

Effect of School Environment on Student Achievement and Self-Esteem: A Case Study in Kenya

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Abstract

This paper explores the gender differences in academic achievements and self-esteem at the secondary level schools in Kenya. It assesses the impact of single-sex and mixed (co-educational) schools on secondary school students' academic achievement. The results indicated that girls attending all-female school made better academic progress but not social skills than those who attend a mixed secondary school. The relative academic achievements of girls in single-sex and co-education schools are explored in details, with a careful comparison of students from two different types of schools. Although further studies are needed to incorporate this result into official policy, there are strong indication that single-sex classroom environment may be useful towards improving academic performance of girls in secondary education.

Introduction

Education is regarded by many as an instrument for gender equity and success in life. In schools, students acquire not only cognitive knowledge but also learn how to value themselves and admire their accomplishment in life. Families, communities, ethnic and cultural groups vary in criteria on which self-esteem is based. Some communities evaluate boys and girls differently, thus affecting the development of self-esteem among children. This research focuses on a community where self-esteem is based on good academic performance, good socialization skills, good speaking skills, and higher scholarly goals. The research examined two private secondary schools in an urban area in Kenya. To improve academic performance of girls researchers have provided various recommendations including use of single-sex classrooms, gender-sensitive instructional methods and learning materials, female teacher role models and co-operative mode of teaching (Githua, 2002). While in most parts of Kenya education systems are co-educational, in the recent past, some co-educational schools have separated boys from girls to teach them in separate classrooms.

However, the implications of this separation on student's performance have not been explored and thus remain unclear. The author of this article argues that it is critical to understand the circumstances and conditions under which it may be useful to separate boys and girls. This study examines the effect of streaming by gender on students' academic performance. Comparisons of academic achievement levels in a single-sex school will be made to co-educational school. Bandura's theory of social learning (1990) is used as the conceptual framework. The theory provides several influences on education and learning including social, psychological, and cultural factors. According to Bandura's theory, learning takes place through observation and modelling of the behaviours of others (Boatman, 1998; Gall, 2001). The theory stresses the need for teachers to model the behaviours that they are looking to extract from students. Education is always carried out in a social context; so Bandura's theory fits nicely when examining education in a single-sex environment.

Purpose of the Study

Little research on education in developing countries has focused on gender issues and self-esteem, despite the fact that, more girls than boys consistently drop out of school earlier, and obtain lower test scores. There is concern that girls continue to perform poorly compared to the boys. This problem seems to be most prevalent in co-educational schools with argument that such classroom environments favour boys at the expense of girls. Schooling experience could play a potential role that may help or hinder achieving academic goals of individuals. In recent times, there have been suggestions of separating boys and girls in instructional environments, on the grounds that girls are inhibited from learning harder subjects like mathematics in presence of boys (Githua, 2002). The literature (Bastick, 2000) shows that there are a number of benefits to single-sex schools. Some researchers (Roberts, 1998; Robinson and Smithers, 2006; Younger, etl., 2006) would argue the contrary, that single-sex schooling and classes are detrimental to the development of adolescents. This research examines the school environment in Kenya, and its impact on gender differences in academic success, and how it affects the development of self-esteem among students. The study attempts to analyze the effect of single-sex and co-education classrooms on student academic achievements, with a focus on girls.

This case study is justified based on what has been given in the literature concerning the different learning styles between girls and boys and the likely effect on academic achievement. Specific questions that are addressed in this study included:

1. What are the differences in academic performance among students in single-sex and co-education schools?
2. Are there benefits for girls to attend single-sex schools than the co-educational schools?

