

Relationship between teacher characteristics and school performance in public secondary schools in Nyamasheke and Nyarugenge District, Rwanda

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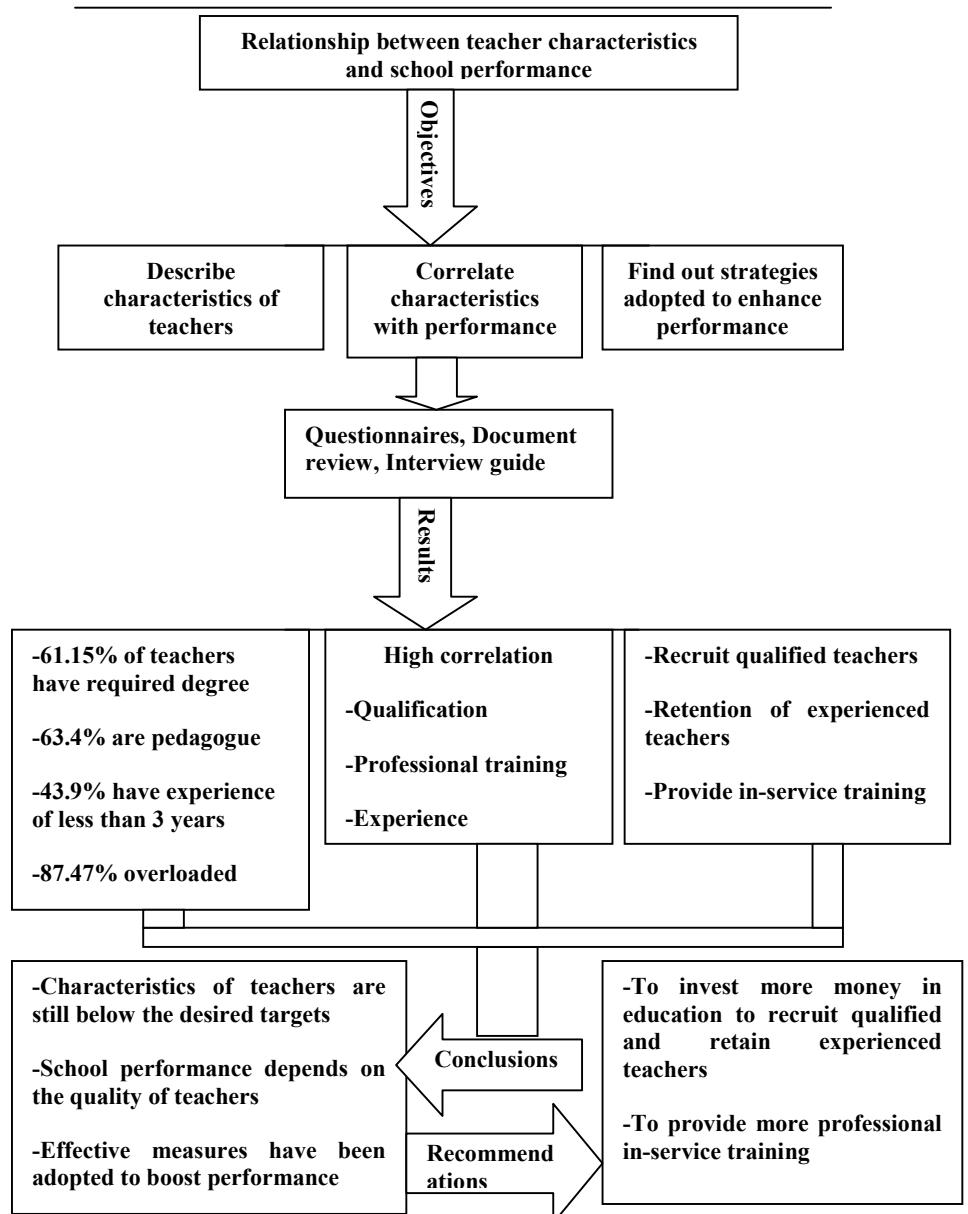
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RESEARCH HIGHLIGHTS

- Only 61.15% of teachers have the required degree to teach at secondary level, 63.47% have undergone pedagogical course 43.95% have experience of more than three years, 87.47%.are overloaded.
- Teachers’ academic qualification, professional training and teaching experience highly correlate with school performance.
- Strategies to enhance school performance include: recruitment of qualified teachers, retention of qualified and experienced teachers, and provision of more professional in-service trainings.

