Do School Characteristics matter in Student-Teacher Performance in Teaching Practice? Empirical Evidence from Kenyan Public Universities

Dr. Wanyonyi Annette, Masinde Muliro University of Science and Technology, Kenya

Abstract

School attachment is an important component of teacher education. Public universities have thus designed their own rules and regulations regarding the schools they post their student teachers for teaching practice. The purpose of this study was to determine the effect of school characteristics on student teacher performance in teaching practice in Kenyan public universities. This paper reports the findings of multiple regression analysis on the effect of school characteristics on student teacher performance in teaching practice in Kenyan public Universities using data collected from a random sample of 344 student teachers and 5 heads of school attachment units in public universities in Kenya using questionnaires, interview schedule and document analysis. The results of the multiple regression analysis indicate that all school status variables are statistically significant while the other school characteristics variables of school type and school category were not. However, the student’s attitude, commitment and confidence are important in explaining variations in student teacher scores in teaching practice. It is recommended that universities should post student teachers in model schools that provide adequate and varied environment such as national and extra country schools that enhances student teacher performance in teaching practice.

Key words: School Attachment Practices, School Attachment, Student Teacher, School Characteristics, School Type, School Category, School Status, Student Teacher Performance in Teaching Practice, Student Teacher Mean Score in Teaching Practice

1. Introduction

There is no doubt that public universities and student teachers have their individual considerations that guide them in selecting secondary schools for school attachments. Some researchers have been interested in finding out how children learning outcome and educational performance are strongly affected by the standard and type of educational institution in which students get their education. The educational environment of the school one attends sets the parameters of students’ learning outcomes. This may not be quite different from the relationship between the type and status of schools student teachers are posted for school attachment and their achievement.

Considine & Zappala (2002) quote Sparkles (1999) arguing that school environment and teachers expectations from their students have strong influence on student performance. Most of the teachers working in poor schools or schools having run short of basic facilities often have low performance expectations from their students and when students know that their teachers have low performance expectations from them, it leads to poor performance by the students. Kwesiga (2002) approves that performance of the students is influenced by the school in which they studied and that the number of facilities a school offers usually determine the quality of the school which in turn, affects the performance and accomplishment of its students.

Sentamu (2003) argues that schools influence educational process in content organization, the teacher, teaching and learning process, and in the end evaluation of them all. All these educationists and researchers agreed with the principle that schools put strong effect on academic performance and educational attainment of students.

According to Shoukat et al. (2013), students from elite schools are expected to perform better because they attend these elite schools and the main reason behind is that these schools are usually very rich in resources and facilities. Some researchers have the view that school ownership and the funds available in schools do indeed influence the performance of the student. Crosne & Elder (2004) notices that school ownership; provision of facilities and availability of resources in school, is an important structural component of the school. Private schools due to the better funding, small sizes, serious ownership, motivated faculty and access to resources such as computers perform better than public schools. These additional funding resources and facilities found in private schools enhance academic performance and educational attainment of their students.
Some studies have defined school type as either girls’, boys’ or co-educational schools. They have investigated on how this category affects the performance of students. A study carried out by ACER (2008) found out that girls attending single sex schools produced higher tertiary entrance scores than those in co-educational schools. Most other studies have indicated that boys contribute more to classroom interaction by calling out answers and dominate in hands-on activities, such as laboratory work and computer sessions (Francis, 2004). From this perspective, the presence of boys in the classroom is seen as having a negative effect on girls’ academic engagement and achievement.

Saidin & Brahim (2011) in a study carried out in single-sex schools in Malaysia they found out that boys performance in English and foreign languages, and girls performance in Mathematics and science improved in a single gender settings. The study reveals that in gender separate classroom, students have higher motivation and higher confidence levels which offer them better educational opportunities. Participation and general behavior of learners during classroom lesson assessment plays a vital role in the performance of a student teacher.

A study carried out by Mburu (2013) discloses that teachers had developed a negative attitude towards mixed schools and most of them were in favour of single sex schools. Only a few teachers preferred to teach in mixed boarding and mixed day schools. He also states that the type of school attended affected students’ academic performance. The study limited itself to effects of the type of school attended on student academic performance in two Districts in Kenya. It adopted the descriptive survey design, sampled teacher and students and used 2 questionnaires to collect data.