Literature Review

Single-sex education has a long history as a common practice in many countries around the world. In traditional African systems, informal education tended to separate girls from boys as the knowledge, skills and values given were different. For most cases the trend continued with the formalized education systems. The co-opting of girls into the boys schools was adopted overtime due to the civil pressure and advocacy for the recognition of equal rights of the girls' education (Knight, 1999). Today, there is diverse opinion about co-education particularly in secondary schools. The topic has been discussed from different points of view, including moral, economic, social and educational value. Mondoh (2001) argues that people differ in learning according to how they perceive and process reality. Males and females have their own unique cognitive styles that may affect understanding and academic performance. There are different types of learners; some learn best by personal involvement, listening and sharing ideas thus prefer to be taught using group work approach. While some learn best by doing practical tasks by themselves. These types of learners prefer real and relevant hands on activities that relate to real life experience. These learners can apply concepts to new situations and can cope with lots of independent work. These differences affect boys and girls differently, especially in regard to self-confidence level, attitudes, ability to take risk and intellectual dexterity (FAWE, 1998; Changeiywo, 2000; Barmao, 2006; Sirigi, 2000).

The academic achievement levels of students attending single-sex schools compared to that of students attending co-educational schools is often a hotly debated aspect in the debate of single-sex versus coeducational schools. There are studies that demonstrate that single-sex schools are better at achieving higher academic levels; there are also studies that demonstrate that coeducational schools are better at achieving higher academic levels. Research findings are inconsistent on the effects of single sex schools on students' academic performance. Some studies have found gaps favouring girls in single-sex schools but once the findings were adjusted for socio-economic variables the differences diminished (Mallam, 1993). Harker and Nash (1997) found statistically significant differences in student performance in favour of girls in single – sex schools. But when they controlled for ability levels, social and ethnic backgrounds the differences disappeared. A study by Lopore and Warren (1997) found that boys in single –sex schools did not increase their test scores more than boys in co-educational schools did. Similarly, girls experienced little significant positive effects of single-sex school environment. Contrary, Githua (2002) found that boys in boy's only schools were more motivated and performed better compared to boys in co-education schools.

In 1998, the AAUW published a surprising report stating that single-sex classrooms may not be better than coeducational settings. What it did identify as beneficial was small class size, a focused and well-structured instructional program without bias, and a lack of stereotyping. There is agreement on the research findings that in single-sex classes' girls do score slightly higher on tests. The groups that seem to benefit most from this arrangement tend to be students who are considered to be at-risk, those from minority groups, and those who come from low socio-economic backgrounds.

Researchers have suggested that the socialization benefits of coeducation come at a cost of academic achievement in a single-sex setting. Robinson & Smithers (1999) refute this sentiment when they cite Marsh, et al. (1989):

But other studies have suggested the advantages of co-education, Marsh et al. (1989), in a longitudinal study of single-sex schools becoming co-educational, found from a range of measures, that there were social benefits from co-education and these were not at the expense of academic achievement for either girls or boys. (p. 25).

Robinson & Smithers (1999) continue their argument for co-education on the basis that it is more realistic to everyday life when they state: "It has been suggested that educating the sexes together is more like real life, and the experience of growing up with the opposite sex makes it easier to move on to the mixed environments of university and employment." (pp. 25-26) From the above studies, there is some inconsistency of findings on whether single-sex education brings about improved student academic achievement. Some studies indicated that some single-sex schools had positive results and were teaching differently, that might be reproduced in the co-educational context (Riordan, 1990). Riordan (1990) stated that girls viewed single-sex schools as more conducive to their learning, although past research fails to confirm significant gains in girls' performance.

Study Site

In the Kenyan education system, after preschool, kids enter primary school level starting grade one (Standard I) through grade eight (Standard VIII). After primary education they continue to secondary level starting grade nine (Form I) through grade twelve (Form IV). After the secondary level, there are four years of college. Unlike the primary level, many secondary schools are boarding schools where students reside in dormitories during the school year. At the secondary level students are more independent in making decisions. The research focuses on secondary school level (Form I or grade nine), because students experience different school environments. The majority of the female students drop out, and girls do worse than boys in the college-qualifying exam (Githua, 2002). The research examines two urban schools in the same neighbourhood but with different student population setting. Both are boarding schools with similar learning facilities, same curriculum content and students of same socio-economic background. For the purpose of this research the names of the schools have been changed.

