

Coeducation versus Single Sex Education: Impact on Self Esteem and Academic Achievements among Nursing' Students

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Abstract: Background: Single sex education is to educate males and females in separate school setting, whereas coeducation is the integration of both in a one educational environment. Linguistically, the term "Co-ed" is a shortened form of "co-educational", and is also sometimes used as an informal and increasingly old reference to a female college student, particularly in the United States. Despite the fact that modern education is primarily coeducational, many single sex educational institutions still exist and are regaining popularity especially in nursing field as it was encouraged by the Hashemite Jordanian king Dom. Aim: The aim is to investigate the impact of educational type on the students' self-esteem and academic achievements. Methods: A quantitative-non-experimental correlational research design was utilized to accomplish the purpose of this current research. The study was conducted at Queen Alia and Al Arabia Community Colleges affiliated to Al- Balqa Applied University in Jordan, where a convenient sample of 100 nursing students participated in the study. Students' self-esteem was assessed by using the self-esteem instrument designed and developed by (Jebri) in 1984. Validity of the instrument was obtained and reliability has been demonstrated (0.84). Results: The analysis of obtained data revealed that there is a significant relationship between self esteem and academic achievement for the favor of (85-100%) achievement category). In other words, students who display high self-esteem have high academic achievement; moreover, self-esteem is notably high among students who are satisfied in learning nursing. On the other hand, there were no statistical significant differences found related to self esteem and gender as well as related to self esteem and type of education among study sample. Conversely, self-esteem is higher among female students in co-education than others in single sex education. Conclusion: We would acknowledge that the academic progress of boys is probably improved by coeducation, while that of girls is not affected. When other factors, such as self esteem, satisfaction with the performance and learning nursing are taken into account, the research clearly supports coeducation. Finally, the research has implications to the importance of personality characteristics, especially self-esteem, communication style and self-concept due to their positive impact on academic progress, satisfaction of performance and quality of provided nursing interventions.

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1. Introduction

Single-sex education, also known as single-gender education, is the practice of conducting education where male and female students attend separate classes or in separate buildings or schools. The practice was predominant before the mid-twentieth century, particularly in secondary education and higher education. Single-sex education in many cultures is advocated on the basis of tradition as well as religion, and is practiced in many parts of the world.

While most schools in the Middle East remain single-sex, coeducation has become more accepted. In Egypt, Jordan, United Emirates, and Iran, for instance, the prestigious Tehran University is open to both sexes. From 2002 to 2006, women accounted for sixty percent of entrants to the university (Middle

East Online. 2007). Other countries, such as Saudi Arabia where strict adherence to the rules of Islam that forbids the intermingling of males and females, schools are single-sex only till 2009 as the first co-educational university was opened in 2009 named the King Abdullah University of Science and Technology (KAUST), which has attracted more than 70 professors and 800 students from abroad. Also, women became equal to men in the eyes of the government, but educating females in nursing is still unacceptable to many rural citizens.

Many supporters of single-sex education hold the view that it can help students learn more effectively. The practitioners of single-sex school state that boys and girls learn differently because of structural differences between male and female brains. Studies on male and female brains indicate

that males and females process information using different sections of their brains. This is evidenced in the ways males and females approach problem solving. For instance, when men are asked to give directions, they access the left hippocampus, and often use abstract concepts such as north and south. On the other hand, women access the cerebral cortex, and typically refer to landmarks that can be seen or heard to navigate. Advocates of single-sex education argue that these differences mean that the best method of instruction differs for males and females; a technique that engages girls in the subject matter may bore boys, and vice versa (**National Association for Single Sex Public Education, 2006. Retrieved 2007**).

Critics of single-sex education argue that without the presence of the opposite sex, students are denied a learning environment representative of real life. This deprives them of the opportunity to develop skills for interaction with peers of all genders in their work environment and fosters ignorance and prejudice towards the other gender. However, it should be made clear that coeducation can also foster better mental and emotional situations. As mentioned in a study by **Mael (1998)**, coeducation classrooms and schools reflect real life and prepare youths for gender interactions and society more so than a single-sex school would; it could also reduce sex stereotypes.

