

**Short Communication**<http://doi.org/10.61489/30053447.1.110>**Effects of Tutorial Sessions on the Academic Performances of Female Urban Environmental Management Students at Kotebe University of Education, Addis Ababa***Getachew Dagnew Gebreeyessus<sup>1</sup>, Dessalew Berihun Adem<sup>2</sup>, Abayneh Getaneh<sup>3</sup>*<sup>1,2,3</sup>Department of Urban Environmental Management, Kotebe University of EducationE-mail: <sup>1</sup>getachewdagn@yahoo.com; <sup>2</sup>dessalewb@gmail.com,**Abstract**

Unlike the developed world, developing nations, including Ethiopia have a far less enrollment of female students at higher education institutions. Even those enrolled evidenced a relatively high attrition rate and lower academic performance for many reasons. There are various socio-economic factors for the academic impediment of the many girls who entered into tertiary level institutions, including Kotebe University of Education. To curb such obstacles, different approaches are suggested such as giving tutorials to students. The aim of this study was to evaluate the difference in the test performances of the least-scoring Urban Environmental Management undergraduate female students due to the administration of tutorials using a cross-sectional study design. Thus, purposive sampling, which focused on low-performing female students, was applied. Data on class room achievement was gathered using test items. The data collected has been entered to excel sheet and was analyzed using R. The results show that a statistically significant difference in in the test performance was achieved by the selected students following delivery of the tutorial. Aside from the scores, the engagement of the students observed during the tutorials was notable. Therefore, such kind of supports can help regain performances in an undergraduate female student at higher education institutions.

**Key words:** Academic performance, Female students, Test, Tutorial**1. Introduction**

Despite the appreciable university enrollment and success ratio of female students in the developed world, female students' success in universities in the developing world, including the African continent, is disproportionately low for many reasons. Female students' college dropout used to be high when compared to male counterparts in countries such as Ethiopia (Abdurehman and Bekele

2019; Melese and Fenta 2009; Sperling and Winthrop 2015). Such facts are attributed to the many factors, including family background related, school and students' related characteristics (Tadesse 2009). These prevailing facts and the considerable impact of educating girls on the general society calls for alternative pedagogic interventions so as to offset the hurdles such as the application of tutorials, which is proved to be operative in filling the gaps among those academic risk students (Glomo-Narzoles and Glomo-Palermo 2020). The tutorial has been defined by scholars as "tutoring is a formal process that involves as a relationship between a more experienced and knowledgeable person that plays a supporting role with a less experienced and knowledgeable person, so as to facilitate that person's career and personal development" (Glomo-Narzoles and Glomo-Palermo 2020).

Regarding improvement of female students' academic performance, diverse initiatives were designed by the government of Ethiopia (Bayeh 2016). Despite the many efforts with little improvements, gender imbalance continued to be an issue in almost all universities in Ethiopia. Based on a study by Asfaw in 2012, the many challenges female campus students faced and identified included economic, underestimating girls' ability and gender bias (Asfaw 2012). Ethiopian experience also showed the least matriculation (27%) and high attrition (a quarter of them) of female students, especially by those who come from the remote areas of the country (Asfaw 2012; Yasin 2013). These and other factors are impeding female students' academic success.

Tutorials have been practiced in different levels of the formal education sector, ranging from preschool to undergraduate college students. The mode of its delivery also varies depending on the settings that include group tutoring, one-to-one tutoring, peer tutoring and parental tutoring. Even though, such lessons are helpful to every candidate depending on interest and course nature, it usually targets the least scoring and needy students (Baker et al. 2000).

Hence, administering tutorials in the case of Kotebe University of Education was deemed useful for supporting those low performing female students and to see if that brings the desired impact. Consequently, the current research evaluated the effect of administering tutorials on the first year Urban Environmental Management (UEM) female students whose academic performance was relatively lower among the same cohort using a cross sectional study design. Comparing the academic results of the students before and after tutorials, a significant improvement was seen from

the results. Thus, the finding suggests the pivotal role of administering tutorials to bring academic performance improvements in female students. However, the latter claim is subjected to the proof of the same result based on a university-wide study.

## **2. Methodology**

Studies that aim to determine factors regarding the performances of students involves the administration of pre and post-tests following the manipulation of instructional media and methods (Lestari and Setiawan 2017).

