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Teachers' Academic Collaboration and Students' Academic Performance in Public Secondary Schools in Rwanda

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Abstract

The collaboration of teachers in the performance of academic activities promotes the students' academic performance in secondary schools. The purpose of this paper was to investigate the influence of teachers' academic collaboration on student academic performance in selected schools of Kirehe-Rwanda. The study was guided by descriptive survey research design. The target population was 138 teachers and 10 head teachers of secondary schools in Kirehe District corresponding to the sample size of 108 using Solvin's formula. Questionnaires and documentation review were used as the research instruments in data collection. The findings indicated that the variables of academic performance such as improved grades in national exams, improvement in class participation, improvement in Homework competition and improved attendance can be affected by the changes in the independent variable discussion based on pedagogical issues, collaborate teaching, internal seminars, students monitoring, teacher monitoring and team investigation at 93.3%. This also implies that the remaining 6.7% can be affected by other variables. However, the study also showed that there is a statistical relationship between teachers' academic collaboration and students performance as $r = .108$ and $P\text{-value} = .000 < .05$. The study recommends that people involved in education sector in Kirehe are recommended to work collaboratively in order to enhance teachers' collaboration through various activities such as trainings, workshops, in service trainings, mentorship meetings and others.

Keywords: Academic Collaboration, Students' Academic Performance, Public Secondary Schools & Rwanda.

1.0 Introduction

The effective provision of quality education needs greater commitment and teamwork so as to put together the available skills and resources (UNESCO, 2017). Therefore, the effective collaboration between teaching staff done in terms of academic indicates the greater influence on the academic performance of students.

Globally, the collaboration of teachers has been fruitful in the carrier of education for several years, especially in United States of America (Bagley 2008). The collaboration of teacher should be used along with teacher and students' academic collaboration in order to create learning environment in which a student is placed at the center of each and every activity. The global commitments on education take into consideration, the need to educate all citizens. The Millennium Development Goals (MDGs) and Sustainable Development Goals (SGDs) promote the education for all in order to create a knowledge based economy earth by 2030 (UNESCO, 2017).

In Africa, it was found that teachers' academic collaboration plays a great role in students' academic performance as it builds academic capacity of teachers though various shared activities (Goddard, 2010). Adequate teachers' academic collaboration conditions provide lifelong enterprises that can stimulate the process of finding out the academic performance (Williams, 2010). However, to determine performance of students in secondary schools, performance test should be conducted in order to determine their qualitative and quantitative academic performance which may be considered as the observable and measurable attitude of students in particular situation, for instance the academic performance of students in social studies are observable and measurable attitude of students at any point in time during a course (Agula, 2009).

In Rwanda, the ultimate goal for education output from secondary schools makes children, students' disciplinary problems and teaching methods, the primordial target to achieve academic goals (MINEDUC, 2017). The effective teachers' sharing of information and collaboration, enhance teachers' knowledge and experience increase and academic performance is fostered. (Williams, 2010).

1.1 Problem Statement

Education has two main ingredients which are educational inputs and outputs. The educational inputs are composed of what a student is equipped with in order to be competent while the educational outputs are students' academic performance and outcomes. The inputs and outputs elements of education work together and influence each other. This is why effects of inputs on outputs have to be examined in order to assess how teachers' academic collaboration affects students' academic performance (Flowers, 2015). Teachers' collaboration displays a great influence on students' academic achievement as an essential and vital input in education process. Forsythe (2014), says that the main responsibility of school leaders and education providers is to equip students with competence that would lead to educational objectives achievement in terms of results gotten from the national examinations.

In Rwanda, student academic performance in examination was used as the basis for judging a students' ability and also a means of selection for education advancement and employment prospects. Over the years, disparities were observed in the student academic performance of examinations at different levels of the education system, with some students indicated poor

academic performance. MINEDUC (2010), reports that senior three national results from six public secondary schools sampled randomly shows that there was a great decline in students' academic achievement testified by marks obtained in national examinations. Forsythe(2014), revealed that under poor teachers' academic collaboration, students' academic performance gets affected; this can affect students and causes them to leave schools without being equipped with necessary knowledge and competency that that would enable them to be competent at the labor market. This study, sought to find out the influences of teachers' academic collaboration and student academic performance in Rwanda national secondary school in the Kirehe District.