The study urban secondary schools were categorized based on school type and class arrangement. The research identifies the schools as school X for co-education (boys and girls were taught in the same classes) and school G for the single-sex school (girls only school and classrooms). These schools were selected for the study because they were in the national category of schools classification in Kenya. They were similar in terms of school facilities for instruction. They also admitted students of the same academic level, by selecting qualified students from nationwide catchment. There were twenty seven girls and forty three boys in form one class in school X. In school G girls only school there were fifty students in form one as shown in table 1 below.

Table 1: Distribution of sample by gender and type of school (N = 120)

| School type | Boys | Girls | Total |
|-------------------|-----------|-----------|------------|
| School X (Form 1) | 43 | 27 | 70 |
| School G (Form 1) | - | 50 | 50 |
| Total | 43 | 77 | 120 |

The research compared how the environment in different school settings affected gender differences in self-esteem, its influence on gender dropout rates, exam scores, and gender enrolment. This research assumed that teacher attitudes and behaviour, traditional assumptions about gender roles, and boy-girl relations caused differences on gender academic success and development of self-esteem. The research was very demanding to be carried out by one researcher effectively; so nine other researchers were trained in data collection and data analysis' techniques, and participated in the research. In total, ten researchers-five men and five women-with different background and experiences were involved in this research. Three females and two male researchers formed a group to research each of the two schools for data collection.

Methodology

Methodology for this research included surveys or questionnaires, intensive interviews, observations and assessing end year report cards. This study involved studying (Form I) high school students, and how the quality of school environment affected gender enrollment, academic performance, dropout rates, and development of self-esteem. The research demanded extensive observation, long data analysis, and data comparison, so that the study took over one year to complete (January 2009 – March 2010). The research group needed to develop good trust between the students and teachers; they had to learn the school culture and environment to collect reliable data. The researchers were assigned different research roles depending on their personal experience and background. For instance, whoever had a previous experience with students was assigned the role of interviewing and observing students' daily activities. Those with social work experience were assigned the role of interviewing parents. As a former teacher in school X, my role was to oversee the interview process for both teachers and students.

This was an advantage on my side since I had prior knowledge and understanding of the culture of the school. To clarify data collection and monitor for any biases in data collection at my former school, I assigned a female researcher also a secondary school teacher to work in conducting the interviews. Before the field study, the principal researcher collected published materials and read information from earlier research on school experience and gender differences in schooling. This was important as it gave knowledge on what had already been done and what had not been done to choose justifiable topic. Reading relevant information enabled the development of literature review for this study, the formulation of research interviews, and of the research questionnaire. The research group utilized participant observation as the central research activity. One female participant observer lived in the dormitory with grade nine students in both schools. Likewise, a male participant observer lived in the dormitory with grade nine boys for the whole period of the study.

The researchers observed students' interactions, their behavior, students' day-to-day events, and recorded many aspects of situations that affected their self-esteem. There were also two female and one male in each school who observed grade nine students in different locations at school on their activities and work for the entire time of study. None-participant observation was administered in the classroom environment. This helped the researchers to observe student teacher interaction, and analysis of the effectiveness of communication in class. The researchers utilized tape recording and video taping in the classroom observation. Three surveys addressing particular issues were administered to all students at different times during the study period. Questionnaires covering issues like classroom content material, students' abilities, and exam grade and student self-confidence were administered.

This research utilized both formal and informal interviews in data collection throughout the study period. Before the interview process the researchers' reassured respondents of confidentiality of their responses. Formal interviews were administered to all grade nine students in the two schools. Questions on attitudes, education goals, classroom environment, study habits and peers were asked. Informal interviews with students were conducted while playing games, watching television or during lunch break to collect information on students' life, how they rated their self-esteem, and relations with other opposite sex students. Informal interviews with the student parents were done at home and questions regarding parents, relationship with children, and parent- to-parent relations were addressed. Teachers in different subjects were interviewed on students' academic abilities, students' social relations with other students and teachers, teaching learning process, and gender participation in class. This information was important to compare with students responses.