In another study conducted by **Salomone (2006)**, she stated that "There is some indication that single-sex classes may develop greater self-confidence and broader interests especially among adolescent girls who report that they feel more comfortable, interact more with teachers and develop more favorable attitudes towards these subjects (math and science)." Salomone also states that single-sex schooling promotes boys' interest in humanities courses such as studying nursing and that it helps them to be more at ease because they do not feel societal pressures to be male.

Eventually, it seems clear that single sex advocates have their strong demonstrations and that it does make sense that separating boys and girls would create an environment of non-stereotyping and foster the learning cycle.

Self-esteem is the product of two internal assessments or judgments, the global judgment and one's self-worth. The key to self-esteem is that the amount of discrepancy between what a person desires and what that person believes he/she has achieved and the overall sense of support that person feels from people around him/her (**Rosenberg, 1965**).

Having one's academic achievement meet one's academic expectations and desires is a major key to

most college students' self-esteem. Having a high self-esteem has many positive effects and benefits, especially among college students. Students who feel positive about themselves have fewer sleepless nights, succumb less easily to pressures of conformity by peers, are less likely to use drugs and alcohol, are more persistent at difficult tasks, are happier and more sociable, and most pertinent to this study is that they tend to perform better academically. On the other hand, college students with a low self-esteem tend to be unhappy, less sociable, more likely to use drugs and alcohol, and are more vulnerable to depression, which are all correlated with lower academic achievement (**Wiggins, 1994**). Academic achievement is influenced by perceived competence, locus of control, autonomy, and motivation (**Helat, 2007**).

Every profession calls for a special level of knowledge, skills and personal characteristics. If the correspondence between the applicants' individual characteristics and their intended profession is not adequately taken into account, their job compatibility will be hampered (**Holland, 1995**). Accordingly, nursing is a technical, skilled job through which one helps society. It is more than simply nurturing, caring work and it has remained an almost exclusive female occupation although the number of male nurses has more than doubled since the late 1970's. With over 2.3 million positions, registered nurses are the largest group of healthcare providers in the United States (**BLS, 2004**). However, men still represent less than six percent of the registered nursing workforce. Numerous explanations have been offered for why men and women end up in segregated occupations including employers' preferences, discrimination in hiring and promotion, persistence of norms regarding the appropriate gender for a particular job, relative demand and supply of workers, economic pressures, perceived customer preferences, workers' preferences and actions, women's family obligations, and gender socialization.

Recently **Mullen and Harrison (2008)** conducted a study entitled "Male and female nursing applicants' attitudes and expectations towards their future careers in nursing" and the results of their study have many implications to recruit nursing education programs for men and women within nursing and health services organizations as a whole.

Aim: The aim of the current study is to investigate the impact of educational type on students' self-esteem and academic achievements. Many objectives were set to achieve this aim; first, Comparing academic performance trends between the single-sex and coeducational nursing school; Second, comparing the nursing students' self-esteem in the

two different environment; Finally, studying the key studies variables that influence the academic performance and self-esteem in the two educational environments.

2. Material and Methods

Sample and Setting

A quantitative non-experimental correlational research design was utilized to accomplish the purpose of the current research. A convenient sample of 100 nursing students at Queen Alia and Al Arabia colleges, affiliated to Al Balqa Applied University participated in the study.

Study Tools: Student's self esteem was assessed by using the self-esteem instrument designed and developed by **Jebiril (1984)**. Validity of the instrument was obtained and reliability of (0.84) has been demonstrated. The instrument includes 142 statements, including both positive and negative statements, on a 5 point likert scale: strongly agree, agree, moderately agree, weakly agree, and do not agree. The instrument was concerned with the following domains, cognitive, emotional, ethical, physical, social, and the overall individual trust to his/herself. Moreover, the study instrument includes demographic information asking about: age, gender, academic achievement, and academic year, type of education, self criticism, getting depression easily, specialty satisfaction, performance satisfaction, and psychological consultation.