### **Study design and sampling**

A cross-sectional study design was applied in the current study whereby low-performing female students of the same entry batch were selected. Therefore, purposive sampling was applied to select the respective department, course and the students. While selecting the students, a number-coding was given to each student anonymity. Test items were developed to measure the knowledge of the students in the course administered. The nominated students were double-tested on the same content before and after the delivery of the tutorial, which was carried out in a purposefully selected classroom setting located within Kotebe University of Education's main campus.

In this process of double-testing, the whole first year UEM students were first involved in the test and later those female students who scored below average, the course instructor, the research group and a technical assistant in the same department have been involved. There were totally 59 year-I UEM Students of both sexes who were the study population and those who scored below average were given tutorial before the post-test. Coincidentally, these students were at risk of dismissal. The ten questions were all multiple-choice by type.

Before the tutorial, all students were given 20 minutes of test in the specific course called Urban Hygiene and Communicable Diseases Control (EnMa 2319). After the result of the first test those female students (20 %), which accounted for the 98 % of the least scorers and who scored below average were, selected to be given tutorials for a period of 3 hours per week (conducted biweekly) for four consecutive weeks. The tutorial session was provided based on their prioritized problem in the course chapters. Following the tutorials given, the students took another 20 minutes of test on the same content and their scores were compared before and after the tutorials.

## Data collection

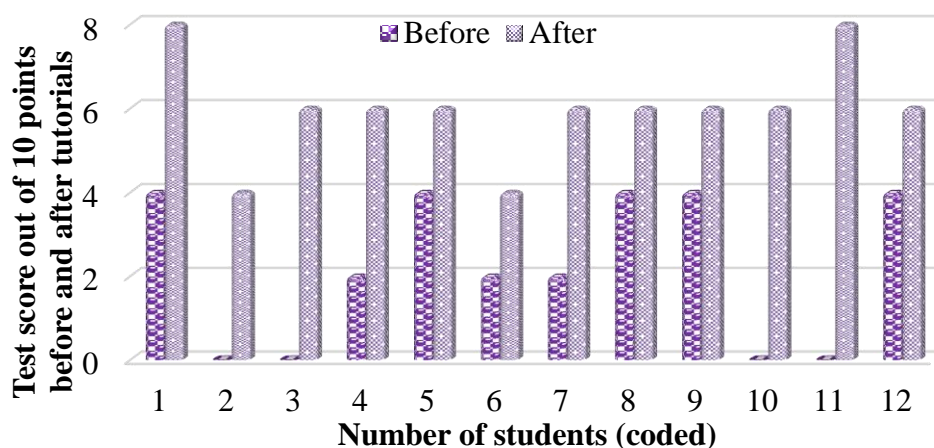
Classroom achievement test was used to collect the required data. The test score of those selected students was recorded before and after tutorial using spread sheet. Different stationery materials, classroom, and other electronic resources were utilized during the assessment.

## Data analysis

The data entered to excel were coded, cleaned and organized and later analyzed using the freeware R. The study employed the non-parametric test, which is Wilcoxon signed-rank test, to analyze of the effect of tutorial delivery to those underscoring first year female students of the Department of UEM. Following, it was interpreted and compared with past related studies elsewhere.

## 3. Results

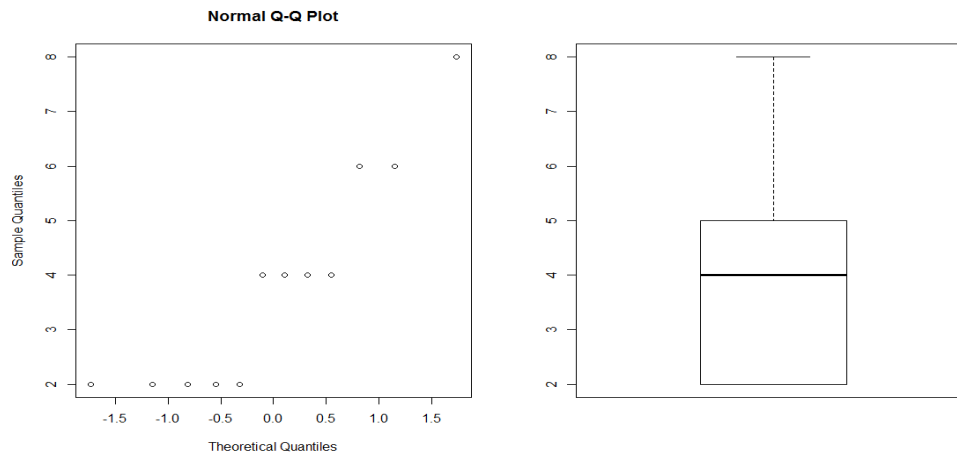
The minimum score difference following the tutorial action was two and the maximum was eight with an average of  $3.833 \pm$  the standard deviation, which was 1.99. Student number 2 and 11 were excelling while they came out of the previous poorest performance, according to the pre-tutorial record, which include student number three and ten. In fact, the average score during the post test was 6/10, which is relatively higher than the pretest average score of all study subjects that was 5/10. The results of the pre and post tutorial performance of students is presented in figure one.