1.2 Objective of the paper

The objective was to analyze the influence of teachers' academic collaboration on students' academic performance in Kirehe District-Rwanda.

2.0 Literature Review

2.1. Teachers' Academic Collaboration

According to Obanya (2007), Teachers' academic collaboration takes place when all teachers in a given school are working together in order to increase their students' academic achievement. Every school that wants its students to pass well should focus on teachers' academic collaboration.

It grows in socio-political environment and there could be no education without society. Olutola (2008), states that effective collaboration among teachers is an essential ingredients that every school which wishes to booster its' academic performance should cherish. Teachers' collaboration take into consideration students' disciplinary problems, systematic pedagogical discussions, students' assessments and exchange of information.

Osokoya (2009), postulated that secondary school conditions which are instructional spaces, administrative, circulation places, conveniences and accessories in stimulating teaching and learning process (Pruett, 2010). According to Rohana (2009), secondary school as students' disciplinary problems, systematic pedagogical discussions, students' assessments and exchange of information.

2.1.1 Relevance of Teachers' Academic Collaboration

According to Sariola (2011), teachers' academic collaboration occurs well when teachers conduct teaching activities together by sharing resources, knowledge and others in order to help their students. Tinto, (2007) says that the teachers' collaboration is an important step in changing student's behavior and lowering risks for the best students' management. Michael (2010) discusses that students learn better in conducive environment by well-equipped teachers. Teachers gain academic equipment through collaborating with other teachers in surroundings. Tshui & Cai (2011), found that effective and efficient collaboration of teachers plays a considerable role in students' behavior, attitudes and academic achievement. Positive teachers' academic collaboration is relevant for students to attain their educational goals to meet their instructional objectives as indicated by Usha (2007) who argued that the students' disciplinary problems, systematic pedagogical discussions, students' assessments and exchange of information.

Adequate secondary teachers' collaboration influences academic performance and motivation to acquire knowledge. School condition evidences the ideas, assumptions, values and practices that

determine their cultural positions for desired behavior (Sariola, 2011). Secondary school condition affect the learning and teaching processes through safety and adequate correlation between teaching and learning conditions. Therefore, appropriate teachers' collaboration argued that students, teachers and parents are feeling favorable with the school. Finally, the contributions of different authorities on the relevance of learning environment, evidenced a strongly correlation and contended that appropriate secondary teachers' factors encourage children to study, their achievement, secondary schools' success, risk management and development for young people and enhance students retention rate (Tshui & Cai, 2011).

2.2. Academic Performance

Academic performance takes into consideration the following elements: the capability to learn and remember evidences and information regarding what students have learnt, ability to learn adequately and look evidences and course contents fitting together and form larger patterns of skills and knowledge and being able to think for themselves regarding the facts and to be able to exchange and disseminate acquired information (Alabi, 2011). According to Asiabaka (2008), academic performance is the degree of success accomplished by students through a set of resources from motivational to discipline factors. Furthermore, Adediwura and Tayo (2007), contended that academic performance is referred to the accomplishment of target and studies by students but influenced by different elements that stimulate the degree of adequacy of students' educational success.

However, according Cohen (2006), the recent evidences on the amelioration of education success indicates the existence of three environment factors that affect the relationship of academic success and students learning conditions. These influences according to the information include adequate quality of parents and guardians, appropriate children-care and attainment of the best grade at classroom level. Dunn (2005), academic performance is the ability of students to attain the best grade and standard test scores in secondary school course content embedded with the curriculum.