GRAPHICAL ABSTRACT



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ABSTRACT

In school system, the teacher is the key input as he/she is the one to create a conducive atmosphere for learning by preparing the learning content, preparing classroom environment, ordering materials, using a variety of methods to deliver learning, and he/she also assesses the level of learners, manages time and students, and should be a good role model. Therefore, the purpose of this study was to determine whether and to the extent to which relationship exists between teacher characteristics and school performance in public secondary schools in Nyamasheke and Nyarugenge districts. Specifically, the study sought to describe teacher characteristics, determine the extent to which teacher characteristics correlate with school performance, and find out the strategies adopted to enhance school performance in public secondary schools located in the two districts. This study was guided by Education Production Function theory and it adopted a correlation research design. The target population involved 70 head teachers and 2 district education officers. 21 head teachers and 2 district education officers were surveyed. Stratified sampling, simple random sampling and purposive sampling techniques were used to select this sample and questionnaires, document review schedule, and interview schedule were used to collect data. It was found that only 61.15% of teachers have a bachelor's degree, among them only 63.81% have undergone a pedagogical course, and only 56.05% have an experience of more than three years. It was further found that among the teacher characteristics, teacher qualification, professional training and experience highly correlate with school mean performance and as the coefficient of determination for each varies between 0.41 and 0.63. It was therefore recommended that the government and all other stakeholders should allocate more resources to train more teachers and retain experienced ones and provide more in-service training to enhance teachers' professionalism.

1. Introduction

Education has been recognized worldwide as key factor to boost economic development of any nation. On this basis, Barbara, Alain and Ramahatra (2003) ascertain that education is one of the most powerful instruments known for reducing poverty and inequality and for laying the basis for sustained economic growth. Likewise Woodhall (2004) emphasizes that "Education is a form of investment in human capital that yields economic benefits and contributes to a country's future wealth by increasing the productive capacity of its people." To confirm this, in its EFA global monitoring report, UNESCO (2014) insists that education plays the key role in the reduction of poverty, increasing opportunities for new jobs and accelerating economic growth as well as sustainable development.

In view of this key role of education in fostering development and economic growth, UNESCO (2014) recommends that countries should heavily invest in education by allocating at least 20% of their total budget and at least 6% of their GNP to education. This is because in the same report UNESCO confirms that the major factor that is hindering the achievement of Education for All and quality of education in general is the lack of sufficient funds in education sector. This is true because quality education depends on the quality of educational inputs and how effectively they are utilized in education system (Hanushek, 2007). However, it is to be mentioned the quality of educational output in Rwanda needs a special attention as the ICAI report

(2012) reveals that education quality in Rwanda as well as in the two other east African countries (Tanzania and Ethiopia) is so low to the extent that the large majority of pupils are failing to attain basic levels of literacy or numeracy. This report concurs with the UNICEF annual report for Rwanda which states that the quality of education has worsened due to rapid expansion of the Nine and Twelve Year Basic Education which created high pupil/teacher ratio and led to double-shift arrangements in primary school, and the switch to English as the language of instruction (UNICEF, 2013).

One of the key inputs in education system is the teacher. To this end, UNESCO (2014) emphasizes that one of the means to end the global learning crisis (poor quality) is to ensure equitable access to well-trained teachers and to ensure there is attraction and retention of highly qualified, experienced and committed teachers as well as ensuring adequate provision of other resources that are needed by the teacher to make sure children are learning. However, the report of MINEDUC (2013) reveals that although there have been considerable improvements in providing qualified teachers, the gap is still wide. According to this report, the percentage of qualified teachers in secondary schools rose from 57.4% in 2008 to 67.5% in 2012. In view of this, there is need to analyze the contribution of teachers' characteristics to educational output in public secondary schools in Rwanda.

The role of a teacher in attaining educational goals is of paramount importance. According to Bakhda (2004) the

primary role of the teacher is to create a conducive atmosphere for learning: he/she prepares learning content, prepares classroom environment, orders materials, uses a variety of methods to deliver learning, assesses the level of learners, manages times and students, and be a good role model. As the literature described here suggests, the attainment of educational goals and objectives highly depends on the teacher. To this end, Chall and Popp (1990), Stuart (2004) and Rodgers (2001), highlight that in order to achieve educational goals, “there is a need to focus on teachers’ adequacy and competency in respect to their pedagogical practices and strategies and mastery of the curriculum and subject content”. In support of this, Ekwesili (2006) states that students’ success depends on the amount of learning that takes place in the classroom which in turn is the result of the teacher’s effectiveness and efficiency in his/her daily teaching.

According to Murman (1975) teacher is the most important input in a school setting and his/her quality significantly affect students’ academic achievement. This was voiced by Lassa (2000) who states that teaching is an art that should be performed by a highly qualified person who can plan, deliver lessons in order to effectively achieve set objectives. Guga (1998) adds that not everybody can provide quality education. He emphasizes that education should be provided by a highly trained teacher for the purpose of achieving educational objectives in a given society.

Several studies have been conducted to investigate the impact of teacher as a school input on the educational output. The findings of most of these studied revealed that a positive correlation between the teacher and educational output. For example, Abraham and Morrison (2006) conducted a research to determine the key determinant of school effectiveness. The results of their study indicate that teachers were the key factors affecting the internal efficiency of the any schools. Similarly, another study was carried out in Nigerian secondary schools by Oshodi (1991) to find out whether there is a correlation between utilization of different educational resources and students’ academic achievement. The findings of his research revealed that the most important factor affecting students’ academic achievement was the teachers’ quality.