It is concluded that the type of schools in which students studies greatly influence the educational performance and academic achievement of the students. Miller and Birch (2007) summarizes the views of many researchers and educationists in their study on the influence of high school attended on university performance. This study let the research scholars to hypothesize that the background to the students positively correlates with the academic attainment of graduate students. The above reviewed literature has laid emphasis on resources and facilities in schools and how they impact on the performance of students. Most of the studies have been conducted outside Kenya.

These studies have only focused on the performance of the learners without analyzing the behavior of students vis-a-vis student teachers who are being trained to become teachers. This study goes a step further to establish the effects of school type on the performance of a student teacher during school attachments in public universities.

2. Statement of the Problem

School attachment is an important component of teacher education. Public universities have thus designed their own rules and regulations regarding the status and type of schools they post their student teachers for teaching practice. The ultimate goal of the exercise is to produce quality teachers who would train students to take up courses that would shape the economy of the country.

On type of schools, Considine & Zappala (2002) quote Sparkles (1999) arguing that most of the teachers working in poor schools or schools having run short of basic facilities often have low performance expectations from their students and when students know that their teachers have low performance expectations from them, it leads to poor performance by the students. According to Mburu (2013), teachers had developed a negative attitude towards mixed schools and most of them were in favour of single sex schools while only a few preferred to teach in mixed boarding and mixed day schools.

Irrespective of the type and status of schools student teachers are posted to, public universities in their efforts to utilize the limited resources within their reach are spending a lot of the same resources in terms of finances, qualified supervisors and time on the exercise to attain quality in school attachments. Available studies have shown that there is still need for more resources towards the exercise. Kasomo, (2013) and Ekundayo, (2014) assert that in order for the exercise to succeed, adequate finances are required to cover administrative work and student teachers’ and supervisors’ needs.

However, empirical evidence on the effect of the status and school type on performance of student teachers in teaching practice in public universities in Kenya is not known. This study is therefore designed to address this concern. Owing to the expenditure by public universities, this data is considered useful in helping them to establish the best criteria of identifying schools for attachment practices that will be cost effective at the same time maintain the quality of the exercise.

3. Purpose of the Study

The purpose of the study is to establish the effect of school characteristics on student teacher performance in teaching practice in Kenyan public universities.

4. Research Hypothesis

The study was guided by the following null hypothesis:
H₀: School characteristic has no statistically significant effect on student teacher performance in teaching practice in Kenyan public universities.

5. Research Methodology

The study used descriptive survey design which is sufficient in collecting large amounts of information (Kombo & Tromp, 2006; Polland, 2005; Orodho, 2005). It allowed the researcher to collect data from a large sample of student teachers and school attachment zonal coordinators using questionnaires and an interview guide respectively and to establish exploratory changes that took place in the dependent variable given the independent variable using multiple linear regression and also allowing the collection of both quantitative and qualitative data that was subjected to both descriptive and inferential analysis.

The target population of this study was 2239 comprising of the 2234; 2015/16 student teachers from 5 public universities in Kenya namely: Moi, Kenyatta, Egerton, Maseno and Masinde Muliro before the enactment undertaking school attachment in the four counties of western Kenya, namely; Kakamega, Bungoma, Vihiga and Busia, and the five heads of school attachment units in the five public universities. A total of 339 copies of designed questionnaires were distributed to student teachers using simple random sampling procedure across schools in the western region of Kenya. In all, 296 fully completed copies of questionnaires were obtained from respondents who participated in the study. The 296 gives an average of 86.04% which was considered adequate for the study of this nature. The number comprised 154 females and 142 male student teachers.

6. Research Findings

This study modeled the effect of school characteristics on student teacher performance in teaching practice in Kenyan public universities using multiple linear regression analysis. To effectively do so, the study first ran a pair-wise correlation between the outcome variable (student teacher z-scores in teaching practice) and its covariates to establish plausible variables to pursue in the regression model at \( p = 0.05 \). The results are presented in Table 1. Besides, the Kernel density results \((p < 0.001)\) in Figure 1 showed the variables included in the model were normally distributed. Further, the results of multicollinearity using variance inflation factor (VIF) test in Table 2 indicate that the regression model did not experience collinearity problems (Stock & Watson, 2003).

