.

Men think more about what job they are aspiring to or concentrate on sports. “We know that men spend less time studying” (Sander, 2012, p. 4). However, they connect better at career fairs with “prospective employers” (p. 3) and have more contact with faculty when working on research assignments. Men are more confident when assessing their abilities than women are.

Research done by Arum (as cited in Sander,2012) found “that the only differences between the genders were in grades (women had higher grade-point averages) and choice of major” (Sander, 2012, p. 4). The question that is hard to answer is why is it more difficult to get male students to engage more and stay in college or even to enroll? Many colleges are trying everything possible to attract more males to enroll in their institutions and complete degree programs. Some schools are even creating classes that appeal more to the male sex. (Sander, 2012)

The choice of majors in college also impacts the gender gap. Women are overrepresented in what is referred to as feminine majors i.e., teaching or health. Men are overrepresented in the sciences, math and engineering. These are considered masculine majors. Research done by Conger and Long (as cited in Ewert, 2012) “found that men disproportionately select majors with lower persistence rates”. Research done by Buchmann and DiPrete (as cited in Ewert, 2012) “found that differences in college major help explain some of the female advantage in college completion among Black students” (Ewert, 2012, p. 828).

Some studies done on college graduation rates of men and women show that more women than men graduate from college and consequently go on to graduate school at higher rates than men do. One possible reason for this is in the “continuous attendance patterns” that have been observed (Ewert, 2012). Men work part-time for various reasons including family responsibilities, head of household etc. which could make it harder for them to complete college and or go on to graduate school.

## **Gender Gap in Higher Education Leadership and Other Roles**

Research on leadership roles in higher education show that “women have outnumbered men in college enrollment for more than 30 years, women still hold only 45 percent of tenure-track faculty positions and 31 percent of tenure positions” (Lewis, 2012, p. 3). The females who are in leadership positions are mainly at smaller institutions. One study shows that “men prefer to work with other men” (Chliwniak, 1997, p. 4). The fact that there are fewer women in leadership positions in higher education means that there are not many women who are mentors to other women pursuing roles of leadership in higher education.

Women who hold the position of a department chairperson have reported facing “sexist behaviors within their departments” (Lewis, 2012, p. 11). The projects they were asked to work on were more in the realm of “service-oriented tasks: (Lewis, 2012, p. 11) while men in the same department were given much more important tasks. Men have the advantage of acquiring tenure faster or receiving more promotions because of the work they are asked to do.

Personal issues and family relations make it harder for women to succeed at high-ranking positions at institutions. College presidents who are female “are less likely to be married than male college presidents” (Lewis, 2012, p. 13). Another factor that leads to fewer women in high positions at institutions of higher learning is the role of motherhood. Many times, childcare is the responsibility of a woman, even if she has a working spouse. Women are known to choose career over family in many instances they delay marriage and or children.



Women in the corporate world face many of the same obstacles. Similar to institutions of higher learning, most women that hold high-level positions in the corporate world are in smaller corporations and some of these smaller corporations are owned by females. In four positions studied (CEOs, Presidents, Chair and Vice-/Chairs) at major corporations, study results “indicate that the gender gap in compensation among top executives was at least 45%” (Bertrand & Hallock, 2001, p. 17). In looking at large corporations, it is noted that there is under-representation of female managers. An article in the Philadelphia Inquirer (June 2014) about Jami Wintz McKeon a female who on October 1<sup>st</sup>, 2014 “will take over as chair of Morgan Lewis, making the 1,400-lawyer firm with more than \$1 billion a year in revenue the largest in the nation headed by a woman.” It took McKeon 33 years of working at the firm to attain the position she assumed in October of 2014. She had to overcome many barriers due to the perceptions of what women are expected to do. Having a supportive husband and children did not make this accomplishment an easy one for her. She worked bi-coastal for many years and was given advice about not having family pictures in her office and how to dress. McKeon let it be known that “the whole idea was to be like a guy.” She did it her way however and is proud of it.