In a similar study conducted by Bali and Alvarez (2003) it was found that the level of skills that teachers possess affect student’s performance and they therefore concluded that students who attend schools with highly skilled teachers perform better than those who attend less skilled teachers. Finally, in a study carried out to find out the problems of teacher staffing in Nigerian secondary schools, Ijaiya (1998) found that secondary schools were experiencing a serious shortage of teachers and he made a conclusion that lack of teachers was the main cause of poor performance and poor education quality in Nigerian secondary schools.

a) Teacher’s academic qualification

Research studies were conducted in secondary schools to investigate the impact of teacher’s academic qualification on students’ academic achievement and their findings were contradictory. Some found correlation, others found no correlation. For instance, Aduwa (2004), conducted a research to find out the key determinants of students’ achievement. The findings of this research revealed in addition to “student’s cognitive abilities, self-esteem, self-concept, home environment, study habits and motivation, teacher’s qualification has a significant influence on students’ academic performance”.

However, in another similar study Iyamu (2005) found that cognitive abilities, home environment, motivation, and self-concept of students cannot have a significant influence on students’ performance if they are not taught by competent teachers. Likewise, in their study, Ehrenberg and Brewer (1995) found that highly qualified teachers teach better than less qualified teachers and they concluded that students taught by highly qualified teachers benefit more than those taught by those with low academic skills. This was reiterated by Ferguson (1991) who asserted that teachers’ quality of teaching and assignments highly correlate with his/her academic qualification in the subjects he/she teaches. This was partly contradicted by Darling-Hammond (2000) who found that in lower classes students benefit much from less qualified and experienced teachers than highly qualified and experienced teachers. Specifically Darling-Hammond found these students learn more from Bachelor’s degree holders than Master’s degree holders.

Although most of the results of the studies conducted on the relationship between teacher’s qualification and students’ performance have revealed that students taught by highly qualified teachers perform better than those taught by less qualified teachers, teachers’ academic qualification in Rwanda is still low. For instance, while 67.5% of all secondary school teachers were qualified in Rwanda, in 2008, the percentage of under-qualified secondary school teachers was 82% and 50% in Nyarugenge and Nyamasheke districts respectively (MINEDUC, 2013, World Bank, MINEDUC, and UNESCO BREDA, 2011).

b) Teacher’s professional training

Teacher professional training is another important variable that determine students performance. For example, in the study conducted by Monk (1994) to find out whether a relationship exists between teacher’s professional training and students’ academic achievement, it was found that teacher’s professional training has a positive impact on the academic success of students he/she teaches. He therefore confirmed that the number of pedagogical courses teacher has taken in pedagogy positively affect students performance. He therefore recommends that teachers should be

professionally prepared to enhance the education quality. This idea was corroborated by Rockooff (2004) who asserts that the qualification and experience of a teacher have positive effects on his/her teaching as well as on students' academic performance.

The statement of Rockooff does not differ from the view of Hanushek, Rivkin and Kain (2005) who state that the qualification and the teaching experience of a teacher significantly affect the performance of students. Likewise, in their previous research aimed at decomposing the factors contributing to students achievement, Hanushek, Rivkin and Kain (1998) found that in addition to school factors, teacher related factors contribute to student academic success. It is in this perspective that they recommended that teacher training should be examined to raise their future productivity. In support of this, Ijaiya (1998) stated that improving the quality of the teaching force in schools is seen as the key to raising student achievement.

The research findings on teacher education/training have shown that there is a relationship between teacher education/training and the performance of students. However, student-trained teacher ratio still needs attention in Rwanda. The percentage of secondary school qualified teachers was 67.5% in 2012 and the national student-qualified teacher ratio 34:1 (MINEDUC, 2013). This implies that teacher education in Rwanda needs to be emphasized.

c) Teacher's Experience

As far as teacher experience is concerned, several researches have been conducted to establish the relationship between teacher experience and students' academic achievement. The findings of these research had shown either correlation or no correlation. For instance, while Clotfelter, Helen and Jacob (2007) find strong positive effects of teacher experience on students achievement, Aaronson, Barrow and William (2007) and Betts, Andrew and Lorien (2003) found no significant correlation between teacher experience and student achievement. In their study on teacher characteristics and students' performance, Greenwald, Hedges, and Laine (1996) found that there is a positive relationship between some teacher characteristics (experience) and outcomes. A similar study was carried out by Krueger (1999) and the results showed that there is a positive impact of having highly experienced teachers on students' achievement. Corroborating this, Hanushek, Kain and Rivkin (1998) in their study found that students taught by teachers with two years of teaching experience perform better than their counterparts taught by teachers with no experience. However they found that having more than two years of teaching experience does not affect students' performance.