![Kernel density estimate](image)

**Figure 1:** Kernel density estimate testing for normality of the residuals after the final regression model under the study. Skewness-kurtosis test, \( p = 0.011 \)
Table 1: Correlation Matrix between the Outcome Variable and its correlates for the Study

| Variable | b82 | b511 | b513 | b521 | b522 | b523 | b531 |
|----------|-----|------|------|------|------|------|------|
| b82      | 1   |      |      |      |      |      |      |
| b511     | 0.372 | 1   |      |      |      |      |      |
| b513     | -0.501 | -0.365 | 1   |      |      |      |      |
| b521     | -0.406 | -0.238 | 0.490 | 1   |      |      |      |
| b522     | 0.610 | 0.394 | -0.639 | -0.492 | 1   |      |      |
| b523     | -0.373 | -0.259 | 0.340 | -0.216 | -0.744 | 1   |      |
| b531     | 0.590 | 0.319 | -0.268 | -0.191 | 0.388 | -0.289 | 1   |

Note: a=Pearson correlation coefficient; b= p-values (α=0.05); Pair-wise correlation: ≤0.35 = Weak correlation; 0.36-0.67 = Moderate correlation; 0.68-0.89=Strong correlation; ≥0.90 = Very strong correlation; Adapted from "Interpretation of correlation coefficient," by R. Taylor, 1990.

Table 2: Multicollinearity test for the Explanatory Variables under the Study

| Var. | Variable label | VIF | I/VIF |
|------|----------------|-----|-------|
| b531 | Status of school of attachment 1=National School | 4.12 | 0.24279 |
| b532 | Status of school of attachment 2=Extra County School | 3.97 | 0.25218 |
| b533 | Status of school of attachment 3=County School | 3.63 | 0.27573 |
| b793 | 3=Neutral that assessor boosted my performance | 3.48 | 0.28701 |
| b765 | 5=Strongly Agree that assessor took time to highlight my weaknesses | 3.27 | 0.30607 |
| b795 | 5=Strongly Agree that assessor boosted my performance | 3.19 | 0.31309 |
| b794 | 4=Agree that assessor boosted my performance | 3.09 | 0.32402 |
| b745 | 5=Strongly Agree that learners were free during the lesson | 3.04 | 0.32867 |
| b522 | Category of school of attachment 2=Boarding School | 2.78 | 0.35925 |
| b775 | 5=Strongly Agree that assessor took enough time to discuss the lesson | 2.55 | 0.39212 |
| b755 | 5=Strongly Agree that assessor appreciated student's lesson | 2.45 | 0.40777 |
| b783 | 3=Neutral that assessor supervised other activities out of class | 2.23 | 0.44875 |
| b513 | Type of school of attachment 3=Mixed School | 2.21 | 0.45186 |
| b521 | Category of school of attachment 1=Day School | 2.08 | 0.4806 |
| b744 | 4=Agree that learners were free during the lesson | 1.96 | 0.50969 |
| b774 | 4=Agree that assessor took enough time to discuss the lesson | 1.90 | 0.52677 |
| b772 | 2=Disagree that assessor took enough time to discuss the lesson | 1.87 | 0.5361 |
| b781 | 1=Strongly Disagree that assessor supervised other activities out of class | 1.80 | 0.5567 |
| b714 | 4=Agree that student was at ease with assessor | 1.72 | 0.58229 |
| b742 | 2=Disagree that learners were free during the lesson | 1.57 | 0.63874 |
| b752 | 2=Disagree that assessor appreciated student's lesson | 1.57 | 0.63876 |
| b712 | 2=Disagree that student was at ease with assessor | 1.53 | 0.65465 |
| b511 | Type of school of attachment 1=Boys School | 1.48 | 0.67412 |
| b715 | 5=Strongly Agree that student was at ease with assessor | 1.40 | 0.71301 |
| b34 | Student's year of study 1=4th | 1.28 | 0.78054 |
We test the null hypothesis that the model has no specification errors. Our result for hatsq is p=0.369 leading to a failure to reject the null and conclude that our model is correctly specified.

Consequently, the study used three models to measure the effect of school characteristics on student teacher performance in teaching practice in Kenyan public universities. In model 1, the study assessed the effect of school characteristics on student teacher performance in teaching practice. In model 2 and 3 the study assessed the effect of school characteristics on student teacher performance in teaching practice while controlling for students characteristics; and students’ characteristics and student teacher perceptions on university assessors respectively. In the model, the value of the coefficient indicates student teacher z-scores in teaching practice. The positive sign and negative signs of the coefficient indicate increased and decreased student teacher z-scores in teaching practice respectively. The significance of the relationship between a given independent variable and the dependent variable is tested at p=0.05. The result of the multiple regression model is presented in Table 3.