The experienced principal researcher examined school records and documented facilities that included students' academic reports, curriculum content, previous tests and papers, and textbooks material. This was to analyze any materials that were gender biased and to recommend a gender sensitive education program. Researchers examined available extracurricular activities in school and observed students' participation on these activities. During the process of data collection, the research group encouraged crosschecking of collected information to have completeness of data. The draft of the final report was presented to the interviewee to make sure that the researchers reported accurately the respondents' ideas. Though a few corrections were made, the research group was careful in making such decisions, to eliminate or to modify information from the original draft. The compiled data and field notes were given to the external audit committee, which was composed of people with different background and experience. The committee included experts from educational research, linguists, psychologists, statisticians and narrative discourse. The external auditors critiqued the appropriateness of the data and clarified our biases. Their comments were taken seriously and modifications were made accordingly.

Findings

The result of this study focuses on making comparisons on the effects of single-sex and co-education schools on student academic achievement. The comparisons were made between students who were taught in a normal mixed classroom environment, and those who were taught in a single-sex (girls' classroom) environment. Results of students' performance in the end of the year examinations were obtained and analyzed based on the two schools. The research sheds light on the gender difference in self-esteem and academic achievement in Kenya's secondary school level. There was significant difference between girls' performance on exams in mixed school X and the girls in school G a single-sex school. The girls in the single-sex school scored higher achievement scores relative to those in mixed classroom. School G was always ahead of school X in test achievement. Girls from both schools responded that they felt comfortable when taught by female teachers who presumably served as role models. School G had more female teachers than male. Similarly, girls in school G stated that they felt good about themselves and appreciated their accomplishments. The girls stated that they were proud of their school, and they scored higher in the final exam than boys and girls in school X.

The girls in mixed school X stated that they felt intimidated and threatened by both male teachers and boys. They stated that teachers undermined their ability and described them as stupid and lazy. The girls in school X reported that teachers assigned the boys harder teaching tasks in class to solve while girls were allocated menial chores. Girls from both schools felt that some textbooks and materials used were biased examples that tended to show males in positions of activity and authority. Observers regularly witnessed boys bullying girls outside classrooms, teasing them and blocking their movements. Surprisingly, the research found that girls in mixed school X were more talkative and willing to share unlike the girls in school G, who played conservative. The girls in school X had better communication skills than those in school G. Few girls in mixed school X actively participated in class discussions compared to the other girls who seemed to be competitive. Further, girls from school G had higher hopes for professional career (lawyers, doctors and engineers) compared to girls in school X who were undecided.

Boys in mixed school X felt confident about themselves and liked the school. They had high hopes for higher career goals than girls. The boys felt that it was good to share class with girls as this helped to have good knowledge about the girls and to have a good relation.

Conclusion

The results of this study show that there are differences in academic performance of girls based on the type of school they attended. Boys performed better than girls in a mixed school environment. On the other hand overall academic performance of girls improved in a single-sex classroom. This implies that girls are more likely to benefit most from streaming by gender. The result suggests that there was something uniquely different in the single-sex school that need to be exemplified in the mixed-sex (co-education) schools. The preliminary findings from this research also show that teachers often undermine girls in a mixed classroom. It was clear that girls had greater difficulty in achieving educational goals in an environment that favored boys. Teachers' attitudes proved to be an obstacle to girls' learning and self-esteem. The findings also pointed out that strict supervision of students, a high degree of discipline in school, and abundance of teaching resources could make students concentrate more on their academic activities, hence improvement in their academic performance. For quality and equity the academic attainment education process has to be made more gender-positive. The schools should be made both girl-friendly and boy-friendly. Finally, careful efforts to work with teachers, parents, and others involved in education are critical. Education leaders should take special care when responding to requests for or against single-sex programs that, while couched in educational terms, may have as much or more to do with ideology. Thus, a single-sex program should have a clearly articulated rationale and specific program goals before implementation efforts begin (Salomone, 2006). The research data shows that better school environment does in fact improve girls' or female school attendance, enrolment, career goals and exam results. Thus schools need to take sensible course of action to benefit student learning.

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