As the aforementioned research findings have shown positive association of teacher experience with students' academic achievement, it is the role of educational institutions to retain experienced teachers to deliver quality education. In support of this, Owolabi (2007) emphasizes that the more experienced teachers as well as the retiring teachers who still want to continue teaching should be retained so that they can improve the quality of their countries educational system through their wealth of experience.

The aforementioned literatures showed a positive correlation between teacher experience and student achievement. However, according to the report of the World Bank, MINEDUC, and UNESCO BRED (2011), the average experience secondary school teachers in Nyamasheke and Nyarugenge districts was respectively 6.5 years and 11 years in 2011 and students performance in S6NE was different in both districts.

d) Teaching load

Teacher workload include instructional time, supervision time, lesson preparation time, assessment time, time spent on management meetings and participation in extracurricular activities (Dibbon, 2004). According to Trethaway (2001) increased workload adversely affects the quality of their classroom teaching and lesson preparation, and adversely impact on extracurricular activities. It also adversely affects their emotional well being, their family life, relationship with friends and leisure activities. Finally it affects their commitment to job (60% said they would leave teaching when opportunity arose).

In their study on teacher recruitment and retention, Dibbon and Sheppard (2001) found that almost 50% of the new teachers were giving consideration to leaving their position because of reasons related to heavy workload, a stressful teaching environment and lack of opportunities for advancement and pay increases. In his report on the impact of workload on teachers and students, Dibbon (2004), states that the failure to address the issues associated with a high workload will result in lower levels of teacher satisfaction and higher levels of attrition; which will have impact on the students performance. Similarly Fullan (2001) states that high teaching load leads to teachers' stress and job dissatisfaction which in long run impact on students' academic achievement.

From the aforementioned literatures, teaching load significantly influences teachers' motivation, teaching practices, and job satisfaction; which in long run affect students' academic achievement. However, although teachers were more overloaded in Nyarugenge district (23 periods per week) than in Nyamasheke district (18 periods per week), students performance in the two districts varied over the years (World Bank, MINEDUC, & UNESCO BRED, 2011).

Statement of the problem

In education production function process, the quality of educational output is a function of the quality and quantity of educational inputs given the constraints imposed by the underlying technical process. This implies the quality of educational output highly depends on the quality and quantity of inputs put in education system. One of the key inputs in education is the teacher characteristics. This means that the teacher is a key factor determining the amount and quality of output in public secondary schools in Nyamasheke and Nyarugenge districts. However, reports have revealed that the quality of educational output in the two districts is not good (Mineduc, 2010, 2013, and Unicef, 2013). Would it be the results of the quality of teachers in those schools? This study has therefore sought to find out whether correlation exists between teacher characteristics and school performance in public secondary schools in Nyamasheke and Nyarugenge districts. The ability to do so will help policy to improve the performance of public secondary schools in the two districts.

Research Purpose

The purpose of this study was to determine the degree to which a relationship exists between teacher characteristics and school performance in public secondary schools in Nyamasheke and Nyarugenge districts.

Research Objectives

The study sought to achieve the following specific objectives:

1. To describe teacher characteristics in public secondary schools in Nyarugenge and Nyamasheke districts.
2. To establish the degree to which each teacher characteristic correlates with school school performance in public secondary schools in Nyarugenge and Nyamasheke districts.
3. Find out strategies managers adopted to enhance school performance in public secondary schools in Nyarugenge and Nyamasheke districts.

Theoretical framework

This study was premised on the theory of Education Production Function (EPF). According to Hanushek (1979) in production function, the amount of output depends on the amount of inputs given the constraints imposed by the underlying technical process. In the same vein, Pritchett and Filmer (1997) adds that the production function is a theoretical construct which gives mathematical

expression to the production relationship that defines the maximum output to be produced from different combinations of given sets of inputs. The production function of any firm is therefore expressed as: $Q=f(X_1, X_2, X_3, \dots, X_n)$ Where Q = the quantity of output and $X_1, X_2, X_3, \dots, X_n$ are the quantities of factor inputs (such as capital, labour, land or raw materials). To this end, the education production function for public secondary schools in Nyamasheke and Nyarugenge districts was expressed as: $A=f(X_1, X_2, X_3, X_4, \dots)$ where A = academic achievement, X_1 = Teachers' academic qualification, X_2 = Teachers' professional training, X_3 = Teacher's experience, X_4 = Teaching load.