2.2.1 How to Evaluate Academic Performance

Evaluation serves as the roots of encouraging students learning. Students are encouraged to learn more seriously when they know that their learning was evaluated and when they realize that their efforts and achievements are being recognized. Elsevier (2010), asserted that evaluation is concerned more fundamentally with deciding on the value or worthwhile of a learning process as well as the effectiveness with which it has been executed. First is the attainment of the students in comparison with the philosophy and objectives of education they are receiving.

The second is how well the curriculum goals are achieved for the level of education. Therefore, evaluation is the procedure of examining how instructional goals are accomplished by students in secondary schools. Consequently, examination results and teachers' judgment are used to categorize or classify students. Irreversibly decisions are made regarding the students' worth and his future in the educational system. By this system of categorizing students, some are made to feel that they are deficient, bad and undesirable, while others feel that they are able, good and desirable (UNESCO, 2011).

Wafula (2010), described evaluation as the collection and use of information as an important element for rational choice with regards to curriculum which need to be improved, modified or terminated as the case may be. It is a quality control exercise to ensure that resources are used

maximally. However, various assessment or measurement tools and techniques may be used in evaluating teaching-learning process as well as the outcomes associated with it. Fafunwa (2010), identified instruments to be used in evaluating teaching learning process as test, observation, project, questionnaire, interview, checklist and socio-metrist technique. Fielding (2010), says that tests and exams are vital tools in measuring educational achievements.

The process of examining students' success when they are meeting with several questions, obstacles, problems and impediments with the purpose to acquire skills, how there are able to use or adequate of experience and knowledge she or he has acquired (Liu & Zumbo, 2006). He stated that evaluating the education achievement of predetermined objectives is done through different stages for different reasons. Louis (2012), advanced that students' performance can be measured through administrating achievement test, analyzing stated testing results, use informal surveys to measure academic achievement and look at grade reports.

2.3 Teachers' Academic Collaboration and Students' Academic Performance in Rwanda

Osokoya (2009), conducted a study on education for all in Nigeria, noted that availability of teaching materials contribute a lot to children's academic success. Another research conducted by on western children in Kenya by Wanjobi (2011), shows that the availability of rules and regulations were a protective factor in term of academic performance. Experience shown that a high rate of indiscipline in secondary schools lead to poor performance in secondary leaving exams (Elsevier, 2010).

Study conducted by Isaac Akyeampong (2009), titled teachers' collaboration and secondary school effectiveness in Ghana's population for the research was made up of all teaching staff and head teachers of public secondary school settings in south western Ghana with a sample of 1200 members of teaching staff and 60 head teachers adopting different stage, simple and stratified random sampling technique techniques. Findings demonstrated a positive correlation between teachers' factor sand school effectiveness.

Going by the findings from the above study, it could be seen that the present study, just like the former, seeks to assess the role of educational aspects , learning environment which affects academic success of students die to the former revealed how lightening as an aspect of learning environment influenced the academic performance of students.

Simpson and Weiner (2009), performed the study in Malaysia while the current study is located in Taraba State, Nigeria. One of the important factors for consideration again is that this study unlike the former focused on specific subject area.

2.4 Influence of Teachers' Academic Collaboration

Teachers' academic collaboration is the process by which teachers from one or different institutions work collaboratively in order to achieve a given goal (Friend & Cook, 1992).The process of teachers' academic collaboration has been a concern of different people involved in educational sector for a long time and it has been adopted in different teaching and learning activities such as improvisation, lesson planning, assignment, quizzes, assessments exercises and others.

Hargreaves (2003), indicates that teachers' academic collaboration is not effective until students' academic performance is increased. Hargreaves (2003), also suggested that educational leaders

should work up and down in order to create a conducive and supportive environment that enables effective teachers' academic collaboration.

3.0 Research Methodology

This study used descriptive survey research design to indicate the influence of teachers' academic collaboration on students' academic performance. The target population was 148 people including 138 teachers and 10 school head teachers. Solvin' formula was used to get sample size of 98 teachers and 10 school head teachers that were sampled purposively. Questionnaire and document analysis review were established as data collection instruments. Stratified and purposive samplings were used as sampling techniques. To maintain the validity of the research instrument was maintained by distributing the research instruments to the expert respondents in the area of the study while reliability was maintained by making pilot study that provided reliability of the research instrument and got 83.2% using alpha and considered to be reliable as it was greater than 70% as recommended. The data management of this study was maintained by using SPSS software version 21.

