

An Educational Intervention Model For Secondary School Female Students

Kinfe Abraha*

ABSTRACT: *A random sample of 73 female students from Atse Yohannes Secondary School, Makalle, have been treated in a Special Class in order to help them in a Mathematics course. The results have demonstrated positive outcomes. The girls so treated have shown better results in the ESLCE (Ethiopian School Leaving Certificate Examination).*

Introduction

The male to female ratio of the countries in the world is almost 1:1. The 1994 Ethiopian census of different regions confirms this true in Ethiopia.

Sustainable development needs to be participatory. That is, males and females have to participate equally in the process. This equality has to be maintained at all levels of political assignments, economic sectors, educational levels and other social activities; not only in quantity but also in quality. But, in practice we observe that this equality is not maintained. These inequalities seem to be results of unequal participation of females in education. Education has been found to be the strongest variable affecting the status of women.

Investment in individuals in the form of human-capital building is of paramount importance, and is critical to long-term development success (UNFPA, 1991:11). This statement indicates the role of education in development. For any country to develop, the citizens of the country have to have the necessary education which enables them to fulfill the desired objectives. According to UNDP (1991), the basic development of human resource is to widen the range of people's choices (such as access to education) to make development more democratic and participatory. To improve the status of women, formal education should be provided in manners that enhance equity.

In Ethiopia, at all levels of education, the percentage of female students is less than 50% and at higher levels the percentage is even smaller. In the first five years of the

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change of the government in Ethiopia (1984 -1988 EC), 9855 students took ESLCE in Tigray Region out of whom only 3174 (32.21%) were females.

Among a total of 1274 males and 191 females, 19.1% and 6.02 % respectively passed the ESLCE and joined colleges. From the given data of these five years, two points appear to be clear; 1) not more than one-third of the candidates are females; and 2) strictly not more than 10% of them are joining colleges.

To investigate the main reasons why many female students are failing in the ESLCE, a study was made on the ESLCE results of First Year female students in 1988 EC in Makalle Business College (Kinfé, 1996). The finding was that their ESLCE result of Mathematics was one grade less than the five subjects considered including Mathematics. Had their result of Mathematics been the same as that of the other subjects, 30% of them could have joined the degree instead of the diploma programme. A study was also made by Tsige (1991) on the same issue on 569 female students of different years from Addis Ababa University, Alamaya University of Agriculture, Asmara University and Kotebe College of Teachers Education and their ESLCE results demonstrated a female students weakness in Mathematics (that is, a Mathematics mean of 2.3 as contrasted with an English language mean of 2.9). This study explains the extent to which girls can gain from an effort aimed at overcoming such a problem.

Hypothesis

Girl-students who attend a Special Class demonstrate better results in the ESLCE than those who do not.

Methodology

This study attempted to test a model of Special Class treatment to female students who are presumed to be less achievers in Mathematics than boys. A quasi-experimental method was used and a special treatment was given to 50 female students in Atse-Yohannes Comprehensive Secondary School, Makallé (73 were selected originally) The students were randomly selected from the 150 female students who completed grade 11. The Special Class was conducted for about 8 months and covered the topics:

- 1) General mechanisms of building self confidence,
- 2) Principles of time management,

- 3) Mathematics study skills,
- 4) Basic high school Mathematics.

Sampling Technique

From the 150 female students who completed grade 11 in Atse Yohannes Secondary School, 50 were randomly selected. These students were willing to participate. Half of the students (73) were included originally and due to different reasons 23 dropped out and only 50 continued till the end. The educational background of the 50 students who continued had no significant difference in their attitude towards Mathematics with their counterparts. As the selection criterion was a simple random sampling, their previous performance was not taken into consideration.

Administration of the Treatment

The teaching learning process was conducted for about 250 hours and included:

- 1) A general methodology of building self confidence for about 10 hours;
- 2) Time management system for about 10 hours;
- 3) Both general and subject - specific study skills for about 8 hours; and
- 4) Discussion of basic high school Mathematics courses for about 122 hours.

During the teaching learning process, a questionnaire was prepared and distributed to study their backgrounds and their views of the problems of female education in general and Mathematics in particular. Questions were also raised to elicit possible solutions. The students were also grouped into nine 5 - 7 small group sizes and were made to discuss the problems and topics selected by the teacher. Each group had a chair person and a secretary and had its own duties and responsibilities.

