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Sherrie Carinci
California State University

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Becoming Gender Relevant: A Pre/Post Examination of University Students' Attitudes and Perceptions of Gender Constructs in Education and Society

Sherrie Carinci, California State University, Sacramento, USA

Colleges and universities have many lofty goals and objectives. One such mission is to enlighten our country's future leaders on social, economic, and political complexities of our diverse society, while engaging our students to be innovative thinkers and agents of social change (Atwell, 1993; Carinci & Wong, 2009; Pierce, 2003). In order to help students gain an understanding of issues of race, class, and gender, university courses have been created to help with the dialogue on social justice and inclusion of all in our society. Though there is minimal research on the subject, it is this scholar's opinion that students who graduate from colleges and universities are unaware of the discriminating practices which exist in America's schools. If discussed at all, most college students receive brief explanations as to the gender issues facing students in school today. Such topics as teacher's interaction patterns with students, lack of females represented in school curriculum, and issues of harassment and bullying are missing from the dialogue and education preparing students to become future educators and leaders in our society (Sadker, 2003). As part of university education, students need to recognize that the discussion of gender, both female and male, needs to be paramount when educating our future leaders, teachers, and business community.

This research is a longitudinal study, which began in 2004 and ended in 2008, on the impact of a general education course which examines gender socialization on three levels; historic implications of gender stereotyping and current socialization trends, gender issues in the today's schools, and finally addressing how the two levels affects career choices. The exploratory research questions for this study examined pre and post attitudes and perspectives on gender issues in education, family influence and career choices after attending a 16 week university course. Participants were questioned on whether gender bias exists in today's classrooms, and if so, how important are teacher interactions patterns and curriculum choices in the inclusion of gender equity. Questions in this study also examined the role parents, teachers, and peers play in shaping gender roles and its impact on future life choices.

Theoretical Framework

Though there are numerous ideologies that relate to issues of equity; postmodernism, feminist theory, and reconstructionists theory are inclusive concepts which examine gender equity principles (Tong, 1998). Combining these ideologies with psychological theories of gender development frame the intent of this study. Social learning theory and cognitive development theory investigates how individuals learn behaviors that are gendered, racial, and cultural. Research by Bandura (1986) and Bates (1988) indicate that children learn to be masculine and feminine through communication and observation. Gender socialization takes place in family relationships, school settings, and within the larger constructs of society. In addition, the work of several educational scholars spanning several decades of academic research frame this study. Scholarly work and educational philosophies of Nel Noddings, Paolo Freire, Jo Sanders, David Sadker, and Sonia Neito are woven throughout the theme of this research.

Methodology

In order to determine if a university course on gender equity has an impact on students' perceptions, a pre and post survey was designed for this study. This survey was implemented to determine how influential gender is within parental relationships, classroom interactions, and career choice objectives. Seven hundred and twenty one (721) completed surveys were collected in the university course "Sex-role stereotyping in American Education" over nine semesters, fall 2004 through fall 2008. Implementation of the study occurred each semester on the first day of class and on the last day of class during a 16 week semester period. Most of the respondents in this study were female at 80%, with one person not reporting their gender. Male respondents rate at 19.9% (Table 1).

Table 1

Gender of Study Participants

Gender	Count	Percent
Female	577	80.0%
Male	143	19.9%
Missing data	1	00.1%

An eleven question, five point Likert-scale survey was designed to gathered data on gender perspectives prior to taking a course which examine gender equity issues in education and society. Samples of the questions include "Teachers need gender equity training," "Current classroom curriculum is equitable for both genders," and "There is a correlation between one's gender and their choice of career." The Likert-scale questions were designed to get a sense of the participant's gender perspectives prior to taking a university course which focuses on gender role stereotyping and equity issues. The same questions were asked in the post survey in order to determine a shift in participant's attitudes and perspectives. The data collected from this survey helped determine if a university course on gender roles and stereotyping does impact students' perception on gender equity in education and society.

Consistency between the sections of the course "Sex-role stereotyping in American Education" was assured by faculty who taught the course. Faculty agreed to use the same syllabus, assignments, course reader, textbook, and films. Though consistency of how the material was presented could not be measured, the design and implementation of the material was monitored for uniformity between sections.

Data Analysis

The findings of the data concluded that the discussion of gender and its impact on the individual does make a difference in students' perceptions. Using Levene's Test for Equality of Variances determine a statistically significant change in respondents attitudes about gender after taking the 16 week course which focus on gender equity issues in our society. When examining all 12 questions in the data set in the aggregate, all pre-post survey results were statistically significant (Table 2, Table 3).