2. METHODOLOGY

The study adopted a correlation research design and it was conducted in Nyamasheke and Nyarugenge districts. Although there have been variations in performance in the two districts, the former has been chosen because of its good performance and the latter because of its poor performance over several years. The target population involved 70 head teachers of the 70 public secondary schools in Nyamasheke and Nyarugenge districts and 2 district education officers. A sample of 21 head teachers and 2 district education officers was used. Head teachers provided information on the characteristics of teachers. Their information was complemented by the information collected through document review schedule. Stratified sampling, simple random sampling and purposive sampling techniques were used to select this sample. Questionnaires for head teachers, document review schedule, and interview schedule with district education officers were used to collect relevant data. Expert judgment and test-retest techniques were used to test instruments' validity and reliability respectively. Descriptive statistics such as frequencies, and percentages were used to describe teacher characteristics and these were regressed with the school mean performance which was obtained by taking the total school scores divided by the number of exam takers. Answers from interview were thematized. The findings were presented verbatim and in tables. To conduct this study, the researcher sought permission from the Ministry of Education, Nyarugenge and Nyamasheke districts. A written informed consent was also sought before collecting information from respondents. The principles of anonymity and confidentiality were highly respected and plagiarism was avoided throughout this study.

3. Results

3.1. Description of teacher characteristics in public secondary schools

The first objective of this study was to describe the characteristics of teachers in schools under investigation.

This subsection presents the findings on different teacher characteristics.

a) Teachers’ academic qualification

Academic qualification is hereby referred to as the level of education a teacher has attained: high school, diploma, bachelors, or masters. This is believed to influence the way a teacher teaches. Table 1 gives an overview of teachers’ qualification in the districts under investigation.

Table 1: Proportion of teacher by academic qualification

Qualification	Frequency	Percentage
S6 leaving certificate	84	17.83%
Diploma	94	19.96%
Bachelor’s degree	288	61.15%
Master’s degree	5	1.06%
Others	0	0%
Total	471	100%

Source: Primary data

Table 1 reveals that 17.83% of teachers in public secondary schools in Nyamasheke and Nyarugenge districts hold a S6 leaving certificate, meaning that as per the guidelines of the Ministry of Education (2010) they are not qualified to teach at secondary level. Table 1 also indicates that 19.96% and 61.15% of public secondary school teachers in the two districts hold diploma and bachelor’s degree respectively. Finally, table 1 indicates that only 1.06% of teachers in have a master’s degree.

b) Teachers’ professional training

Teachers’ quality is not only measured in terms of academic qualification but their professional training is also significant. Professional training refers to whether a teacher has undergone pedagogical training or not. This was of interest for this study because in Rwanda as well as in other developing countries, a number of teachers are teaching and yet they have not underdone any pedagogical course. Table 2 presents the summary of teachers by their professional training.

Table 2: Proportion of teachers by professional training

Type of degree	Frequency	Percentage
Bed	48	16.38%
B.A. with Education	66	22.52%
Bsc. With Education	72	24.57%
B.A.	39	13.31%
Bsc.	63	21.50%
Med	1	0.34%
MA, MBA	4	1.37%
Total	293	100%

Source: Primary data

Table 2 shows that the majority (63.47%) of teachers with bachelor’s degree has undergone a pedagogical course and hence they are qualified to teach. Of these teachers, 16.38% hold a bachelor of Education (BE.), 22.52% hold a bachelor of arts with education (B.A. with Ed.) and 24.57% are holders of bachelor of science with education (BSc. with Ed.). Table 2 further shows that more than a third (34.81%) of public secondary school teachers in Nyamasheke and Nyarugenge Districts have not undergone any pedagogical training. Specifically, 13.31% of teachers have a bachelor of arts and 21.5% have a bachelor of science. Finally, table 2 indicates that only 0.34% and 1.37% of teachers in the two districts have a master of education degree and Master of Arts, science or business administration respectively.

c) Teachers’ teaching experience

The teachers’ teaching experience is another key characteristic. This is so because teacher’s experience is assumed to increase his/her professionalism. Table 3 gives an overview of teachers’ experience in public secondary schools in Nyamasheke and Nyarugenge districts. .

Table 3: Proportion of teachers by experience

Experience	Frequency	Percentage
0-3 years	207	43.95%
4-6 years	139	29.51%
7-9 years	67	14.23%
10-12 years	23	4.88%
13-above	35	7.43%
Total	471	100%

Source: Primary data

The findings in table 3 show that nearly a half (43.95%) of teachers in the two districts has a teaching experience of less than three years. Table 3 further indicates that 29.51% and 14.23% of public secondary school teachers in the two districts have a teaching experience of between 4-6 years and 7-9 years respectively. Finally, table 3 reveals that only 4.88% and 7.43% of secondary schools teachers in the two districts have a teaching experience of 10-12 years and above 13 years respectively. This implies that teacher retention still needs a special attention.

d) Teaching load

Another key characteristic of teacher is the number of hours he/she teaches. This is because heavy workload is assumed to have a negative impact on teacher’s professionalism. Table 4 highlights the workload of teachers in schools under investigation.

