Advancing Women in Leadership Vol. 31, pp. 199-212, 2011
Available online at http://advancingwomen.com/awl/awl_wordpress/
ISSN 1093-7099

Full Length Research Paper

Teaching Leadership to Female Students in Saudi Arabia

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Accepted July 31, 2011

Education in Saudi Arabia has become a great interest to many of its people. Additionally, women's education and leadership have become a dynamic interest to many. This research gives light to how females perceive and their understanding of leadership at Prince Mohammad Bin Fahd University (PMU). The central focus of this research project was to evaluate the impact of a leadership course on improving leadership outcomes for female students studying at PMU in Saudi Arabia. In order to achieve this goal, a pre-test/post-test quantitative design was employed. The sample for this investigation was drawn from undergraduate female students enrolled in a leadership course at PMU taught by the researcher.

Keywords: education, leadership, saudi arabia, females in saudi arabia, higher education in saudi arabia, female leadership in saudi arabia, prince mohammad bin fahd university (pmu), middle east, education in the middle east

Introduction

As educators, it is important to know if your students grasp the material being taught. It is also vital to understand the demographic, culture, and population you are teaching. Education in Saudi Arabia has become a great interest to many of its people. Additionally, women's education and leadership have become a dynamic interest to many. This research gives light to how females perceive and their understanding of leadership at Prince Mohammad Bin Fahd University (PMU).

Saudi Arabia

The Kingdom of Saudi Arabia extends to approximately 2,250,000 square kilometers (868,730 square miles) between the Arabian Gulf on the east and the Red Sea on the west. With the United Arab Emirates, Qatar, and Bahrain to the east, Saudi Arabia shares borders with Kuwait, Iraq, and Jordan in the north and Yemen and Oman in the south. The largest country in the Middle East is Saudi Arabia, which occupies four fifths of the Arabian Peninsula and is comparable to western Europe in size (Ministry of Higher Education, 2010). Saudi Arabia was established in 1932 by King AbdulAziz Ibn AbdulRahman Al Saud. The country covers about 900,000 square miles. Saudi Arabia is located in southeast Asia with an estimated population of 19 million people. Islam is the official religion, and Arabic is the official language. Many scholarly sources portray women's education, since it started, as being highly valued in Saudi society (Zurbrigg, 1995, p. 82). According to Zawya, (2010) during 2009-2010, the labor force participation rate of women has climbed from 20% to 22% in the Kingdom, the perception of the wage gap for similar work improved, literacy rates improved, and women's enrolment in tertiary education increased from 35% to 37%.

Higher Education in Saudi Arabia

The postsecondary system of education in Saudi Arabia is comparable to the educational system of the United States. However, the patterns and procedures of these educational systems have been adopted in accordance with Islamic systems, traditions, and customs (Ministry of Higher Education, 2010). In 1975, a segment of the Ministry of Education became a separate entity and was renamed the Ministry of Higher Education with the purpose of dealing exclusively with higher education. The Ministry of Higher Education (2010) stated the following:

Among its responsibilities were: Proposing the establishment of higher educational institutions and authorizing them to offer special programs in accordance with the country's needs.

- Creating and administering universities and colleges in the Kingdom.

- Raising the level of communication and coordination between institutions of higher learning and coordinating with other governmental ministries and agencies in terms of their interests and needs in higher education.
- Representing the government abroad in all educational and cultural affairs, through various cultural and educational offices distributed over 32 countries.
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According to the Ministry of Higher Education (2010), the Higher Education Council is the supreme authority for postsecondary education affairs with the specific task of supervising and coordinating its institutions, with exceptions of military education. Some of the Council's responsibilities involve directing university education in accordance with policy, supervising the development of university education in all sectors, coordinating among universities especially in the field of scientific departments and degrees, encouraging research, and formulating rules and regulations for compliance by all institutions of higher learning (Ministry of Higher Education, 2010).