**Figure 1.** Difference in the test performance of female Urban Environmental Management Students before and after tutorial

Based on the data distribution test for normality, the data were abnormal or skewed, perhaps due to the lower sample size (**Fig. 2**). Therefore, the alternative or non-parametric test equivalent to

the paired t-test, which is the Wilcoxon signed-rank test, was applied.



**Figure 2.** Line and box plot for the data on the difference of the scores of students

#### 4. Discussion

The finding of the current study reveals that all female students brought a significant improvement in performance following the delivery of the tutorial. The statistical test showed that the performance of female students before and after tutoring was significantly different ( $p$ -value = 0.002) in favor of positive performance. This finding agrees with a related lower grade study, which was conducted by Fantahun Admas and Tirussew Teferra, which was a survey done on elementary and high-school students in three locations in Ethiopia and has proved the effect of student support such as in academic areas enabled students achieve and adjust better (Admas and Teferra 2017).

During the tutorial sessions, the students also demonstrated appreciable engagement and noticeable freedom of interaction when compared with the regular session's experiences. Regarding interaction and beyond advantages of tutorial delivery is also reported by a study conducted in Wachemo University in Ethiopia, claiming the psychological advantage of tutorials in addition to the academic improvements (Melaku 2021). Thus, understanding female students' performance needs to consider not just academic features but also the students' characteristics as it can lead to gaining of possible policy inputs (Dimbisso 2009).

Indeed, the need for tutorials that bases on gender or age is not something universal. For instance, a study in an Australian University found a weak relation between tutorial and the age or sex variables with the performance of accounting course students. This same study further argues that

the administration of tutorial solutions to students did not prove improved performance by the students. Thus, the implication of prior academic experience, including performance at high school also plays a key role in the tertiary level education performance. Consequently, the application of tutorial session at university level courses cannot guarantee the success of low performing students irrespective of age or sex variations. However, sex, ethnicity and age remained as a potential factor to influence performance of students, even in the developed world that include the United States of America (Monem 2007).

In a related fact, the attendance or non-attendance of tutorials by the students brought a significant effect in the performance of university students, based on a study by Patrick and Arjan (Bijsmans and Schakel 2018). This study conducted on first year Maastricht University students claims that attendance need be given attention equally to an interactive and student-centered approach like that of problem-solving one. Hence, tutorials in themselves cannot guarantee high pass rates. Undeniably, more other factor, including self-discipline, social coherence and positive attitudes play parts in students' success (Matsoso and Iwu 2017).

In any case, however, student performance is not universally influenced by gender in favor of the boys. In some geographic regions or school girls can perform better than boys or vice versa (Awan and Azeem 2017). Contrarily, a study in Bahir Dar University reported a less success rate of female students at higher education institutions, mainly due to socio-cultural factors (Tiruneh and Petros 2014).

Regarding devising of a systematic approach on how to apply tutorial programs for female students in the entire campus female students, it was recommended to involve contributor parties like technical assistants and language assistants during tutorials. Moreover, the voluntarily commitment of the instructors in charge is crucial. On the students' side, it is advised that considering the students' diverse background and approaching them and being cognizant of that would help much.

## **5. Conclusions**

Delivery of tutorial sessions to least performing female students can bring a significant change in their academic performance. Though, tutorial endeavors would demand commitment and material as well as time expenditures, Kotebe University of Education and other similar institutions need to consider assisting of least performing students for tutorials using various means.

## **6. Implications**

The promising findings indicate the role of tutorials to academic performance improvements, especially for low-performing female students thereby indicating the inclusion of diverse pedagogical approaches to providing policy inputs. However, further university-wide study based on random sampling is recommended to prove if similar outcome will occur.

## **Limitation**

The low sample size and non-presence of the control group was a limiting condition in the generalization of the findings.

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## **Declaration of competing interest**

The authors declare that there is no conflict of interest in this study

## **Authors' contribution**

All authors contributed equally.

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