Data Collection Procedure: Once an official permission was obtained from the Colleges to proceed in the study, researchers started distributing the questionnaire to the Voluntary nursing students who comply with the criteria of the study as well The purpose and nature of the study were explained and confidentiality was ensured to the participants. The data of the study was collected during the period from January to April, 2008.

Data managements: All data were computed using the statistical package for the social sciences/personal computer (SPSS/PC). Preliminary data analysis was conducted to describe the study sample via the mean, and standard deviation. T-test was applied to compare the impact of types of education on the self esteem and academic performance of the target group. In addition, F-test was used to examine the effect of selected variables on the self esteem and academic performance.

3. Results:

The results of this study will be presented in the following order:

I- Data pertaining to demographic and personal characteristics of studied sample.

Table (1) shows the sociodemographic characteristics of the study sample. The entire sample was almost from the same age group that ranged between (18-22) years. Regarding the academic achievement, most of the study sample was very good; their achievement ranged between (75-84%). The study sample was equally from both types of education: the single and co-education. In addition, it includes (43) first year and (57) second year nursing students studying Associate degree in Nursing. The majority of the sample was sometimes criticizing themselves and easily got depressed. As regard to gender, (75) were females and (25) were males. Regarding specialty satisfaction, the majority of students were classified as agreeing and strongly agreeing. Most of them were satisfied with their performance in learning nursing, and the majority of them have no kind of psychological consultation.

As shown in table 2 that equal numbers (96.0%) of females in single sex and males in coeducation have middle high self-esteem compared with only 92.0% of the females students in coeducation having the same level of self esteem. It seems that all the study sample have middle high self esteem compared to very little (5.0%) number having middle low self-esteem while none of them had either high or low self esteem.

Table (3) reflects the significant relationship between self-esteem and academic achievements of the study sample. F test was used to indicate this relationship (85-100%). This means that the students who display high self-esteem have high academic achievement.

II. Data pertaining to effect of sociodemographic and personal characteristic of the study sample on self-esteem and academic progress.

As regard the relationship between student's satisfaction level with nursing learning and self esteem. Data in Table (4) indicates that self esteem is significantly $F \geq 0.05$ high among students who are satisfied in learning nursing. It also points out that self-esteem is significantly increased among students who are getting depressed easily

Regarding the relationship between student's satisfaction with their performance and their self-esteem, despite that the descriptive statistics showed that the majority ($M 3.50 \pm 0.2052$) of students feel good and very good satisfaction in their performance, F test indicates that there is no significant relationship between student's satisfaction and self-esteem. Also, the table emphasizes that there is no notable correlation between self esteem and student's psychological consultation, may be because the majority number ($M 3.45 \pm 0.20$) of the study sample didn't show any psychological consultations.

Finally concerning the relationship between self esteem and self criticism among study sample, the descriptive analysis reveals that self esteem is high in students who criticize themselves rarely, while ($F=0.854$) test indicates that the statistical significant differences did not exist in relation to self esteem and self criticism.

III. Data pertaining to the effect of types of education and gender on the self-esteem and academic performance of the study sample.

Table 5: Shows that there is no significant statistical relationship between self-esteem, type of education and gender among the study sample. Even though self esteem is high among mixed learning

students (co-education) than female only students, but it is not statistically remarkable.

Table 6 shows that there is no significant difference of the academic performance among females in single sex education and coeducation as the significant level were 0.084.

Table (7) points out that females in single sex classes shows higher self-esteem ($M=3.28\pm SD 0.201$), while their peers in coeducational nursing classes scores higher in academic achievements ($M=2.84\pm SD 0.94$). However, the difference is not statistically significant ($F=0.302$ and 1.15 , respectively) and significance level is >0.05 .