Women's Education in Saudi Arabia

In the Kingdom of Saudi Arabia, it is difficult to trace the beginnings of education for women before the amalgamation of the Kingdom in 1930 (Calvert & Al-Shetaiwi, 2002). Before that date, most education for women was mostly at home with the help of a female teacher and concerned the Quran and understanding Islamic law (Calvert & Al-Shetaiwi, 2002). Calvert and Al-Shetaiwi (2002) stated that education in Saudi Arabia is not obligatory, but it is available to anyone who wishes to join the government schools; hence, student preferences play a part in the output from the educational system. The government does provide free, general scholarships for students (male and female) in some areas of general education and in all vocational, technical, technological, and higher education with free transportation for all females (Calvert & Al-Shetaiwi, 2002).

Hamdan (2005) noted that women's schooling at all levels which comprises elementary, secondary, high school and university remained under the Department of Religious Guidance. However this changed in 2002, as the boys' education was supervised by the Ministry of Education. This was to guarantee that women's education did not differ from the original principle of female education, which was to make women good wives and mothers, and to prepare them for 'acceptable' jobs such as teaching and nursing that were believed to suit their nature (Hamdan, 2005).

According to Hamdan (2005), the history of women's initiatives to accomplish education reaches back to as early as the 1940s. The Ministry of Higher Education began sending a few bright young Saudi men to continue their studies abroad. One adolescent woman by the name of Fatina Amin Shakir sought the same opportunity. She applied for a Ministry of Higher Education grant to study abroad, but was rejected. According to the Ministry, it was immoral to allow young single women to study abroad. Fatina and her father appealed to King Faisal, who was known to be a supporter of women's education. Fatina became one of the first Saudi women to hold a Ph.D. (Hamdan, 2005). Her thesis, which focused on the modernization of Third-World countries, featured an interview with King Faisal, the man who had made her dream come true (Arebi, 1994; Hamdan, 2005; Lacey, 1981). Fatina Shaker, a female Saudi anthropologist and perhaps the first to obtain a Ph.D. degree from Purdue University, believed that denial of women's rights is rooted in the authority of social practices, stated by Fatina as laws or traditions, rather than rooted in Islamic fundamental nature (Arebi, 1994, p. 217; Hamdan, 2005).

In September 1963, the government had to send forces to stop a protest in Buraydah, where much of the opposition to girls' education took place. The citizens of this town had to be restrained by force from demonstrations when they heard of the plan to educate women. Former King Saud started the informal schooling and Faisal managed to convince tribal bedouins of the importance of formal schooling for women (Hamdan, 2005; Huyette, 1985 p. 74). It was Iffat Al Thunayan, King Faisal's wife, who pressed for the education of women in Saudi Arabia. She made her wish that women be allowed to pursue science, language, and other subjects into a reality. Saudi Arabia was the last country in the Gulf nations to introduce secular education. Iffat established the first girls' school in 1956.

Prince Mohammad Bin Fahd University

PMU is a private institution of higher learning in the eastern province of the Kingdom of Saudi Arabia. PMU adopts the North American model of education and its system (i.e., administrative, financial, and academic programs) was designed by Texas International Educational Consortium (TIEC). TIEC is a consortium of 32 American universities in Texas. PMU has charted an ambitious course for a university that honors the traditions and culture of the Kingdom of Saudi Arabia while utilizing cutting-edge contemporary teaching practices and technology in providing higher education (PMU, 2006). The university's vision is as follows:

The vision of the founders for the university is to be a unique and distinguished higher education institution that participates in:

- Preparing future leaders in various fields of human knowledge and its application.
- Enriching and developing intelligence.
- Exploring innovative methodologies and technologies to achieve its objectives.
- Breaking the barrier between academic and business society.