Politics is no exception when it relates to the gender gap. Even though more women are running for office at all levels of politics in the United States, the numbers are still significantly lower than men who are in politics. Females have been stereotyped as not having much interest in politics but there has been a shift in this ideology in recent years. Times and opinions have changed since 1950. At that time men were more liberal than women. Today more women graduate from college than in the past and this “has

made women as a group slightly more liberal over time” (Norrander & Wilcox, 2008, p. 515). Issues that attract women such as birth control, abortion, workplace equality have gotten the attention of women of all ages. This has been part of the change in the number of women running for office at all levels. A monumental barrier has been broken with the election of 2020 election of Kamala Harris as Vice President of the United States of American. This milestone shattered the glass ceiling for other females interested in pursuing politics and leadership roles.

Studies of male and female undergraduate business students show us that differences exist in “ethical attitudes and behavior” (Prasad, et al., 1998). Male and female students participated in answering a questionnaire concerning moral judgments in business and what was termed a “just society” Results of the study showed that “women were more ethical and socially responsible than men” (Prasad, et al., 1998, p. 220).

### **Summary of the Literature Review**

Research on the gender gap has revealed many changes in education and in society, pointing to the increased numbers of women in college as today’s norm. Girls and women are now at an advantage when it comes to enrolling in college. Data confirms that completion of undergraduate and graduate degrees now favor women.

Researchers have found that the reversal of male to female dominance has had an impact on many facets of our society. Family formations, the labor market, and marriage patterns have seen shifts over the years. The gender gap has impacted wages and the way colleges and universities are making changes in order to have diverse student and faculty populations.

Family backgrounds, resources, and the value of education have all contributed to the shift and trends of the gender gap. The perceptions of the role that males and females play in society have made slow progress, but progress indeed.

Educators and administrators at all school levels have recognized discrimination and biased expectations of males and females. They are beginning to make significant changes in all aspects of educating students. It is not acceptable today to think of male and female careers as separate entities. Women students should be encouraged in the STEM fields and men should not be looked at differently if they choose to pursue writing, or other fields thought to be feminine fields.

Much has been done in all areas of our society in order to close gender gaps. People are recognizing that in education, the corporate world, politics, and in all aspects of our life equality could and should be achieved in order to have a just and fair society. There is still much to be done.

## **Chapter III**

### **Methodology**

#### **Context of the Study**

Chapter II discussed the background and trends regarding the gender gap, and reviewed the history of the gender gap, gaps within higher education and gaps within leadership roles. Chapter III discusses the method used to collect data about the research problems. This chapter also discusses the population sample, demographics, data collection procedure, and data collection instruments and how the data will be analyzed.

The purpose of this study was to assess the knowledge about a gender gap and female involvement in the graduate programs at Rowan University, a public research university located in Glassboro, New Jersey. A quantitative approach was used to help further assess if gender involvement changes the structure of an institution or even changes gender “norms”. As mentioned in Chapter II, this study examined gender involvement differences within higher education and gaps that need to be filled for gender norm equality. The research questions proposed in this study are:

1. How does a gender gap at the graduate level influence/effect leadership roles?
2. How will female involvement at the graduate level change gender norms?
3. Will more female involvement at the graduate level change the structure of the institution?

## **Methodological Approach and Design**

This study uses a quantitative sampling approach and focuses on stratified random sampling. The stratified random sampling helped to keep the sample size smaller. The subgroup selected is the population of female graduate students at Rowan University.

There are many characteristics that define and describe what a quantitative inquiry should consist of. In the *Fundamentals of Educational Research*, McMillan, (2012) discusses what should be addressed in exploring the problem of a study. First the researcher must determine if there is something significant or important enough to be researched. When that is determined the problem must be “stated clearly and succinctly” (p.435). Another consideration is to build on what has already been learned to enhance new findings.

Quantitative research was used in this study to learn about the attitudes and opinions of the participants regarding gender involvement for female graduate students at Rowan University. The results collected were useful in determining how it might be possible to change the existing gender norms and procedures at colleges and universities to ensure equality for all students.

## **Data Collection Strategy**

The survey was distributed through email in the spring 2021 semester to the students who met the demographics. An IRB application was submitted and approved before distribution of surveys to the participants. The study omitted any personal identifiable information to help the subjects stay anonymous. There was an area for the

participants to consent to using their answers as results in this study. The survey items were formulated in hopes of receiving honest responses from the subjects.