Table (1) Sociodemographic and Personal Characteristics of the Study Sample

Variables	Category	Frequency	Percentage %
Age	18-22	100	100
Academic achievements	60-64%	17	17
	65-74%	22	22
	75-84%	46	46
	85-100%	15	15
	Total	100	100
Academic year	First year	43	43
	Second year	57	57
	Total	100	100
Type of education	Single education	50	50
	Co-education	50	50
	Total	100	100
Self-criticism	Never	6	6
	Rarely	18	18
	Sometimes	47	47
	Much	27	27
	Very much	2	2
	Total	100	100
Easily become depressed	Never	11	11
	Sometimes	58	58
	Completely	27	27
	No responses	4	4
	Total	100	100
Gender	Male	25	25
	Female	75	75
	Total	100	100
Students' learning satisfactions	Strongly disagree	6	6
	Disagree	7	7
	Neutral	18	18
	Agree	34	34
	Strongly agree	35	35
	Total	100	100
student's satisfaction	Very little	9	9
	Little	21	21
	Good	33	33
	Very good	28	28
	Excellent	9	9
	Total	100	100
Psychological consultation	No	83	83
	Yes	8	8
	No response	9	9
	Total	100	100

Table (2) Distribution of Study Sample according to Categories of Self Esteem levels

Type of education	Self esteem		High self esteem		Middle high self esteem		Middle low self esteem		Low self esteem		Total 100
	No.	%	No.	%	No.	%	No.	%	No.	%	
Single sex (female only)	0	0%	48	96.0%	2	4.0%	0	0%	50		
Co-education: Male	0	0%	24	96.0%	1	4.0%	0	0%	25		
Female	0	0%	23	92.0%	2	8.0%	0	0%	25		

Table (3). The relationship between self-esteem and the academic achievements of the study sample: Means, Standard Deviations and (F) Test.

Variables	Academic achievement categories	Numbers	Means	±SD	F test	Sig. Level
Self esteem	60-64%	17	3.38	.226	23.29	.000**
	65-74%	22	3.37	.301		
	75-84%	46	3.80	.249		
	85-100%	15	3.85	.224		
	Total	100				

Table (4) Relationship between performance and self-esteem of the study sample according to different variables: Means, Standard Deviations and F test.

Variables	Levels	N	Means	±SD	F	Sig. Level
Student's satisfaction	Very little	9	3.31	0.1033	2.36	0.58
	Little	21	3.40	0.1420		
	Good	33	3.50	0.2052		
	Very good	28	3.50	0.2457		
	Excellent	9	3.45	.1716		
	Total	100	3.46	.2028		
Students' learning satisfactions	Strongly disagree	6	3.33	.110	3.08	.020
	Disagree	7	3.29	.139		
	Neutral	18	3.44	.196		
	Agree	34	3.53	.207		
	Strongly agree	35	3.45	.199		
	Total	100	3.46	.202		
Psychological consultation	Not having	83	3.45	.2009	.840	.475
	Having	8	3.44	.294		
	Treating now	1	3.33	-		
	No response	8	3.56	8.363		
	Total	100	3.46	.2028		
Easily become depressed	Never	11	3.33	.123	6.72	.000*
	Sometimes	58	3.42	.168		
	Completely	27	3.58	.244		
	No response	4	3.57	.112		
	Total	100	3.46	.202		
Self-criticisms	Never	6	3.521	.138	.854	.495
	Rarely	18	3.528	.239		
	Sometimes	47	3.45	.190		
	Much	27	3.43	.212		
	Very much	2	3.38	.151		
	Total	100	3.46	.202		

Table (5) The Relationship Between Self-Esteem, Gender and Type of Education among Study Sample: Means, Standard Deviations (SD) and T test.

Variables	Categories	Numbers	Means	±SD	T test	Sig. level
Type of education	Single-female only	50	3.44	.199	.928	.356
	Mixed	50	3.48	.205		
	Total	100	3.46	.202		
Gender	Male	25	3.50	.181	1.30	.196
	Female	75	3.44	.208		
	Total	100	3.46	.204		

Table (6) Independent Sample T Test: Difference of Academic Achievements According to Type of Education

Variable	Categories	N	Mean	±SD	t-value	Sig. level
Type of education	Single- female only	50	71.86	6.33	1.74	0.084
	Mixed	50	69.46	7.37		
	Total	100	3.46	.202		

Table (7) Difference between Females in Single Sex and Their Peers in Mixed Education : Self Esteem and Academic Achievements.