English is the language of instruction in all degree programs and courses except those devoted to Arabic language and Islamic studies. According to Walker (2004), many consider Saudi to be a highly male-dominated society that creates many social barriers that challenge women in leadership roles. PMU was established in 2006 with the idea to educate Saudi nationals and international students. However, what is unique about PMU and its location in Saudi Arabia is that it created a female campus and a male campus. The male campus houses academic facilities for male instruction in the Colleges of Engineering, Business Administration, and Information Technology. It also houses facilities for male instruction in the Preparation Year Program and PMU Core Curriculum. The university administration building is in the male portion of the campus. The female campus houses academic facilities for female instruction in the Colleges of Business Administration and Information Technology and the Department of Interior Design. It also houses facilities for female instruction in the Preparation Year Program and PMU Core Curriculum. This means that not only would men have an opportunity to be educated but also women.

All degree programs include a core of academic subjects. These subjects are distributed among five principal areas: PMU competencies, written and oral communication, mathematics, natural and physical sciences, and social and behavioral sciences. In addition, all students complete the PMU Assessment Capstone Series of courses in which they demonstrate their abilities to assimilate and apply the knowledge and skills they have learned. The content of the capstone series varies according to major (PMU, 2006). PMU teaches its students six different competences—one of which being leadership and team work.

According to Hamdan (2005), statistics show that in 1990 women represented 47% of the total undergraduate enrolment at colleges and universities in Saudi Arabia. In 2010, PMU experienced its first female graduates. With this in mind, it is important that its graduates are prepared to enter leadership roles within their college majors.

What is Leadership?

Leadership is an important part of university students' education. Omatsu (n.d.) stated that students need to learn leadership skills. They need to learn leadership skills in college so that they can help their communities. A small number of students learn the leadership skills they need for their future jobs or to serve their communities from their college classes. In most universities, the development of student leadership skills is not part of the academic curriculum but relegated to *extracurricular* activities (i.e., it is regarded as part of students' nonacademic activities in clubs and organizations; Omatsu, n.d.).

According to PMU (2006), leadership is defined as the ability to be informed, effective, and responsible leaders in family, community, and the Kingdom. Teamwork is defined as the ability to work effectively with others to accomplish tasks and achieve group goals. Fertman and van Linden (1999) stated that most leadership theorists currently agree that leaders are made not born. College students can learn and develop leadership attitudes and skills.

Zeldin and Camino (1999) summarized five areas of competency that differentiate leaders and shape students leadership development efforts:

- Communication—persuasive argumentation, public speaking/writing, and engaging the participation of others;
- Teamwork—respecting others, performing roles of both leader and follower, building on strengths, and commitment to free group input and expression;
- Personal Identity—understanding the relationship between oneself and the community, pride in being a member of a larger group, awareness of areas for self-improvement, taking responsibility for one's actions and the resulting consequences;
- Professionalism—demonstrating tactfulness, understanding protocols, appropriate dress and action given appraisal of context, delivering quality work, positively presenting oneself to others; and
- Project Management—setting goals/developing action steps, meeting facilitation, reflection, distinguishing between one's interests and community needs

Young people need to develop their leadership skills in situations that are important, which allows them to become actively engaged in decision-making processes (Fertman & van Linden, 1999). The development of leadership contributes significantly to the positive development of young people and their communities. Leadership skills, such as goal-setting, problem-solving, and sound decision-making, are not just necessary for leaders—these skills are needed for success in today's world (MacNeil 2000).

A historical frame of the idea of leadership during the 20th century provides a dynamic approach to the notion of leadership. These ideas have been grouped into six schools of thought: (a) trait theory, (b) behavior studies, (c) contingency theories, (d) power and influence theories, (e) cultural and symbolic theories, and (f) cognitive perspectives on leadership (Middlehurst, 1997). Many authors, aware of the flexibility of this concept, prefer to either brush broad general attributes to leadership; some prefer not to give any definitions, such as Soobrayan (1998), who justifies her reason for not giving a definition in claiming that definitions only acquire meaning within particular contexts. Leadership is complicated to define in theory as it is elusive to summarize in practice, and in both cases the influence of culture and values is strong (Middlehurst, 1997).