### **Population and Sample Selection**

The target population for this study was female graduate students at Rowan University during the spring 2021 academic semester. It is recorded on the Rowan University website, under Fast Facts (2020), that between 2019-2020 Rowan University enrolled 2,417 graduate students in over 46 different master's programs. According to College Evaluator (2020), Rowan University currently has 1,960 females enrolled in graduate programs in total. The female graduate students enrolled in the Master's in Higher Education Administration program in the College of Education is 69. Those in this major who met the study's criteria received an email invitation to participate in the survey (Appendix A).

### **Instrumentation**

The instrumentation that was used to assess the involvement of female graduate students' education at Rowan University for the spring 2021 semester was a Likert Scale. This scale proved to be an appropriate instrument in measuring the gender involvement at the graduate level. The survey included seven statements presented in a 5-point Likert Scale (Strongly Agree/ Somewhat Agree/ Neither Agree nor Disagree/ Somewhat Disagree/ Strongly Disagree).

The validity and reliability of the instrument was determined by the experiences and opinions of the female graduate students that were surveyed. A pilot test of the

survey was conducted on four higher education administration students in the Seminar I class in fall 2020.

### **Procedures of Data Collection**

The participants were informed of the purpose of the study, that the survey was optional, and their participation was strictly voluntary, and how their results would be evaluated. They were assured that the survey would be confidential. The approximate time of the survey should have taken the participants to complete was no more than five minutes. The duration of the study was 10 months. Eight months was the length of the course and the remaining two months were for analysis of the data. There was no compensation offered and no funding needed.

### **How Data Analysis Will be Performed**

This study consists of independent and dependent variables. The independent variables included the subjects' demographic information, that they are females and were currently enrolled graduate students in the Master's in Higher Education program in the College of Education at Rowan University in the spring 2021 semester. The dependent variables included the subjects' reported answers which could also be considered their point of view.

The results of the survey show the involvement of females at the graduate level. Using software, I analyzed the data using descriptive statistics which will look at standard deviations of the variables, means, percentages and frequency distribution based on the participants survey answers and the proposed research questions.

## **Chapter IV**

### **Findings**

The context of this study explores gender involvement at the graduate level. Information in previous chapters discussed that background and trends pertaining to the gender gap has shown some modification through the ages but still falls short when it comes to advancement and equality of the roles played by all genders. This has been demonstrated by the lack of females in leadership roles in all aspects of life experiences.

A quantitative approach was taken to gather information from female graduate students at Rowan University to gain knowledge regarding gender “norms” and whether gender involvement changes institutional structures.

The research questions pursued in this study are:

1. How does a gender gap at the graduate level influence/effect leadership roles?
2. How will female involvement at the graduate level change gender norms?
3. Will more female involvement at the graduate level change the structure of the institution?

### **Profile of the Participants**

The population surveyed for this study was a voluntary sample population of 28 female graduate students enrolled in the College of Education at Rowan University. The experiences and opinions of the female graduate students were captured through their survey responses.



## Survey Responses

Survey question one asked: Has there been/ is there a significant female in your life that holds a professional leadership role? Of the responding participants 10 answered that they strongly agreed, 10 somewhat agreed, two neither agreed nor disagreed, one somewhat disagreed, and five strongly disagreed. Most participants that answered this question said there has been a significant female in their life that holds a professional leadership role. The results were positive, 70% of the participants surveyed feel they have a significant female in their lives to emulate in their professional careers.

Survey questions two and three were omitted from the data. Their relevance proved to not be sufficient in helping support, confirm or dispute the research questions. The questions omitted are considered limitations to the study.

Survey question four asked: You feel Rowan University has promoted student involvement by creating inclusive opportunities for female students? Seven participants strongly agreed, nine somewhat agreed, nine neither agreed nor disagreed, three somewhat disagreed, and none strongly disagreed. Most participants felt Rowan University has promoted student involvement by creating inclusive opportunities for female students. The results to this survey question were positive in stating that 57% of the participants surveyed feel that Rowan University has promoted student involvement by creating inclusive opportunities for female students.