Variables	Type of education	N	M	±SD	F-value	Sig. level
Self esteem	Single sex female	50	3.28	.2007	.302	.58
	Mixed- female	25	3.25	.2343		
	Total	75	3.27	.211		
Academic achievements	Single sex female	50	2.62	.78	1.15	.287
	Mixed female	25	2.84	.94		
	Total	75	2.69	.84		

4. Discussion

The discussion of the results of the current study will be highlighted in the following order:

1. Academic Performance

Regarding academic performance of the two colleges, the present study revealed that the favor was given to female single sex education with very little difference and no statistically significant ones among the two nursing colleges. This result is congruent with a study done by **Ryan (2004)** who states that "with regard to academic achievement there was very little difference between the two sexes", and he suggested that these findings concurred with those of **Marsh et al. (1988)** and **Smith (1994)**. Therefore, his study asserts that transition from SS (single sex) to Co-ed (coeducation) schooling benefited both boys and girls with no related academic disadvantages for students attending Coed schools for either sex group.

On the other hand, the study revealed that females in coeducation have got the highest mean with no significant differences between them and their peers in single sex education. This result looks very surprising and contradicts the results of many studies conducted in North America while assessing the academic performance of females in a single-sex environment versus coeducational environment and the favor in academic achievement was for females in single sex environment. Furthermore, **Trickett et al. (1982)**, conducted a study comparing single-sex and co-ed boarding schools in the United States, and concluded that single-sex schools provide an environment that greatly emphasizes academics more than coeducational ones do. Another study by **Lee and Bryk (1986)** concluded that "single-sex schools appear to deliver specific advantages to their students. The results are particularly strong for girls' schools".

As seen, a substantial body of evidence exists to affirm the academic benefits of single-sex education in females. Of course many factors contribute to the academic success to greater or lesser degrees in single-sex schools. **Arum and Beattie (2000)** also discussed academic achievement and explored reasons behind differences between boys' and girls' academic achievement. They pointed out that

differences in the academic achievement of males and females involve issues of both performance and motivation. They further added that differences in performance are mediated by age and by type of cognitive activity; girls generally do better in school until puberty. Other factors may affect like socioeconomic factors, teaching style and parenting approaches and those not assessed in this study and we recommend to be studied in future.

I. Self-Esteem & Academic achievement

In order to discuss self-esteem and how it relates to academic performance, it is important to identify what self-esteem is, and how it is measured. **Blascovich & Tomaka (1991)** expand on Rosenberg's definition as an individual's sense of his or her value of worth, or the extent to which a person "prizes, values, approves, or likes him or herself". This study discloses that there is a highly notable relationship between self esteem and academic performance as students with higher academic (85% – 100%) achievement display higher self-esteem, the matter that is congruent with the results of **Helat (2007)** in his study, "The effect of coeducation on self esteem of Jordan university and princess Alia university college students", he found that students' higher self-esteem was attributed to their high accumulative average (excellent and very good) also, the same results were obtained by **Wiggins and Schatz (1994)**, **Scott & Murray (1996)** and **Abu-Saed (1999)** who noted a significant relationship between self esteem, social skills and academic performances.

Also the study revealed that there is no statistical significant difference between female's self esteem and academic achievement in SS and of those in CE. Although, the highest mean in self-esteem was in favor of female in SS and higher mean of academic achievement was for females in CE. This result is congruent with the study done by **Helat (2007)** and contradicting a study by **Marlene Hamilton** in Jamaica which indicates that, girls from single-sex schools did the best academically, followed by boys from single-sex schools, boys from

coeducational schools, and, lastly, girls from coeducational schools.