4.0 Findings and discussions

This paper examined the influence of teachers' academic collaboration on students' academic performance in secondary schools of Kirehe District.

This paper described various indicators of teachers' academic collaboration such as pedagogical issues discussions, collaborate teaching, internal seminars, teachers and students monitoring and also team investigation with the indicators that make the students' academic performance like improved students' grades in national examination, class participation and homework completion.

4.1 Ways of Teachers' Academic Collaboration in Secondary Schools of Kirehe District

This paper discussed the ways of teachers' collaboration takes place in high schools of Kirehe District. These include discussing pedagogical issues together, high levels of engagement in higher-level literacy tasks, strong links between teachers that lead them to support one another, use of scaffolding to link instruction to real reading and teachers have shared goals to achieve.

Table 1. The ways that Teachers in Secondary Schools of Kirehe District that used to collaborate

The ways that teachers	Total		
	N	Mean	Sd
-Discussing pedagogical issues together	108	3.2	1.5
-Teachers and head teachers have high levels of engagement in higher-level literacy tasks	108	3.7	1.2
-High levels of engagement in higher-level literacy tasks	108	2.3	1.4
-Use of scaffolding to link instruction to real reading	108	2.1	1.2
-School teachers have shared goals to achieve	108	2.8	1.4

Results demonstrated that mean=3.2, SD=1.5 respondents agreed that the first ways that teachers in Secondary Schools of Kirehe District used to collaborate is discussing pedagogical issues together. The results show also that respondents answered that high levels of engagement in higher-level literacy tasks are very adequate on mean of 3.7 and Sd of 1.2.

Results from respondents on a mean of 2.3 and a standard deviation of 1.4 show that high levels of engagement in higher-level literacy tasks is very adequate in secondary schools. 2.1 mean and 1.2 standard deviation for respondents argue that use of scaffolding to link instruction to real reading is very adequate; finally, 2.8 mean and 1.4 standard deviation for respondents argue that teachers in Kirehe District have shared goals to achieve.

Table 2. Length of Time of working collaboratively in Kirehe district

Length of time of working collaboratively	Total		
	N	Mean	Sd
school working collaboration should be done every day a week	108	2.8	1.7
school working collaboration should be done once a week	108	3.8	1.6
school working collaboration should be done once a month	108	3.5	1.4
school working collaboration should be done once per term	108	3.8	1.5

Length of time of working collaboratively is of great importance for academic performance in secondary schools. Therefore, most of schools insist on a length of time of working collaboratively. This was found by the present study when 2.8 mean and 1.7 standard deviation argue that collaboration which is done every day a week can be effective in their schools. This means that collaboration meeting which is done every day a week could lead to higher level of performance. Respondents on 3.8 of mean and 1.6 standard deviation argue that collaboration which is done once a week can be adequate in their schools; this means that collaboration meeting which is done once a week could lead to higher level of performance. Respondents on 3.5 of mean and 1.4 standard deviation argue that collaboration which is done once a month can be productive in their schools; this means that collaboration meeting which is done once a month could rise their level of academic performance.

In addition, respondents on 3.8 of mean and 1.5 of standard deviation argue that collaboration which is done once per term can be productive in their schools; this means that collaboration meeting which is done once per could boost their level of academic performance. The lack of length of time of working collaboratively due to the lack of time was given as the main causes of low performance problem especially in the first term. The first three weeks of the term are characterized by half empty classes. Teachers are forced to repeat what they had already taught when the students comes back to school. This causes the class to lag behind and causes the shortage of time for collaborative meetings (Osokoya, 2009).