Survey question five asked: You have had a female mentor motivate you to be an active participant in university affairs? Of the responding participants 13 strongly agreed, 10 somewhat agreed, two neither agreed nor disagreed, two somewhat agreed, one

participant strongly disagreed. Most participants said they felt motivated by a female mentor. These results were positive, 82% of the participants surveyed feel they have had a female mentor motivate them to take an active role in university affairs.

Survey question six asked: You felt encouraged by professors/ advisors while taking STEM classes? Four participants strongly agreed, three somewhat agreed, 12 neither agreed nor disagreed, one disagreed, and eight strongly disagreed. Most participants were unsure or felt they have not been encouraged by professors/ advisors while taking STEM classes. Of the participants surveyed 42 % stated that they had no opinion about feeling encourage by their professors or advisors while taking STEM classes.

Survey question seven asked: The graduate program at Rowan University makes you feel like you matter? Of the responding participants 10 strongly agreed, 10 somewhat agreed, five neither agreed nor disagreed, one somewhat disagreed, and two strongly disagreed. Most participants felt that the graduate program at Rowan University makes them feel that they matter. These results were positive, 71% of the participants surveyed stated that the graduate program at Rowan University makes them feel as though they matter.

Research question one asks: How does a gender gap at the graduate level influence/effect leadership roles? In reviewing the data this research question lacks relevance and cannot be answered within this study. The survey questions asked were not geared toward providing clear answers for this question. There were no survey questions

geared to male students. There was no data collected that included percentages of males versus females within the graduate program.

The first research question that will be answered in this study is research question two: How will female involvement at the graduate level change gender norms?

The data from survey question one (Has there been/ is there a significant female in your life that holds a professional leadership role?) responds to this research question. The data shows strong evidence that the female graduate students surveyed have had a significant female in their lives that holds a professional leadership role. The results to this survey question are significant in helping answer this research question because when women hold professional leadership roles this places them in positions to be more than what their assigned gender roles have led them to be in the past. Their decisions, opinions, and how they approach situations about topics and matters of importance, may change, or even improve conversations or actions that are paving the way for an environment that is more equal.

The data from survey question five (You have had a female mentor motivate you to be an active participant in university affairs?) also responds to this research question. The data reviewed from survey question five reflects that the survey participants feel they have had a female mentor to motivate them. This leads the researcher to assume that since the female graduate participants feel that a female mentor has motivated them to become active in the university community, this will motivate them to help/ mentor others when they are able to do so. When someone feels motivated, they in turn are more inspired to motivate others.

The data from survey question six (You felt encouraged by professors/ advisors while taking STEM classes?) responds to this research question. The data reviewed from survey question six can be analyzed in two ways; if females have not felt encouraged within STEM courses throughout their educational journey it is possible, they will not encourage other females or may not know how to encourage other females regarding STEM courses. An opposing opinion may be, that because these females have been overlooked while taking STEM courses, they feel an obligation to help encourage other females to take STEM courses and excel in them.

The data collected that responds to research question two, (How will female involvement at the graduate level change gender norms?) presents a positive answer. Yes, more female involvement at the graduate level of education will change gender norms. The results support this because; the participants surveyed answered they have significant females in their lives that hold professional leadership roles, and they have a female mentor who motivate them to be more involved in institution affairs.

There is hope that the females who did not feel encouraged by their professors/ advisors while taking STEM classes will change the future because of their experiences by doing the opposite. If female professionals encourage more female involvement in STEM courses graduate school education should provide females with knowledge of the importance of STEM courses. The females of the future will have the mentors, and role models of women in professional leadership roles; so, they will have what it takes to show encouragement for others while taking STEM courses.

The more female involvement there is at the graduate level within an institution the more gender norm(s) will change. In the past gender norms have been associated with females in less prominent roles. Females viewing other females in professional leadership roles will hopefully motivate and encourage women to strive for more than nonprofessional work. Females who have other female mentors to motivate them to be more active in university affairs will hopefully instill in women that they should continue to get involved in professional ways and not follow the gender norms of the past viewing them as non-professionals or strictly homemakers. Having supportive female mentors and women who hold professional leadership roles in their lives has the possibility of giving females more confidence to pursue higher positions in their future career.