The interpretation of the results might have stemmed from an increasingly common (but largely unsubstantiated) belief among educators that performance among adolescents is declining as a result of an adolescent subculture that doesn't value academics. Also, the higher self esteem among females in SS could be interpreted as in single-sex classrooms the fear of feeling embarrassed by a foolish question or remark is not as high as it would be in co-ed schools, particularly because "to varying degrees, male approval determines their young women's self-esteem" (Oreinstein, 1994). When girls feel confident to answer questions and actively participate in class, their self-confidence begins to flourish. A major cause for timidity in CE classrooms is an inferiority complex throughout removing a factor that causes one to shy away from a subject (males), they are then able to express themselves to the best of their ability, resulting in higher self-esteem. The drop in self-esteem among female in CE has many factors associated, one being how "students sit in classes that, day in and day out, deliver the message that women's lives count for less than men's" Single-sex schools, in contrast, have a teaching approach that emphasizes the importance of female education especially in nursing education, resulting in a keen interest in female achievement. Indeed, the females' students who took part in the study were in the same developmental age having the same ideas of marriage, career competencies, and new family constitution the matter that can divert their attention from forming an identity and successful academic progress

II. Relationship between sociodemographic characteristics of the target group, their self esteem and academic performance.

Regarding the sociodemographic characteristics of the study sample, the research unveils the fact that there is no notable relationship between self-esteem and student's satisfaction with their performance, although the majority (M 3.50±SD 0.2052) of students had good and very good levels of satisfaction in their performance. This result may be concluded that the few number of the study sample might had an effect on the accuracy of this result; as we consider this element as a factor of the study limitations and a larger sample is further recommended. Also, gender has no significant relationship with self esteem and academic achievements of the study sample, this results is congruent with Brutsaert and Bracke (1994) who states that "While girls' and boys' self-esteem

seemed unaffected by the gender organization of the school, boys were negatively affected by a preponderance of female teachers on staff, which lowered boys' overall sense of well-being. Researchers (Riordan, 1985) & (Lee & Bryk, 1986); consider that healthy self-esteem develops in girls in a single-sex environment when removed from a competitive heterosexist's environment existing in co-ed schools. In our point of view, as the majority of sample (75%) were females compared with 25% males only, this may be the main cause for this insignificant relationship.

On the other hand, the study revealed that self esteem is significantly ($F \geq 0.05$) high among students who are satisfied in learning nursing, getting easily depressed, and who criticize themselves rarely. Research aside, common sense dictates that our thoughts influence our feelings and behavior. Our behavior, consequently, influences our performance. Common sense also dictates that a student who has self-doubt and lacks self-acceptance is unlikely to attain academic excellence. How can a student establish challenging goals if he or she lacks a sense of self-competence or self-efficacy? How can a student concentrate fully on studies if he or she lacks self-approval? Indeed, research does show that underachievers are generally less confident and less ambitious, less self-accepting, and lack a sense of personal worth.

Accordingly, Horn and Holzemer (1991) reported that, nursing profession and its requirements call for persons with social, artistic and investigative personality and with characteristics such as high self esteem, assertiveness, patience, tolerance, friendliness, love and sense of cooperation and responsibility. Therefore, nursing students with high self-esteem perform better after an initial failure than students with low self-esteem and are more likely to persevere in the face of obstacles. Indeed, self-esteem is a key variable in determining resilience focused and sustained effort promotes attainment of peak performance which consequently reinforces feelings of high self-esteem.

Conclusion and recommendations;

Ultimately, what we can conclude from the present results displayed in the study between our hands we would acknowledge that the academic progress of boys is probably improved by coeducation, while that of girls is not affected. When other factors, such as self-esteem, satisfaction with the performance and learning nursing are taken into account, the research clearly supports coeducation as well as single sex education especially in nursing field. Finally, the research has implications to pay

attention to the importance of personality development characteristics, especially self-esteem and self-concept due to its positive impact on academic progress, and the satisfaction of performance and quality of provided nursing intervention.

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