Fullan (1996) presented four general areas to generate theoretical framework in which to view leadership. His theoretical framework looks into the culture, process, purpose and performance, and people. Under purpose, the notion of probability of individuals, institutions, or society is unpacked in relation to leadership. Beare, Caldwell, and Millikan (1997) referred to leaders as entrepreneurs of values. Process and performance looks into the purpose of an organization and, consequently, the process and phase of performance that needs to be followed up; this in turn leads to achievement. Finally, regarding people, is not only the question of how will leadership be dispersed, but also how will it be undertaken, and by whom? Walker (2004) noted that effective leadership is essential to the success and effectiveness of any educational organization. However, when unpacking leadership in a critical context, leadership must be viewed "in relation to the wider social and political context within which it does its work" (Thrupp & Willmott, 2003. p 161; Walker, 2004).

Female and Leadership

Although there exists ample evidence on the nature of leadership and the resemblance of women's and men's leadership styles, nevertheless, leadership roles and managerial posts seem to be stereotypically masculine (Walker, 2004). Traditionally, leadership was associated with a male figure and masculine characteristics such as dominance and competitiveness. Perhaps this socially constructed stereotype is what causes such misunderstandings in leadership styles as either feminine or masculine (Walker, 2004). Walker (2004) also stated the divine and wholesome nature of leadership, therefore, has been polluted with cultural constructs, adding to its disfigured dimensions, such as gender, creating a more complicated and thorny field to explore.

According to Billing and Alvesson (2000), perceptions and gender stereotypes are often considered barriers for women to gain leadership positions. Women have faced many challenges in leadership positions, in terms of their gender, their identity being fastened to many stereotypes, being marginalized, and their experiences unnoticed in the formation of knowledge and power—these being the tools put in use to pave the way for this to happen (Walker, 2004).
Al-Hariri, in her 1983 article (as cited in Walker, 2004), wrote about the shortage of women in leadership and dominant positions in Saudi Arabia. She expressed her anticipation of the progression of females in higher education that would enable them to participate and acquire access to more diverse work opportunities. This anticipation is currently taking shape as our eyes are becoming accustomed to seeing amazing news headlines—headings such as Saudi Women Challenge Traditional Barriers in Male Dominated Society, First Saudi Women to Hold the Top Hospital Post as Chief Ophthalmologist in King Faisl Hospital, and Dr. Selwa Al-Hazzaa' Threatens Traditional Male Positions in the Work Force. Another headline that may seem striking to traditionalists was Sky's the Limit for Saudi Woman Pilot: First Saudi Woman Pilot (Walker, 2004).

Also, headlines of female advancements include For the First Time Three Saudi Women now Serving as Advisers to the Traditionally All Male Consultative Parliament and, in 2009, Nora bint Abdullah al-Fayez was Appointed the First Female Saudi Arabian Minister. Nora bint Abdullah al-Fayez is a U.S.-educated former teacher. She became Deputy Education Minister as part of a reshuffling by the Saudi King to rid his cabinet of ultraconservatives.

Teaching Leadership

The general mission of higher education historically has been to educate students to be future leaders. According to Chaar (2010), Saudi Arabia is facing a shortage of local leaders in the private sector. Due to the young population, the unevenness between growth and available talent in the private sector, and rising unemployment figures, the country must address the growing leadership shortage. The need for Saudi leadership in the private sector is alarming and will be a growing problem over the next 5 years as 2.5 million more Saudis enter the workforce (Chaar, 2010). Thus, it is necessary for universities within the Kingdom to teach students to be future leaders.
The number of people involved in leadership programs on college and university campuses around the world continues to grow (Prince, 2010). So, the debate about whether leaders are born or made seems increasingly to have been resolved in favor of the position that much of what we think of as leadership can be taught (Prince, 2010). However, a complete theory of how to develop leaders cannot be located. Such a theory would, as a minimum, identify critical leadership knowledge, skills, values, attitudes, and beliefs (Prince, 2010). It would have to tell us what can be learned and what may be inherent. The theory might identify stages of leadership development that could be associated with different capacities and viewpoints within the learning leader (Prince, 2010).