Table 3: Multiple Linear Regression Coefficients of the Effect of School Characteristics on Student Teacher Performance in Teaching Practice

| Var | Variable label                                      | Model 1 (b82) | Model 2 (b82) | Model 3 (b82) |
|-----|----------------------------------------------------|---------------|---------------|---------------|
|     |                                                    | U. Coef p B   | U. Coef p B   | U. Coef p B   |
| b511| Type of school of attachment 1=Boys School        | 0.00 0.965 0.00 | -0.02 0.810 -0.01 | 0.00 0.981 0.00 |
| b513| Type of school of attachment 3=Mixed School       | -0.14 0.233 -0.06 | -0.15 0.195 0.06 | -0.06 0.485 -0.03 |
| b521| Category of school of attachment 1=Day School     | -0.08 0.506 -0.03 | -0.13 0.273 -0.04 | 0.00 0.990 0.00 |
| b522| Category of school of attachment 2=Boarding School| 0.19 0.128 0.09  | 0.15 0.225 0.07 | 0.13 0.232 0.06 |
| b531| Status of school of attachment 1=National School  | 1.89 <.001 0.76 | 1.89 <.001 0.76 | 2.03 <.001 0.82 |
| b532| Status of school of attachment 2=Extra County School | 1.25 <.001 0.52 | 1.24 <.001 0.52 | 1.33 <.001 0.55 |
| b533| Status of school of attachment 3=County School    | 0.51 <.001 0.24 | 0.48 <.001 0.23 | 0.52 <.001 0.25 |
| b34 | Student's year of study 1=4th                      | -0.23 0.001 -0.12 | -0.06 0.430 -0.03 |
| b65 | Students' programme 1=Arts                        | 0.04 0.576 0.02 | 0.02 0.723 0.01 |
| b712| 2=Disagree that student was at ease with assessor | -0.05 0.544 -0.02 |
| b714| 4=Agree that student was at ease with assessor    | 0.24 0.040 0.09 |
| b715| 5=Strongly Agree that student was at ease with assessor | 0.53 0.008 0.08 |
| b742| 2=Disagree that learners were free during the lesson | 0.11 0.160 0.06 |
| b744| 4=Agree that learners were free during the lesson | 0.08 0.566 0.03 |
| b745| 5=Strongly Agree that learners were free during the lesson | 0.55 0.034 0.11 |
| b752| 2=Disagree that assessor appreciated student's lesson | -0.07 0.396 -0.04 |
| b755| 5=Strongly Agree that assessor appreciated student's lesson | 0.07 0.813 0.01 |
| b765| 5=Strongly Agree that assessor took time to highlight my weaknesses | -0.58 0.031 -0.13 |
| b772| 2=Disagree that assessor took enough time to discuss the lesson | -0.02 0.805 -0.01 |
| b774| 4=Agree that assessor took enough time to           | 0.26 0.130 0.09 |
The results of the multiple regression in model 1 in Table indicate that all school status variables are statistically significant at the 95% level. The other school characteristics variables (school type and school category) are not statistically significant. The results in Table 4.8 indicate that national schools are associated with up to 1.888713 (p<.001) close to 2 standard deviations above the mean in assessed score compared with the rest. Extra county schools are associated with up to 1.2471 (p<.001) more than 1 standard deviation above the mean in assessed score compared with the rest. County schools are associated with up to .5176501 (p<.001) standard deviation units above the mean in assessed score compared with the rest. The other school characteristic variables are not statistically significant. National schools are associated with up to 1.888713 (p<.001) close to 2 standard deviations above the mean in assessed score compared with the rest. Extra county schools are associated with up to 1.2471 (p<.001) more than 1 standard deviation above the mean in assessed score compared with the rest. County schools are associated with up to .5176501 (p<.001) standard deviation units above the mean in assessed score compared with the rest. The overall model was statistically significant, p<.001 explaining 0.6469 or 64.69% of the variation in student teacher scores in teaching practice.