Results

a) Pre-intervention

At the time of the study, the students were aged ranging from 17 to 24 years with a modal age of 20 years. In starting their formal education, the students had a gap of 10 years; and on the average, the students had started their education at the age of 7 years. Generally, it was also observed that the educational level of their mothers was less than that of their fathers. Out of the 50 students, 35 had dropped out of school at least for a year.

Using focus group discussions and questionnaires, the reasons for the deterioration of performance at higher levels of education were discussed. The following responses were obtained:

- 1) About 86% of the female students agreed that as the grade level increases, the teaching learning process needs more student effort. At the same time, the ages of the female students exposes them to greater family responsibilities and are obliged to do all what their mothers are expected to do both at home and outside. This limited the study time of female students.
- 2) About 74% of the students also said that the cultural pressures and other social problems also oblige female students not to be free and not to do their best in their studies.
- 3) Adolescence and other behavioral changes associated with it were also recognized as causes for the problem.
- 4) About half of them reported that females usually lack confidence and loose hope easily when comforted by problems in education.

Other responses such as not working hard, economic problems, having no long-range plans, and problems of managing time were also mentioned as causes of the problems by some of the students.

From their responses, it was realized that most of them had problems not only on the mechanisms of solving their problems, but also in identifying their problems.

The responses given by female students to the question, why most female students perform poorly in Mathematics were as follows:

- 1) Eighty-eight percent of the students agreed that most females do believe that Mathematics is a subject which can be done well by males but not by females and as a result they do not try to solve mathematical problems but rather quit without trying.
- 2) Sixty-two percent of them also said that females are not free to express themselves as well as ask and answer questions of basic steps in Mathematics.
- 3) Mathematics needs repeated trials and doing more exercises. But, most female students are busy at home and do not have enough time for that.

- 4) Twenty-six percent of the students have also explained that lack of self confidence and lack of concentration in classes are factors which affect the performance in Mathematics.

Other reasons, such as, problems of time management, not using libraries, not having the habit of working in groups, negative attitude towards the subject were also mentioned as factors for low performance in Mathematics.

b) Post-Intervention Results

After conducting the class for about 250 hours, the following results were obtained:

- 1) Female students saw that they could set goals in life.
- 2) Female students believed that they can succeed by developing self-confidence.
- 3) Female students performed better in all the subjects by applying the study skills.
- 4) About 70% of them had an ESLCE score of 2.0 and above in 1989 E.C.
- 5) About 42% of them scored 2.4 and above.
- 6) About 24% of them had scores of 3 and above.

In the past six years including 1989 EC, 3735 female students took ESLCE out of whom only 275 (7.36 %) had passed. It is for the first time that female students scored 3.80 in Atse-Yohannes Comprehensive Secondary School and in 1989 E.C. About 50% of the students who scored 3.80 in Tigray were from the Special Class of the 50 students who participated in the Intervention Programme:

Out of the 84 female students who scored 2.6-and-above from Tigray, 27 (32.14%) were from Atse-Yohannes and most of them from the Special Class.

One can observe that there was a clear difference in the performances of the 50 students who attended the Special Class and those who did not. The contributing factors were:

- 1) That the general educational atmosphere was encouraging for females.
- 2) That the rewards and motivations provided contributed much to making more effort
- 3) In the Special Class they learned that they
 - can succeed in education provided that they believe in success.
 - have acquired skill in managing their time.
 - have benefited from the additional study skills

This shows that female students need special help in most of the subjects including Mathematics. According to their response to the questionnaire, all of the female students agreed that there should be a Special Class in Mathematics.

Conclusion

The Special Class which was arranged for 50 students in 1988 - 1989 E.C. in Makalle proved that the problems associated with female education in general and in Mathematics in particular could be alleviated by exerting extra effort. This intervention is now applied to more than 3,000 female students in the Region and was observed to enhance the participation of female students in education.

Recommendation

Such intervention models should be encouraged by governments and all development agencies so that female students in all regions can benefit. It is the belief of the researcher that this kind of intervention model which could be conducted by teachers, who could be paid some amount of money, could accelerate the development of our educational process.

The problems with female students is that they have additional loads and family responsibilities. To overcome the problem and compete with the males, they need special help in most of the subjects especially in Mathematics and English. Such special classes have to be well organized. The programme has to involve the female students from grades 9 - 12. Such intervention models have also to be extended to the tertiary levels as well as primary grades of all regions.

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