The first issue that must be confronted is what outcomes are to be attained. If one seeks only to bestow learners with knowledge about leadership, then teaching leadership is predominantly a matter of teaching in the same way one would teach other subjects in the humanities and social and behavioral sciences (Prince, 2010). Prince (2010) noted that one would need mainly to focus on defining a province of knowledge and then engage the students in thinking about the subject.
As educators before you go into a classroom to teach, you must know your audience, in other words conduct an audience analysis. Goals and objectives are needed to measure that students have learned the subject that has been taught. The students should have a clear idea of the lesson. They should be eager to participate and be very corporative. McKeachie and Svinicki (2006) stated that there are a variety of techniques that can help break the deadly routine of lectures day after day such as debates, fishbowl, and interviews. In addition, facilitating discussion and active learning can enliven the class with

debates either between faculty members or between student teams.

Also, it is important to create learning communities. A way to assist students to integrate the theories and practices of leadership is to integrate or create meaningful learning communities. Transforming educational spaces from restraining to engaging places takes intentional thought and design. Establishing a culture that encourages student voices, challenging dialogue, peer accountability, and spontaneity requires intentional action from the first class or workshop session (Owens, Komives, Lucas, & McMahon, 2007). According to Lyons, McIntosh, and Kysilka (2003), although establishing an agenda may keep your class flowing from activity to activity, what you plan to accomplish in those time segments must be clear in your mind and must facilitate the achievement of the overall goals and objectives of your course. In teaching leadership you should have a schedule of strategies that are as follow: (a) establish objectives, (b) plan learning experiences, (c) identify required materials, and (d) evaluate students' progress.

McKeachie and Svinicki (2006) stated that students who are motivated to learn choose tasks that enhance their learning, work hard at those tasks, and persist in the face of difficulty in order to attain goals. So it should be no surprise that motivation is important to consider if we want to enhance student learning. According to Owens et al. (2007), to enhance student learning it is also essential that leadership educators dedicate time and attention to designing reflection activities. Effective reflection activities are linked to particular learning objectives of the class or program, occur regularly throughout the course or the program, and allow for feedback and assessment. The integration of reflection activities into discussions and assessments increases student satisfaction and optimizes learning gains from the experience. Reflection provides students the opportunity to create information and enables the facilitator to evaluate student learning (Owens et al., 2007).

The more we can connect the classroom with other parts of the campus leadership environment, the more potent leadership education can be. And we can send students off campus to experience leadership in settings where students are entrusted with leadership responsibilities in internships, service learning, and part-time work settings (Prince, 2010).

Methodology

Design

The central focus of this research project was to evaluate the impact of a leadership course on improving leadership outcomes for female students studying at PMU in Saudi Arabia. In order to achieve this goal, a pre-test/post-test quantitative design was employed. The pre-post-test design variables being measured in the investigation are evaluated both before and after the intervention (Gravetter & Forzano, 2008). Although this type of research does permit the researcher to evaluate changes in variables it does not permit assignment of causality (Gravetter & Forzano). Thus, in the current research, it was possible to evaluate changes in subjects with regard to specific variables, it is not possible to argue that the leadership course was the definitive source for these changes.

Sample

The sample for this investigation was drawn from undergraduate female students enrolled in a leadership course at PMU taught by the researcher. Four classes of students enrolled in the same leadership course were asked to voluntarily participate in the study to evaluate conception and understanding of leadership practice before and after the completion of the course. In total 94 students voluntarily choose to participate in the pre- and post-tests. Demographic data for the students was not collected to ensure that confidentiality of the students' identity was maintained. The use of a convenience sample in this research was deemed appropriate to ensure that students were willing to participate in the study.

Instrument

The instrument for this investigation was developed by the researcher and contained 15 statements regarding different aspects of leadership practice. The instrument was developed based on pertinent variables identified in the literature as relevant to successful leadership practice. A pilot test of the survey was completed using 35 students that were not enrolled in the class. Data from the pilot test provided insight into the clarity of the statements. Statements that were noted as difficult to answer by the subjects were re-worded to increase statement clarity. The instrument utilized a four-point Likert scale to evaluate participant opinions: 1 = true, 2 = somewhat true, 3 = somewhat false and 4 = false. Lower scores on the instrument were associated with the subject's opinion of a high level of personal leadership competence.