Controlling for the student's characteristics in model 2, the results of the multiple regression in Table 4.8 indicate that all school status variables are significant at the 95% level. The other school characteristic variables are not statistically significant. National schools are associated with up to 1.888823 (p<.001) close to 2 standard deviations above the mean in assessed score compared with the rest. Extra county schools are associated with up to 1.240454 (p<.001) more than 1 standard deviation above the mean in assessed score compared with the rest. County schools are associated with up to .5080398 (p<.001) standard deviation units above the mean in assessed score compared with the rest. Extra county schools are associated with up to 1.2471 (p<.001) more than 1 standard deviation above the mean in assessed score compared with the rest. County schools are associated with up to .5176501 (p<.001) standard deviation units above the mean in assessed score compared with the rest. The results suggest that school status has a great effect on variation of student teachers scores in teaching practice. The results also indicate that national schools had the greatest effect on variation of student teachers score in teaching practice followed by Extra County and County schools respectively. The results suggest that National schools offer better environment for student teachers as compared to county or sub-county schools. The findings resonate those of Considine and Zappala (2002), Sparkles (1999) and Kwesiga (2002).

For instance Considine and Zappala (2002) study indicate that school environment and teachers expectations from their students have strong influence on student teacher performance. Their findings also indicate that teachers working in poor schools or schools having run short of basic facilities often have low performance expectations from their students. Similarly, Kwesiga...
(2002) posits that performance of student teachers in school practice is highly influenced by the school they are practicing in terms of the number of facilities a school offers and the quality of the environment. Sentamu (2003) argues that schools influence educational process in content organization, the teacher, teaching and learning process, and in the end evaluation of them all.

The results in Table 4.8 also show that a student teacher who agreed or strongly agreed with the statement that they were at ease with assessor is associated with 0.2362147 (p=.040) and 0.5348531 (p=.008) scores above the mean respectively. Similarly, a student teacher who strongly agreed with the statement that learners were free during the lesson is associated with up to 0.5462831 standard deviation units score above the mean (p=.034). Beside, a student teacher who strongly agreed with the statement that assessor took time to highlight their weaknesses is associated with up to -0.5778944 standard deviation units score below the mean (p=.031). This is an expected negative score. Ideally, students should benefit from mistakes raised by the assessors by correcting them to improve on their performance. This suggests that student teachers take negatively corrections given by assessors and this may have an effect on performance in their subsequent assessments. The results of the linear regression on student teacher perceptions on university lecturers are similar to those in Table 4.5, 4.6 and 4.7 suggesting that this variable plays an important role in variation of student teachers’ scores in teaching practice in Kenyan public universities. The overall model was statically significant, p<.001 explaining 0.7246 or 72.46% of the variation in student scores in teaching practice.

This study further pursued the overall effect of the individual proxies of school characteristics variables on student teacher performance in teaching practice in Kenyan public universities. Since school status variables are statistically significant (b511=0, F(1, 269) = 0.00, p=0.9811; b513 = 0, F(1, 269) =0.49, p=0.4850; b521 = 0, F(1, 269) =0.00, p =0.9900; b522 =0, F(1, 269) =1.43, p=0.2323; b531 = 0, F(1, 269) =195.32, p=0. <0.001; b532 = 0, F (1, 269) =93.92, p<0.001 and b533 =0, F (1, 269) =24.71, p <0.001), at the 95% level, we reject the null hypothesis that such school characteristics do not have any effect on student assessment scores.

8. Conclusions and Recommendations

8.1 Conclusions

The results of the multiple regression analysis after controlling for all variables in the model indicate that the selected school characteristics (school status) was associated with students’ scores in teaching practice in Kenyan public universities at the 95% level while the rest (school type and school category) were not. We reject the null hypothesis that school characteristics have no statistically significant effect on overall student teacher assessment score in school attachment. The results show that students practicing in national, extra county and county schools are associated with up to 2.034261 (p<.001), 1.325649 (p<.001) and 0.5176501 (p<.001) standard deviations above the mean in assessed score respectively compared to the referenced school status. The results suggest that school status has a great effect on variation of student teachers scores in teaching practice. The results also indicate that national schools had the greatest effect on variation of student teachers score in teaching practice followed by Extra County and county schools respectively. The results suggest that national schools offer better environment for student teachers to perform well in school assessment.

8.2 Recommendations

The findings show that school status was important in explaining variations in students’ scores and that national schools offer better environment for student teachers to perform well in school assessment followed by extra county schools. It is therefore recommended that universities should post student teachers in model schools that provide adequate and varied environment such as national and extra country schools that enhances student teacher performance in teaching practice. National and extra county schools are well endowed with resources, teachers and students with high entry behaviour. These resources can be tapped by the student teachers thus improving on their professional delivery during teaching practice.

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