The final research question that will be answered is research question three: Will more female involvement at the graduate level change the structure of the institution? This question can be answered from using the data from survey questions number, four, five and seven; these questions ask about student involvement and creating inclusive opportunities, mentors, and mattering.

The data from research question four (You feel Rowan University has promoted student involvement by creating inclusive opportunities for female students?) responds to this research question. The data reveals that the participants surveyed feel that Rowan University has promoted student involvement and creating inclusive opportunities for female students. This feedback is positive, it is encouraging to know there is support available for female students to feel valued and meaningful.

The data from research question five (You have had a female mentor motivate you to be an active participant in university affairs?) that responded to research question two, it also responds to research question three. This data reflects that the survey participants feel that they have female mentors to motivate them. Having female mentors motivate other females to participate in the university, leads to women supporting women. This is important because it suggests that women-are using their resources and experiences to make it easier to fit into roles in the university where women have been previously overlooked.

The data from research question seven (The graduate program at Rowan University makes you feel like you matter?) also responds to this research question. The participants surveyed answered that Rowan University makes them feel that they do matter as graduate students. Feeling that you matter within your institution is of great importance. It is helpful for one to know that people depend on them and care for them as they depend on and care for others. This gives female graduate students a sense of purpose and pride.

The data collected to answer research question three, (Will more female involvement at the graduate level change the structure of the institution?) presents a positive answer. Yes, more female involvement at the graduate level of education will change the structure of an institution. The results are in favor of this because; the participants answered that they feel Rowan University has promoted student involvement and created inclusive opportunities, that they have a female mentor that motivates them to be more involved in institution affairs, and that feel they matter at Rowan University.

Females knowing, they matter promotes getting female students more involved in the campus community. This can lead to joining university organizations, clubs and doing volunteer work sponsored by the institution and other worthy causes to promote community relations.

The more female involvement there is at the graduate level at an institution the more women could end up in leadership roles in the future. If there are increased numbers of females holding professional leadership roles at institutions, this will change the structure of who has held leadership roles in the past. Regardless of how many positions are currently held by males versus females, the structure of an institution will change due to adding different perspectives and experiences.

## **Chapter V**

### **Discussion**

#### **Summary**

Much of chapter one of this study made references from researchers about perceptions that have prevailed through the ages of the roles regarding the different sexes. It was stated that the terms sex and gender are many times used interchangeably but should not be because they are vastly different. Research shows that the gender gap and inequalities begin at an early stage of life and follow through to adulthood as males are afforded better opportunities than females doing the same work within professional settings.

Chapter two discussed the importance of family background and how it effects the gender gap in education. Statistics like whether one or both parents completed a college education made a difference in whether sons were encouraged more than daughters to attend college. Different factors in determining a female's future in higher education also depended on the resources of a family. Trends have shifted over the years to females having advantages over males because there are more women running households now than ever before. This trend is due to more modern-day families and the more independent lifestyles of women today. Nancy Schlossberg's mattering theory (1989) was discussed throughout chapter two and the student involvement theory and marginality were also discussed.



Chapter three provided an overview of the quantitative approach that was used to access gender involvement and if it changed the structure of Rowan University or even gender “norms”.

Chapter IV discussed and reviewed the study’s findings including the survey data collected. The research questions are:

1. How does a gender gap at the graduate level influence/effect leadership roles?

This research question was unable to be answered. It proved to be irrelevant within the research and no data was collected to help support or answer the question.

2. How will female involvement at the graduate level change gender norms?

The data collected to answer this research question suggested that more female involvement at the graduate level will change gender norms because, the more females are immersed in colligate environments the more marketable and in demand they will become. The more initiative females take towards their graduate degrees, there more their presence will be noticed and sought after. This opens opportunities and places females in a professional working environment instead of the home. It is up to them to promote themselves and other females when possible.

3. Will more female involvement at the graduate level change the structure of the institution?

The data collected to answer this research question suggested that yes, more female involvement at the graduate level will change the structure of the institution. The institution’s structure will be changed because, there will be more women holding titles

of importance. Women have different experiences and perspectives than men do, they connect and engage differently, and they comprehend and counsel in different ways. These differences will inevitably change the structure of the institution, as they should. It is to the benefit of the institution to have a well-rounded environment that reaches different audiences and invigorates the campus.