Table 2

Descriptive Statistics by Survey Question, Gender, and Test Condition

Survey Question	Gender	Pre-Test Mean (SD)	Post-Test Mean (SD)
Q1 Rate knowledge on gender equity	Female	2.89 (0.685)	4.16 (0.592)
Awareness	Male	2.78 (0.779)	4.20 (0.686)
Q2 Gender bias exists in classrooms	Female	3.75 (0.791)	4.48 (0.651)
Today	Male	3.57 (0.852)	4.47 (0.541)
Q3 Teachers need gender equity Training	Female	3.82 (0.842)	4.60 (0.654)
	Male	3.73 (0.930)	4.52 (0.710)
Q4 Current classroom curriculum is	Female	3.25 (0.922)	2.50 (1.020)
Equitable for both genders	Male	3.57 (0.852)	2.81 (1.027)
Q5 There is correlation between one's	Female	3.71 (0.887)	4.06 (0.802)
Gender and their choice of careers	Male	3.73 (0.937)	4.00 (0.927)
Q6 Children's gender roles are Influenced by parents	Female	4.48 (0.624)	4.76 (0.491)
	Male	4.49 (0.604)	4.77 (0.423)
Q7 Children's gender roles are Influenced by peers	Female	4.58 (0.691)	4.58 (0.691)
	Male	4.53 (0.730)	4.53 (0.730)
Q8 Children's gender roles are Influenced by teachers	Female	4.57 (0.645)	4.57 (0.645)
	Male	4.41 (0.703)	4.41 (0.705)
Q9 Parents raise children differently	Female	4.29 (0.725)	4.50 (0.593)
according to their gender	Male	4.40 (0.770)	4.54 (0.541)
Q10 Teachers treat males and females	Female	2.72 (2.20)	1.98 (0.807)
same in the classroom	Male	2.84 (1.01)	2.08 (0.834)
Q11 Exposure in early education of positive gender role models impacts	Female	4.21 (0.662)	4.47 (0.602)
future life choices	Male	4.06 (0.644)	4.35 (0.715)
Q12 Title IX encompasses more than	Female	3.25 (0.571)	4.29 (0.789)
Sports equity between genders	Male	3.25 (0.637)	4.39 (0.742)

In most cases, the change in the pre and post responses was from lower average ratings to higher average ratings. Because a paired samples t-test was used, the results may not indicate that there is a large difference when examining the raw data. This difference in rating is because there is a correlation between each participant's pre and post score. Once that correlation is "controlled for" or removed, there appears to be fairly large and consistent changes over time between participants' pre and post survey results. Question 4 "Current classroom curriculum is equitable for both genders" and Question 10 "Teachers treat males and females the same in the

classroom” showed a decrease in the pre and post results. These two questions stand out as different due to how the questions were asked but both show statistically significant change in participants’ responses (Table 3).

Table 3
Paired Samples t-Tests for Entire Sample

Item Pair	d.f.	t-value
Q1 Pre/Post	587	-38.072*
Q2 Pre/Post	719	-22.104*
Q3 Pre/Post	719	-21.965*
Q4 Pre/Post	716	17.050*†
Q5 Pre/Post	714	-8.726*
Q6 Pre/Post	719	-10.193*
Q7 Pre/Post	717	-2.045*
Q8 Pre/Post	714	-16.806*
Q9 Pre/Post	717	-6.163*
Q10 Pre/Post	709	9.308*†
Q11Pre/Post	712	-8.767*
Q12 Pre/Post	700	-30.087*

* *Indicates result was statistically significant.*

† *Positive numbers indicates a decrease in ratings between pre-test and post-test.*

Examining Female and Male Responses

When examining the question responses by gender of the respondents, using the entire data set in the aggregate, nearly all pre-post results were statistically significant. Question 7 and Question 9 were the only questions which did not show a statistically significant change in responses. When examining question 7 “Children’s gender roles are influenced by peers” it appears that both male and female respondents did not indicate a statistically significant change in attitude or perspective on this topic. Interestingly, when examining the focus on peers and gender influence in the course, this topic is briefly examined during the course and no media or visual aids are used when this topic is introduced. When examining the respondents’ pre-survey data, it appears that the students had strong opinions on the relevance of gender and peer influence. The low movement in responses tends to indicate that the participants entered the course with strong attitudes and perspectives on the topic that peers do strongly influence gender roles.

The only question where males responses, as a group, indicated low movement and no statistical significance in their pre and post survey responses were Question 9 “Parents raise children differently according to their gender.” The course addresses the issues of parents and gender roles through course readings, media presentations and course lectures. A review of the male participants’ individual responses to this question indicates that the majority of male participants agreed or strongly agreed on their pre-surveys that parents influence gender roles. This pre-survey response helps explain the low movement as a whole for male participants (Table 4).

Table 4
Paired Samples t-Tests by Gender

Item Pair	Gender	d.f.	t-value
Q1 Pre/Post	Female	468	-33.598*
	Male	117	-18.046*
Q2 Pre/Post	Female	575	-18.803*
	Male	142	-11.903*
Q3 Pre/Post	Female	576	-19.983*
	Male	141	-9.101*
Q4 Pre/Post	Female	572	15.057*†
	Male	142	7.882*†
Q5 Pre/Post	Female	571	-8.570*
	Male	141	-2.614*
Q6 Pre/Post	Female	575	-8.971*
	Male	142	-4.877*
Q7 Pre/Post	Female	573	-1.910NS
	Male	142	-0.946NS
Q8 Pre/Post	Female	571	-15.087*
	Male	141	-7.309*
Q9 Pre/Post	Female	573	-5.879*
	Male	142	-1.962NS
Q10 Pre/Post	Female	566	7.599*†
	Male	141	7.852*†
Q11 Pre/Post	Female	569	-7.950*
	Male	141	-3.689*
Q12 Pre/Post	Female	561	-26.362*
	Male	137	-14.453*

* Indicates result was statistically significant.

NS indicates results not statistically significant.

† Positive numbers indicates a decrease in ratings between pre-test and post-test.

Conclusion

This study examined whether an undergraduate university course focusing on gender equity issues does impact students' perceptions regarding gender constructs in school, parental influence and career choices. The data results indicate that the course material presented in "Sex-role stereotyping in American Education," which was used as a model for this study, does have a significant impact on students' perceptions regarding gender assumptions. Research collected from this study will add to the body of knowledge on the importance and impact of university courses which concentrates on equity and inclusion andragogy. The intent, focus, and results of this study are crucial in solidifying the relevance of courses which fosters an understanding of social justice and equity practices within our university classrooms and on the greater good of society.

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