The Effect of a Girls’ Afterschool Math Program on Attendance Rates and Academic Achievement

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Introduction/Overview
• To improve girls’ academic achievement and attendance, an after-school girls’ math club was implemented in a local government school in Ghana between 2013-2015.

To determine whether a girls’ afterschool math program impacts the attendance and academic achievement of female students in the central region of Ghana.

Background
Education reduces poverty and leads to healthy populations and competitive economies (Blau & Smith, 2009). To ensure this is possible in Ghana, gender disparity in schools must be reduced through quality education. However, familial, social, and school factors create barriers to girls to complete their education (Glick & Sahn, 1997). In the central region of Ghana, girls finish the transition from primary to secondary education, and academic achievement and attendance remain lower than boys (Ghana Ministry of Education, 2013). The International Mathematics and Science (TIMMS) exam reported that 8th-grade girls in Ghana performed lower than boys by 25 points in math and 30 points in science (Malini, Martin, & Fay, 2008). This poorer performance by girls in STEM can be attributed to the sex differences in STEMath performance scores after implementation of the program; this shows how the program helped them catch up.

Methods
• An independent samples T test compared the attendance rates and math scores of the female GIFTED students to the male students.

Female students in the GIFTED program consistently averaged higher attendance than the male students. However, the math scores of the female students were statistically different from those of the female GIFTED students and the male students.

Participants
• 23 female students between the ages of 14-19 participated in this club.

Participants were in the club for a full two years from Grade 7 to Grade 8.

Procedures
• The math club met a total of 133 times over the two years. Each meeting lasted an average of 66 minutes.

The math club comprised a combination of lecture, hands-on activities, and small group work that supported the school math curriculum.

Results
• Student attendance and math scores were collected for all Grade 7 and 8 students in the school.

Students were in the club for an average of 66 minutes.

• Attendance rates and math scores were collected for all Grade 7 and 8 students in the school.

Children were in the club for an average of 66 minutes.

• Each term, attendance rates were calculated based on the percentage of days in school and math scores were calculated based on an average of class grades and exam scores.

The girls consistently scored lower than the boys.

• The math club met a total of 133 times over the two years. Each meeting lasted an average of 66 minutes.

The math club comprised a combination of lecture, hands-on activities, and small group work that supported the school math curriculum.

Discussion
• Female students showed higher attendance rates than male students.

Female students consistently had higher attendance rates than male students. However, the club did not show significant improvements overall, leading us to believe that the content of the program did not provide the improvements related to academic performance and had minimal impact on attendance.

• As indicated by the significant difference in female GIFTED students’ math scores compared to male students, the program reached the target population of girls underperforming in math.

The sharp increase in the female GIFTED students’ math scores immediately after implementation of the program (from 49.53 to 63.54) demonstrates that math afterschool programs can positively improve girls’ participation.

• Although female students’ math scores were not always significantly higher than the male students’ math scores, the results show that participation in afterschool programs can positively improve girls’ performance.

This suggests that participation in additional afterschool clubs can positively improve girls’ attendance and academic performance.

Selected References