Table 4: Proportion of teachers by teaching load

Teaching hours	Frequency	Percentage
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Less than 18	0	0%
19-22	1	0.21%
23-27	45	9.55%
28-32	412	87.47%
33-above	13	2.76%
Total	471	100%

Source: Primary data

Table 4 indicates that the big majority (87.47%) of teachers in schools under this research have a teaching load of between 28 and 32 hours per week. This teaching load is above the recommended load by the Rwandan Ministry of Education of between 24 and 28 hours per week (MINEDUC, 2010). Table 4 further indicates that only 0.21% and 9.55% of secondary schools teachers in Nyamasheke and Nyarugenge districts teach 19-22 hours and 23-27 hours per week. Finally, table 4 shows that 2.76% of public secondary school teachers in the two districts teach more than 33 hours per week. This implies that teachers in public secondary schools in Nyamasheke and Nyarugenge districts are heavily loaded and this may affect the way they teach.

3. 2. Relationship between characteristics and school performance

Teacher characteristics were correlated with the school mean performance to establish the degree to which a link can be establish between the two variables. Table 5 summarizes the findings the correlation between the two variables.

Table 5: Teacher characteristics and school mean performance

Independent variables	R	R ²	P-value
Teacher's academic qualification	.792	.627	.002*
Teacher professional training	.748	.560	.001*
Teaching experience	.642	.412	.011*
Teaching load	.164	.023	.346

Dependent variable: school mean performance
*p<.05

Table 5 indicates that there is a high positive correlation between teachers' academic qualification and the school performance (R=.792, p<.05). The coefficient of determination (R²=.627) means that teachers' qualification explained 62.6% of the school performance, implying that that schools with well qualified teachers performed better that school with less or unqualified teachers. Table 5 further indicates that teachers' professional training highly correlate with the school performance (R=.748, p<.05). As indicated by the coefficient of determination (R²=.560) indicates that

teachers' professional training accounted for 56% of the variations in the school performance. Table 5 also indicates that the teachers' teaching experience highly correlate with the school performance (R=.642, p<.05). The coefficient of determination (R²=.412) means that teaching experience of teachers accounted for 41.2% of the school mean performance, meaning that schools more experienced teachers perform better than schools with less experienced teachers. Finally, table 5 indicates that there is no significant correlation between teachers' teaching load and school mean performance (R=.164, p>.05) as it accounted for only 2.3% of the school performance.

3.3. Strategies adopted to enhance school performance

From the interview with the District Education Officers (DEO), it was revealed that recruiting qualified teachers, improving their standards of living and retaining qualified teachers who are already in service, and providing more professional in-service trainings are the key strategies adopted to enhance the quality of educational output in the two districts.

4.DISCUSSION

4.1. Description of teacher characteristics in public secondary schools

a) Teachers' academic qualification

The study revealed that only 61.15% of teachers in the two districts have required qualification to teach at secondary school level. This is likely to affect their teaching. This has been voiced by Bali and Alvarez (2003) who stated that the academic qualification of teachers goes hand in hand with their teaching skills and all these affect their students' academic performance. To this end, they confirm that students who study in schools with highly qualified teachers perform better than their counterparts in schools with less qualified teachers. Darling-Hammond (2000) has previously confirmed this by stating that in post primary schools students learn more from teachers with high qualification than from teachers with low qualification. For him, students benefit more from teachers who possess Bachelor's or Master's degree in the subjects they teach than those with diploma or another type of degree.

b) Teachers' professional training

Despite the target of the government of Rwanda of having at least 75% of all secondary school teachers having acquired pedagogical courses by 2015 in order to make them more professional (MINEDUC, 2010), the study revealed that only 63.47% of teachers in schools under investigation have undergone pedagogical courses. To this end, Monk (1994) asserted that students who are taught by teachers who had undertaken pedagogical courses perform better than those taught by teachers who had not taken any pedagogical course. Similarly, Rockooff (2004) later established a link between

teacher's professional training and the way he/she teaches as well as the academic achievement of his/her students. Explaining this, Rockooff states that teachers who have taken coursework in pedagogy are the ones who better know and apply the teaching and learning in classroom.

c) Teachers' teaching experience

The study revealed that almost a half (43.95%) of teachers have a teaching experience of less than three years. According to Owolabi (2007), it is the responsibility of the government to retain more experienced teachers so that they can use their experience and knowledge to improve education system. Owolabi goes on to say that teacher's experience increases his/her confidence, mastery of the content, and the way of applying pedagogical principles for effective teaching. This has been confirmed by different researchers. For example, in the research conducted by Krueger (1999) students' academic performance was linked with teaching experience. Similarly, Hanushek, Rivkin and Kain (1998), found that students who are taught by more experienced teachers perform better than those taught by less experienced teachers. And finally, in their research Clotfelter, Helen and Jacob (2007) found that the performance of students taught by more experienced teachers was better than the performance of their counterparts who were taught by less experienced teachers.

d) Teaching load

The study revealed that the grand majority (87.47%) of teachers in the two districts are heavily loaded as they teach between 28 and 32 hours per week. According to Trethaway (2001) a heavy workload negatively affects the quality of lesson preparation and the actual classroom teaching as well as the extracurricular activities which are of great importance for effective teaching. Furthermore, Trethaway emphasizes that increased workload negatively affects the emotional well-being of teachers, their family life, relationship with friends as well as their leisure activities. This was equally voiced by Fullan (2001) who confirmed that in addition to low level of job satisfaction, high teaching load causes stress and higher levels of attrition within education system. And finally, Dibbon (2004) emphasizes that heavy workload leads to teachers' job dissatisfaction.