4.2. Academic Performance of Students in Secondary Schools of Kirehe District Rwanda

The academic performance of students in secondary schools located in Kirehe District-Rwanda passes national examinations. Therefore, grades obtained by students in lower secondary leaving examination in the previous five years were established. In this regards, special emphasis saw the number in percentages of students who were promoted from secondary schools to the secondary schools of excellence (boarding schools).

Table 3. Previous National Examination Results of Sampled Secondary Schools from 2014 to 2018 (N=46)

S3-RNLEs	2014	2015	2016	2017	2018
Division I	65	69	92	139	151
Division II	623	681	710	812	918
Division III	1178	1184	1280	1394	1472
Division IV	1174	1210	1289	1410	1498
Division VI	3046	3148	3217	3284	3310
Division U	3491	3510	3631	3654	3698

The study established that a trend of students in Division I in the five years was between 65 to 151 students who got places in boarding schools. By calculating the average mean score for each school for the last five years, the study found out that 4 schools attained a mean score for Division I; 8 schools were within the range of Division II and 35 schools got Division III. A great proportion were in the Division IV, V and U. Considering a mean score, it was hence logically argued that all the sampled schools attained below average mark. By scrutinizing the results of individual schools, the researcher observed that in the year 2014, 40 schools recorded a remarkable rise while 2 recorded a drop. In 2015, 36 schools improved on their mean score, 1 maintained while 4 recorded a drop. This was attributed to the introduction of the allocation of government subsidies to secondary schools in year 2015 which led to many schools being able to acquire relevant teaching and learning resources as years went by, hence improving performance (Ministry of Education, 2018).

4.3. Influence of Teachers' Academic Collaboration on Students' Academic Performance

The regression analysis was established to indicate the influence of teachers' collaboration on students' academic performance in secondary schools located in Kirehe District. The model summary between the indicators of independent and dependent variables was established. In this regards, the following provides responses and a regression coefficient.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.966 ^a	.933	.932	.28417

Predictors: Constant (Discussing on pedagogical issues, Collaborate teaching, Internal seminars, Students monitoring, Teacher monitoring, Team investigation)

- a. Dependent variable: Improved grades in national exams, improvement in class participation, improvement in Homework competition, improved attendance

From Table 4, the value of R Square was 0.933. This means that the variables of academic performance such as improved grades in national exams, improvement in class participation, improvement in Homework competition and improved attendance can be affected by the changes in the independent variable (Discussing on pedagogical issues, collaborate teaching, Internal seminars, Students monitoring, Teacher monitoring, Team investigation) at 93.3%. This also implies that the remaining 6.7% can be affected by other variables.

5.0 Summary of findings

The objective of this paper intended to analyze the influence of teachers' academic collaboration on academic achievement in selected secondary schools in Kirehe District. Therefore, as reflected in chapter four, the influence between variables was established as produced by the linear regression analysis. Each indicator teacher' academic collaboration significantly influences academic performance of the students when they are improved.

6.0 Conclusion

From the present study the extent to which teachers' academic collaboration, improvement of teaching methods, improvement of teacher's ability to manage students and improvement of the teacher's ability to teach subject content influence students' academic performance of the secondary school in Kirehe District has been established. This sub-section discusses teachers' academic collaboration strategies in secondary schools of Kirehe District which have a bearing on students' academic performance. Furthermore, results show that respondents established small group instruction in their schools is very adequate.

7.0 Recommendations

On the basis of findings gotten, the current researcher provided the following recommendations:

7.1 General recommendations

- All people involved in education sector in Kirehe are recommended to work collaboratively in order to enhance teachers' collaboration through various activities such as trainings, workshops, in service trainings, mentorship meetings and others.
- MINEDUC through Rwanda Education Board is recommended to design teaching and learning materials which are adequate and which allow teachers collaboration.

- All stakeholders of education sector are recommended to support teaching and learning activities in Rwanda, as it is the only and one shortcut for achieving the vision of Rwandan government of making Rwanda knowledge based economy.

Suggestion for Further Study

The further study can be conducted to establish the effects of the external factors on the students' academic performance.

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