The study participants have evolved in positive, meaningful, and professional ways. It is encouraging to know that there were significant role models for them, influential female mentors, that the students felt that they mattered, and had inclusive opportunities in their campus community.

A limitation found while concluding this study involves the two survey questions that were omitted from the study findings. These questions were asked of the survey participants, and data was collected to respond to these questions, however, the data did not effectively respond to the research questions asked.

These questions were not relevant because, they were vague and subjective. The questions would also be considered limitations because the data collected from these omitted questions was not strong enough to assist in reaching outcomes to support the research questions asked.

A limitation that this study faced was that it was conducted during a global pandemic which required quarantining and social distancing due to the Novel Coronavirus (COVID-19). The data collection for this study was limited to remote interaction which hindered some participants' interactions.

A bias found within the study is the pursuance of information of female graduate students within the Masters of Higher Education program in the College of Education at Rowan University only. It is particularly important to considering their experiences, preferences, feelings, and involvement. This study focused on females to promote and encourage their professional leadership opportunities. This study could be considered biased for population reasons, only female graduate students within the College of Education at Rowan University were asked to participate because that is the pool that was accessible at the time the study was in progress.

An assumption that was made while preparing this study was that there would be more information revealed about a gender gap within higher education. The assumption of a gender gap was echoed throughout the early stages of schooling that focused on the different perceptions and treatment of boys versus girls. Studies mentioned throughout chapter two discussed many instances in which males were given more praise and attention for their efforts even though females put in an equal amount of effort or more. It was also noted that this trend continued throughout, college and into their work experiences.

This study's findings suggest that when females are more involved in campus culture it makes for a more diverse and well-rounded experience for the campus community. As female involvement continues to grow the more the institution will foster female leadership roles. As the number of female professionals that hold leadership roles within a college or institution grows, there will be a shift in gender "norms" from-what school-age girls' perceptions are regarding their future endeavors. It will set a high bar for females to strive for.

## **Conclusions**

The goals of this research study were to respond to the three research questions and shed light on the importance of female involvement in higher education. The first research question was not responded to due to its irrelevance and lack of data to help support the question. Overall, the goals were achieved with responding to research questions two and three and gaining knowledge regarding female-involvement. The data collected strongly suggested that student involvement and inclusivity opportunities are permeating throughout Rowan University.

I continue to be curious about gender roles and the importance of representing both males and females as equals in professional settings and in their roles with gender norms. I see this study as being a thorough starting point for future researchers to collect data regarding different topics aligned with this study. It is clear to me that the topic of gender norms and female involvement is only going to become more important as years pass. Bringing attention to how things could improve with different experiences and views being valued and respected is something I feel strongly about and will continue to commit myself to.

## **Recommendations for Practice**

This study should matter to this generation and the generations of students to come. It is important not only for females but for males to recognize and begin to give credence to the positions that females are aspiring to. Females can bring even more enlightenment to the table of higher education than there is already. The importance of fostering an atmosphere for females in professional and leadership roles helps society.

The idea that women have more to offer than traditional gender roles and norms is one that will improve the lives of children within traditional and non-traditional families. The world will benefit from well-rounded households and the examples they set.

In analyzing the results of this study, I vow to mentor students to the best of my ability when opportunities present themselves. Encouraging other females to push forward within their educational and professional careers, and helping them to reach their goals, seems much more important now that I received data on the results of females being involved. Knowing that I could have an impact on the university being more equally represented between genders keeps me motivated. I hope my research and leading by example helps other females to be mentors and positive role models also.

### **Recommendations for Further Research**

The implications of this study will hopefully advance policy making regarding gender equality and what it can mean for the betterment of the institution. This can lead to better practices among leadership roles by recognizing the importance of equal representation among all students. New theories may be proposed to help define justification for implementing new standards for inclusion within all courses and majors regarding the genders. Concentration should be given in the areas of STEM associated courses and majors, funding programs to enhance involvement, and focusing on helping students feel as though they matter within the institution. This study and similar studies are hopefully just the starting point of these conversations.