4.2. Relationship between characteristics and school performance

The second objective of the study was to find out the extent to which each teacher characteristic correlate with school performance. The study revealed that teachers' academic qualification, professional training, and teaching experience highly correlate with school performance. This finding is in agreement with the findings of Iyamu (2005), Darlinng-Hammond (2000), Krueger (1999), and Monk (1994) who found that in addition teaching materials, students' family background,

motivation to learn, and students' cognitive abilities, students' exposure to well qualified, professional and experienced teachers positively affect the overall school performance.

4.3. Strategies adopted to enhance school performance

The third and last objective of this study was to find out the strategies school managers have adopted to enhance school performance in the two districts. The strategies adopted include: recruitment of qualified teachers, retaining qualified and experienced teachers, and providing more professional in-service trainings. These strategies go hand in hand with the recommendation of UNESCO (2014) which emphasizes that one of the means to end the 'global learning crisis' is to ensure equitable access to well-trained teachers and to ensure there is attraction and retention of highly qualified, experienced and committed teachers. For all these to materialize, UNESCO calls for governments to improve teacher education, provide the right incentives to teachers and ensure good governance of teachers.

5. CONCLUSION AND RECOMMENDATIONS

Based on the findings that in public secondary schools in Nyamasheke and Nyarugenge districts, only 61.15% of teachers have a bachelor's degree, among them only 63.81% have taken a pedagogical course, and only 56.05% have an experience of more than three years, it is logical to conclude and generalize that teachers' characteristics are still below the required standards. Furthermore, from the findings that teacher qualification, teacher professional training and teacher experience highly correlate with school mean performance in S6NE and each can explain between 41 and 63% of the variations in school mean performance, it is logical to conclude and generalize that the school mean performance in S6NE highly depends on the quality of teachers. Therefore, it was recommended that the government and all other education stakeholders should invest more money in training more teachers, retain more experienced teachers and provide teachers who are already in-service with more trainings to enhance their professionalism.

REFERENCES

- Aaronson, D., Barrow, L., & William S. (2007). Teachers and Student Achievement in the Chicago Public High Schools. *Journal of Labor Economics*, 25, 95–135.
- Abraham, K. & Morrison, K. (2006). Measuring and targeting internal conditions for school effectiveness in the Free State of South Africa. *Educational Management*,