Procedures

At the initiation of the course, all students were provided with information regarding an online survey to assess their opinions about their leadership skills and competence. The information was provided by the researcher via a flyer and through a verbal review of the experiment. Students were asked to visit surveymonkey.com and complete an online survey. The students were instructed that they would have one week to complete the survey and would again be asked to complete a survey at the end of the course. Following the completion of the course, students were again provided with a flyer about the survey and those that had participated in the pre-test were asked to again log on to surveymonkey.com to complete the post-test questionnaire. Students were given two weeks to complete the post-test questionnaire.

Data Analysis
Data analysis for this investigation included the use of descriptive statistics (mean, average, median, standard deviation, etc.) to provide a general review of the pre- and post-test scores for each individual item and for the survey as a whole. Additionally, *t*-tests were used to compare the mean scores for the entire instrument and for each individual item. Based on the *t*-test results it was possible to determine of a change in the leadership area had occurred in the pre- and post-test time periods. Although *t*-tests do not provide a definitive measure of causality, they do indicate there has been a statistically significant change in the data. Statistical significance was measured at the $p < 0.05$ level.

Results
Results for this investigation are presented in the tables below. The results include descriptive statistics for the pre- and post-test data (Tables 1 and 2) as well as t-test data comparing results from pre- and post-tests to evaluate statistical significance (Table 3)

Descriptive data for the pre-test results indicate that scores for the entire survey were 39.32 suggesting a lower degree of perceived leadership competence by students. Standard deviation for the total survey and individual statements were, on average relatively low. This suggests a significant amount of uniformity among the responses provided by the participants.

Descriptive data for the pre-test results indicate that scores for the entire survey were 21.23 suggesting a lower degree of perceived leadership competence by students. Standard deviation for the total survey and individual statements were, on average relatively low. Again this suggests a significant amount of uniformity among the responses provided by the participants.

Table 3, on the following page contains data for *t*-test calculated for each individual statement and for the entire survey comparing pre- and post-test responses as well as Cohen's *d* values. Overall, the *t*-test results (*p* values) are statistically significant for the entire survey and for individual statements. Four statements, 7, 8, 9 and 15 did not produce results that were statistically significant. Cohen's *d* value ranges used for assessing the data were as follows: $d = 0.2$, small; $d = 0.5$, medium; and $d = 0.8$, large. Most of the effect sizes calculated indicate a medium or above impact for the treatment effect (e.g., the leadership course). Although effect size for the entire survey was low ($d = 0.144$), values recorded for many of the questions were medium or high, indicating that the leadership course had indeed had some impact on leadership outcomes for participants.

Discussion

Evaluation of the Results
A review of the results provided in this investigation does indicate that there are statistically significant differences in attitudes among women taking the leadership course. Although it is not possible to solely assign these increases to the leadership course itself, there is support for the assertion that the leadership class may have influenced women's attitudes toward their leadership competence, resulting in a decrease in scores from the pre- to the post-test period. Although most of the items on the survey showed a statistically significant decline from the pre- to pos-test time period, there were four specific areas in which no statistically significant change was noted. This was with regard to statements 7, 8, 9 and 15. In an effort to understand why no differences were noted, it is helpful to consider these statements more specifically.

Statement 7 was as follows: "I see value in learning about leadership." A review of the data provided in Tables 1 and 2 indicates that a high number of respondents noted true or somewhat true to this statement before the initiation of the course. High scores on this item in the pre-test did not change to the post-test period. Similar outcomes can be noted with regard to statements 9 and 15. Statement 9 was as follows: "I want to make a difference in my community." Statement 15 was as follows: "I consider myself an ethical person." In the pre-test time period participants reported low rankings for both of these statements.