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## Appendix A

### Recruitment Email

Subject: Graduate Involvement

Be part of an important graduate research study! Volunteers are needed for a graduate involvement research study.

Are you female?

Are you in a master's program at Rowan University?

Are you in the College of Education?

We aim to investigate gender inequality at the graduate level.

This study will take roughly five minutes and include an online survey via Qualtrics:

[https://rowan.co1.qualtrics.com/jfe/form/SV\\_d73BhtHTXNOpeWV](https://rowan.co1.qualtrics.com/jfe/form/SV_d73BhtHTXNOpeWV)

Please contact Dr. Andrew Tinnin (Principal Investigator) or

Ann Nitsche (Co-Investigator) with questions at amunds86@students.rowan.edu

This study has been approved by Rowan University's IRB (Version 1, 12/17/2020, PRO-2020-236)

## **Appendix B**

### **Consent and Instruction**

#### **Graduate Involvement**

You are invited to participate in this online research survey entitled Graduate Involvement. You are included in this survey because, you are an enrolled female graduate student at Rowan University. The number of subjects to be enrolled in the study will be 20.

The survey may take approximately five or less minutes to complete. Your participation is voluntary. If you do not wish to participate in this survey, do not respond to this online survey. Completing this survey indicates that you are voluntarily giving consent to participate in the survey.

The purpose of this research is to study female involvement at the graduate level to promote change in higher education to give females better opportunities and advancement within their careers, there will be 20 subjects involved in the study.

There are no risks or discomforts associated with this survey. There may be no direct benefit to you, however, by participating in this study, you may help us understand female graduate involvement and promote changes in higher education to give female graduate students better opportunities.

Your response will be kept confidential. We will store the data in a secure computer file and the file will be destroyed once the data has been published. Any part of the research that is published as part of this study will not include your individual information. If you have any questions about the survey, you can contact Ann Nitsche at the address provided below, but you do not have to give your personal identification.

Dr. Andrew Tinnin

Email [tinnin@rowan.edu](mailto:tinnin@rowan.edu)

Work Phone (856) 256-4909

If you have any questions about your rights as a research subject, please contact the Office of Research Compliance at (856) 256-4078– Glassboro/CMSRU. This study has been approved by the Rowan IRB, (Version 1, 12/17/2020, PRO-2020-236).

Please complete the checkbox below:

To participate in this survey, you must be 18 years or older and you must be a currently enrolled, female graduate student at Rowan University (12)

Completing this survey indicates that you are voluntarily giving consent to participate in the survey (13)

Are you a currently enrolled female graduate student in the College of Education at Rowan University?

Yes (1)

No (2)

Has there been/ is there a significant female in your life that holds a professional leadership role?

Strongly agree (1)

Somewhat agree (2)

Neither agree nor disagree (3)

Somewhat disagree (4)

Strongly disagree (5)

Have you ever been overlooked (to your knowledge) for an academic or professional task or promotion based on your gender?

Strongly agree (1)

Somewhat agree (2)

Neither agree nor disagree (3)

Somewhat disagree (4)

Strongly disagree (5)

You feel you have ever been influenced to take a certain class or pursue a certain major because of your gender?

- Strongly agree (1)
- Somewhat agree (2)
- Neither agree nor disagree (3)
- Somewhat disagree (4)
- Strongly disagree (5)

You feel Rowan University has promoted student involvement by creating inclusive opportunities for female students?

- Strongly agree (1)
- Somewhat agree (2)
- Neither agree nor disagree (3)
- Somewhat disagree (4)
- Strongly disagree (5)

You have had a female mentor motivate you to be an active participant in university affairs?

- Strongly agree (1)
- Somewhat agree (2)
- Neither agree nor disagree (3)
- Somewhat disagree (4)
- Strongly disagree (5)

You felt encouraged by professors/ advisors while taking STEM classes?

- Strongly agree (1)
- Somewhat agree (2)
- Neither agree nor disagree (3)
- Somewhat disagree (4)
- Strongly disagree (5)

The graduate program at Rowan University makes you feel like you matter?

- Strongly agree (1)
- Somewhat agree (2)
- Neither agree nor disagree (3)
- Somewhat disagree (4)
- Strongly disagree (5)