- Administration and Leadership, 34 (1), 30-47. Retrieved from www.education.ufl.edu
- Aduwa, S.E. (2004). Dynamizing the instructional system: An inquiry for effective childhood education in Nigeria. *Nigerian Journal of Curriculum Studies*, 11(2), 239-245. Retrieved from www.education.ufl.edu
- Bakhda, S. (2004). *Management and Evaluation of Schools*. Nairobi. Oxford University Press East Africa Ltd.
- Bali, V. A. & Alvarez, M.R. (2003). Schools and educational outcomes: what causes the "race gap" in student test scores? *Social Science Quarterly*, 84(3) 485-508.
- Barbara, B., Alain, M., & Ramahatra, R. (2003). *Achieving Universal Primary Education by 2015: A Chance for Every Child*. Washington D.C. World Bank.
- Betts, J.R., Andrew, C.Z., & Lorien, A.R. (2003). *Determinants of Students Achievement: New Evidence from San Diego*. San Diego: Public Policy Institute of California.
- Chall, J.S. & Popp, H. M. (1990). *Chall – Popp Phonics: Level B (Teacher's Edition)*, Continental Press.
- Clotfelter, C.T., Helen F.L. & Jacob L. V. (2007). How and Why Do Teacher Credentials Matter for Student Achievement? *Working Paper* No. 2. Washington, DC: CALDER.
- Darling – Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Educational Policy Analysis Archives*, 8 (1).
- Dibbon D. (2004). *It's About Time!! A Report on the Impact of Workload on Teachers and students*. Memorial University of Newfoundland. Retrieved from www.nlca.nl.ca
- Ehrenberg, R. G., & Brewer, D.J. (1995). Did teachers' verbal ability and race matter in the 1960s? Coleman Revisited. *Economics of Education Review*, 14(1), 1–21.
- Ekwesili, O. (2006). *Our Educational System*. Paper presented at the Presidential Forum on Education. Abuja: Retrieved from <http://eric.ed.gov>
- Ferguson, R. F.(1991). Paying for public education: New evidence on how and why money matters. *Harvard Journal on Legislation*, 28(2), 465–499
- Fullan, M. (2001). *The new meaning of educational change*. New York: Teacher College Press.
- Greenwald, R., Hedges, L.V. & Laine, R.D. (1996), The Effect of School Resources on Student Achievement, *Review of Educational Research*, 66(3), 361-396.
- Guga, A (1998). *The teacher, teacher education and national development* . Paper presented at the conference facing the challenges of development in Nigeria in the 21st century. Organized by the school of Arts and Social Sciences, Federal College of Education, Katsina. Retrieved from <http://fcekatsinaonline.edu.ng>
- Hanushek, E.A, Rivkin, S.G., & Kain, J.F. (2005). Teachers, Schools and Academic Achievement, *Econometrica* 73 (2), 417-458.
- Hanushek, E.A. (1979). Conceptual and Empirical Issues in the Estimation of Educational Production Functions. *The Journal of Human Resources*, 14 (3), 351-388.
- Hanushek, E.A. (2007). *Education Production Functions*. Hoover Institution, Stanford University.
- Hanushek, E.A., Rivkin, S.G. & Kain, J.F. (1998), Teachers, Schools, and Academic Achievement, *NBER Working Paper* No. 6691. Retrieved from www.nber.org
- ICAI (2012). *Report for DFID's Education Programmes in Three East African Countries*. Retrieved from www.dfid.gov.uk
- Ijaiya, N.Y.S. (1998). An investigation into the problems of teachers' management in Kwara State Secondary Schools. *Studies in Educational Planning and Administration*, 1(2), 49–58.
- Iyamu, E.O.S. (2005). Parents' and teachers' perception of selection as a factor of quality in the curriculum process in Nigeria. *International Education Journal*, 6(1) 96–103.
- Krueger, A.B. (1999), Experimental Estimates of Education Production Functions, *Quarterly Journal of Economics*, 114(2), 497-532
- Lassa, P. (2000). Teaching Production: A focus on Nigeria. *The state of education in Nigeria*. Abuja: UNESCO.
- MINEDUC (2010). *Education Sector Strategic Plan 2010-2015*. Kigali: MINEDUC. Retrieved from www.MINEDUC.gov.rw

- MINEDUC (2013). *2012 Education Statistics Yearbook*. Kigali: MINEDUC. Retrieved from www.MINEDUC.gov.rw
- Monk, D.H. (1994), Subject Area Preparation of Secondary Mathematics and Science Teachers and Student Achievement, *Economics of Education Review*, 13(2), 125-145.
- Murnane, R. (1975). *The impact of school resources on the learning of inner city children*. Cambridge Mass: Ballinger Publishing Co.
- Oshodi A.O. (1991). *Resource utilization and students academic performance in kwara.State secondary schools*. Unpublished M.Ed. Thesis, University of Ilorin.
- Owolabi,S.O. (2007). *Teacher education in sub- Saharan Africa: Policies and practices*. Paper presented at the Development of Teacher Education in Africa Conference. Makerere University, Kampala, Uganda. August 4-6. Retrieved from <http://mak.ac.ug/>
- Pritchett, L. & Filmer, D. (1997). What Education Production Really Show: A Positive Theory of Education Expenditure.
- Rockoff, J.E. (2004). The Impact of Individual Teachers on Student Achievement: Evidence from Panel Data, *American Economic Review* 94(2), 247-252.
- Rodgers, T.S. (2001). Language teaching methodology. *Online Resources: Digest*. September Issue Paper. Retrieved from www.cal.org
- Stuart, M. (2004). Getting ready for reading: A follow-up study of inner city second language learners at the end of key stage. *British Journal of Educational Psychology*, 74(1), 15–36.
- Trethaway R. (2001). *Addressing Teacher and Management Workload in Secondary Schools*. New Zealand Ministry of Education. Wellington: Ministry of Education. Retrieved from www.minedu.govt.nz
- UNESCO (2014). *Teaching and Learning: Achieving Quality for All. EFA Global Monitoring Report 2013/2014*. Paris:UNESCO. Retrieved on www.UNESCO.org
- UNICEF (2013). *UNICEF Annual Report for Rwanda 2012*. Kigali:UNICEF. Retrieved from www.UNICEF.org
- Woodhall M. (2004). *Cost-Benefit Analysis in Educational Planning*. 4th Edition, Paris: UNESCO, IIEP
- World Bank, MINEDUC, & UNESCO BREDIA (2011). *Toward Quality Enhancement and Achievement of Universal Nine Year Basic Education: An Education System in Transition; A Nation in Transition*. Washington, DC: The International Bank for Reconstruction and Development/The World Bank. Retrieved from www.worldbank.org