Although a lack of statistical relevance for statements 7, 9 and 15 can be explicated, the same cannot be said for statement 8. Statement 8 was as follows: "I am conscious of my impact on others." Although direct causality between the leadership course and perceived attitudes toward leadership competence cannot be stated, the results for statement 8 suggest that the leadership course may not have had an impact on outcomes in this particular area. Even though efforts were made to increase student awareness of their leadership capabilities, strengths and weaknesses there was relatively little change in the number of respondents reporting true or somewhat true in the pre- and post-test time period. Moving forward, it is pertinent to consider whether or not this issue can be addressed in leadership education and if so what specific implements are needed to improve outcomes in this area.

Implications
Literature regarding women in leadership indicates that in many instances, leadership is stereotyped as a masculine domain (Walker, 2004). Even though leadership practice is currently viewed as a masculine domain, the current research does suggest that it is possible to change female attitudes regarding their own levels of perceived leadership competence. Given this reality, the findings of the current investigation have important implications for educating women in leadership practice and creating the foundational resources to reduce primarily masculine stereotypes associated with leadership practice.

In terms of the implications for the development of Saudi Arabia, the results provide an important insight into the benefits of teaching leadership to women. Chaar (2010) has specifically noted that Saudi Arabia is facing a shortage of leaders in the private sector. Chaar asserts that this issue will become even more acute over the next five years as an additional 2.5 million individuals enter the workforce. Given that education of women could have benefits for increasing leadership competency, there is support for pursuing these courses to increase the number of leaders available for employment in the private sector.

Limitations

The principle limitation of this investigation is the use of a pre-post-test design. Although the data evaluated in this investigation does show statistically significant changes in female student attitudes toward leadership competency, this research design does not allow for the assignment of causality. As such, it is not possible to definitively argue that the leadership course is solely responsible for the changes noted in the data. However, low standard deviation in the responses in both the pre- and post-test periods do suggest that a common variable (e.g., the leadership course) may have had an impact on all of the students.

Another limitation of the study is the sample used. Although all students were encouraged to participate in the study, the 94 students that provided data represented small percent of the total student population. The small sample and its lack of random selection reduce the generalizability of the findings. Although the leadership course may have contributed to changes in attitudes for students, it is not clear whether or not similar results would be reported for another group of female students taking the same course.

Future Research

In order to further understanding of the role that education plays in advancing leadership competence for female students, additional research is necessary. Future research would include a control design in which students were randomly selected for participation in the leadership course. The control group would include students enrolled in the general curriculum. Pre- and post-test measures evaluated through this method would better demonstrate causality. Future research should also consider the use of larger sample populations to include a higher level of diversity in the women surveyed. Increased diversity in the sample population would facilitate generalizability of the findings to the larger population of female students currently seeking higher education in Saudi Arabia.

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Table 1

Pre-Test Results Descriptive Statistics

	Mean	**Standard Deviation**	**Median**	**Low/High**
Raw Score	**39.23**	**1.12**	**40.00**	**1/4**
Statement 1	1.34	0.498	1.0	1/3
Statement 2	2.22	0.922	2.00	1/4
Statement 3	1.97	0.921	2.00	1/4
Statement 4	1.52	0.729	1.00	1/4
Statement 5	1.93	1.03	2.00	1/4
Statement 6	1.89	0.933	2.00	1/4
Statement 7	1.29	0.541	1.00	1/3
Statement 8	1.67	0.653	1.50	1/4
Statement 9	1.10	0.441	1.00	1/4
Statement 10	1.89	0.977	2.00	1/4
Statement 11	1.95	0.852	2.00	1/4
Statement 12	2.21	0.966	2.00	1/4
Statement 13	1.90	1.01	2.00	1/4
Statement 14	1.87	0.544	2.00	1/4
Statement 15	1.36	0.631	1.00	1/3

Table 2

Post-Test Results Descriptive Statistics

	Mean	**Standard Deviation**	**Median**	**Low/High**
Raw Score	**21.23**	**1.22**	**21.00**	**1/4**
Statement 1	1.19	0.514	1.00	1/4
Statement 2	1.32	0.608	1.00	1/4
Statement 3	1.61	0.721	1.50	1/4
Statement 4	1.32	0.643	1.00	1/4
Statement 5	1.21	0.461	1.50	1/3
Statement 6	1.62	0.744	1.50	1/4
Statement 7	1.30	0.545	1.00	1/3
Statement 8	1.69	0.687	1.50	1/3
Statement 9	1.10	0.423	1.00	1/4
Statement 10	1.31	0.554	1.50	1/4
Statement 11	1.58	0.689	1.50	1/4
Statement 12	1.33	0.542	1.00	1/4
Statement 13	1.29	0.411	1.00	1/4
Statement 14	1.65	0.866	1.50	1/4
Statement 15	1.26	0.566	1.00	1/3

Table 3

T-tests for Survey Data

Statement	*t*	s.d.	*p* Value	Cohen's *d*
1	2.02	0.506	0.045	0.295
2	7.89	0.785	0.000	1.151
3	3.00	0.827	0.003	0.438
4	2.02	0.687	0.045	0.295
5	6.13	0.797	0.000	0.894
6	2.99	0.785	0.000	0.436
7	0.134	0.543	0.893*****	0.020
8	0.158	0.623	0.952*****	0.023
9	0.145	0.410	0.912*****	0.021
10	5.44	0.687	0.004	0.794
11	2.98	0.654	0.003	0.435
12	6.63	0.787	0.000	0.967
13	5.26	0.678	0.006	0.767
14	2.84	0.855	0.045	0.414
15	0.215	0.765	0.752*****	0.018
Full Survey	0.985	2.54	0.008	0.144

Appendix A

Questions for the Pre and Post Test

1. I am aware of my personal values
    - True =63 students
    - Somewhat true = 30 students
    - Somewhat false = 1 student
    - False = 0 student

2. I could name or describe multiple leadership theories
    - True =21 students
    - Somewhat true = 42 students
    - Somewhat false = 20 students
    - False = 11 students

3. I feel comfortable facilitating a group
    - True =32 students
    - Somewhat true = 42 students
    - Somewhat false = 11students
    - False = 7 students

4. I know the difference between ethics and values
    - True = 55 students
    - Somewhat true = 32 students
    - Somewhat false = 3 students
    - False = 2 students

5. I can describe my leadership style
    - True = 39 students
    - Somewhat true = 37 students
    - Somewhat false = 4 students
    - False = 14 students

6. I can articulate a connection between leadership and group process
    - True = 30 students
    - Somewhat true = 44 students
    - Somewhat false = 15 students
    - False = 5 students

7. I see value in learning about leadership
    - True = 71 students
    - Somewhat true = 19 students
    - Somewhat false = 4 students
    - False = 0 student

8. I am conscious of my impact on others
    - True = 51 students
    - Somewhat true = 37 students
    - Somewhat false = 5 students
    - False = 1 student

9. I want to make a difference in my community
    - True = 80 students
    - Somewhat true = 10 students
    - Somewhat false = 3 students
    - False = 1 student

10. I am aware of how groups function
    - True = 47 students
    - Somewhat true = 37 students
    - Somewhat false = 3 students
    - False = 6 students

11. I am comfortable speaking in front of groups
    - True = 33 students
    - Somewhat true = 39 students
    - Somewhat false = 12 students
    - False = 10 students

12. I have reflected on how my gender influences my leadership
    - True = 24 students
    - Somewhat true = 46 students
    - Somewhat false = 14 students
    - False = 10 students

13. I have been exposed to people with life experiences different than mine
    - True = 48 students
    - Somewhat true = 30 students
    - Somewhat false = 9 students
    - False = 7 students

14. I feel confident with my management skills
    - True = 30 students
    - Somewhat true = 49 students
    - Somewhat false = 8 students
    - False = 7 students

15. I consider myself an ethical person
    - True = 66 students
    - Somewhat true = 23 students
    - Somewhat false = 5 students
    - False = 0 student