Professional Teachers' Collaboration and Teachers' Performance In Public Secondary Schools
In Rwanda
A Case of Gicumbi District

Author: Igiraneza Emmanuel (Department, Education, Mount Kigali University)

Co-author: Dr. Andala Opiyo Hesbon PhD (Department, Education, Mount Kenya University)

Abstract

This research study entitled the professional Teachers' Collaboration and teachers' performance in public secondary schools in Rwanda, a case of Gicumbi district. This study is significance to policy-makers, educational planners as it offered the research based solutions of how collaboration should be implemented and reinforced in schools in continuous professional development. The effectiveness of these teaching and learning process largely depends on the choice of the teacher's teaching collaboration. The purpose of this study is to analyze practice through which professional teachers collaborate with one another for effective teacher performance. The objectives that guided this study include assessing the influence of professional collaboration on teachers' performance in public secondary school, determining the level of teachers' performance in public secondary schools, establishing the relationship between professional teachers' collaboration and teachers' performance in public secondary school in Rwanda. The target population of this research was 600, from which sample size of 240 respondents was chosen as the participants of the study who were 170 students from public secondary schools, 62 teachers, 5 head teachers and 3 SEI of 3 sectors of Gicumbi district that were sampled using a purposive sampling technique while teachers and students were selected using simple random sampling . This collection adopted survey research design which used questionnaire instruments for data and interview . Three research questions were answered by respondents in this research with a view of achieving its objectives. Data was presented and analyzed into tables applying descriptive statistics (frequency, percentages and mean) and using 26.0 IBM SPPS Statistical Package for Social Sciences (SPSS) version 26.0. After the data had been analysed, findings were summarized, general conclusions were drawn and recommendations forwarded. The findings were interpreted by using frequencies, percentages, means, and standard deviation in the tables. The results of this study could be significant for education programs. The data was analyzed, on influence of professional collaboration on teachers' performance in public secondary schools, the overall means of results was 4.28 that was between agree (4) and strongly agree (5) which presented that the professional collaboration has the significant influence on teachers' performance in public secondary schools. On the level of teachers' performance in public secondary schools, the overall means of results was 4.217 that was between agree (4) and strongly agree (5) which presented that there was a significance level of teachers' performance in public secondary schools. On the relationship between professional teachers' collaboration and teachers' performance in public secondary schools, the findings analysis resulted that relationship between professional teachers' collaboration and teachers' performance was 0.842 that was indicated that there was a statistically significant relationship between the professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda. It was concluded that there was a statistically significant relationship between the professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda. It recommended that schools' Head Teachers should organize the regulations based on ministry of education policies that strengthen the professional collaboration of teachers.

Key words: *Professional Teachers' Collaboration, Teachers' Performance, Public, Gicumbi District*

i.Introduction

The learning community was first formally proposed in 1995 by American educator Ernest Boyer in his book school learning Community book Basic . It is thought that the creation of a true learning community is the most significant and successful component of education. He used the terms "community" and "learning community" as the foundation for his theory of the professional learning community. Through collaboration, collaborative research, and ongoing practice improvement. The meaning of the term "professional learning community" is evolving into ever-more-different interpretations as a result of the increasing participation of experts and scholars in the field.

From a wider angle, cooperation is a skill that has made it possible for people to accomplish things that would otherwise be unachievable or too challenging. This has been suggested as the primary explanation for our species' success (Melis, 2013). One could argue that the advantages of human cooperation extend to particular forms of it, like teacher collaboration that is ingrained in school cultures. Ultimately, as Schein (1985) contends, a school's culture is a reflection of its students' values and worldview. Research studies on teacher collaboration have repeatedly shown it to be an essential element in the development of the school (Burns et al., 2014). This is because teachers have a direct impact on the lives and academic achievements of their students (Hattie, 2012). In the end, teaching quality—which is arguably influenced by teacher collaboration—will determine student achievement and learning (Blömeke et al., 2016). In India, the teacher serves as both the social architect and the cornerstone of the educational system. How far a school can progress depends on the quality of its instruction. The children of today will be tomorrow's citizens. Nothing can match or eclipse a teacher's exceptional efforts in preparing a student for the future (selvaraj et al., 2018).

Three explanations for comprehending the initiative to support teachers'professional collaboration the have been outlined by scholars in the Chinese contex zang (2011) Educators, school administrators, teachers, and the general public are concerned about the lack of teacher collaboration in. (Zhang et al., 2011). In most developing countries such as those of Africa, secondary teachers used to get teaching skills from the pre-service training or by attending off-the job training out of their workplaces. At school level teachers do not share experiences and best practices effectively where they work in isolation. Then, in their workplace teachers do not grow professionally and their classrooms become islands.

Having non performing teachers in schools is the most important factor t hinder student learning outcomes. According to Leithwood (2004), Of all the elements connected to schools that influence what students learn, school leadership comes in second only to classroom instruction. Additionally, roughly 25% of all school effects can be attributed to the combined (direct and indirect) effects of leadership on student learning. Then teaching is the primary factor in influencing student learning outcomes among other factors.In Zimbabwe, continuing professional development (CPD) is crucial to teaching the four pedagogical domains: lesson planning and sequencing, managing the lesson and students' assessment of their learning, questioning techniques, using pertinent tasks and resources that are in line with cognitive development (Richardson, 1997).A framework for continuous professional development (CPD) has been established in Rwanda by the REB, the Ministry of education, and additional education partners. As a result, educators can always learn new things and develop new abilities (MINEDUC, 2018).Teachers can receive training on pedagogical aspects and material development through the University of Rwanda – College of Education (UR-CE), as well as opportunities to advance their educational status.

The National School-based Mentoring Program (SBMP) was launched in 2012 by REB and UR-CE. At the school level, head teachers are urged to participate in weekly CPDs for the purpose of teacher development (Opfer et.,2007). Mentors worked in schools to train teachers to improve their English skills and teaching practice through promoting collaboration among teachers in continuous professional development(CPD) Or community of practice (Cop). The overall objective was to improve students' learning and teachers' performance.

Caena (2020) states that continuing professional development (CPD) entails gathering and assessing the progress made by teaching staff members in enhancing their professional expertise relative to their prior training. Through frequent CPD sessions, Rwanda hopes to improve the caliber of instruction across a range of subject areas. The CPD point is a medium-sized component of Rwanda's goal to transition to a knowledge-based economy.This ambition is reflected in the government's priority of placing teachers at the center of education at all levels (EDPRS III, Vision 2050) education at all. The main objective of this study was to analyze practices through which professional teachers collaborate with one another for effective teacher performance in public secondary schools in Gicumbi District, Rwanda. It was guided by the following specific objectives:

i.   To assess the influence of professional collaboration on teachers' performance in public secondary schools in Gicumbi District, Rwanda.
ii. To determine the level of teachers' performance in public secondary schools in Gicumbi District, Rwanda.
iii. To establish the relationship between professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda.

ii. Theoretical Framework

The theory that guided our literature is social constructivism theory developed by Psychologist Lev Vygotsky in 1978 and 1981 where knowledge is constructed through interactions of people. According to the sociological theory of knowledge known as social constructivism, individuals create a small culture of shared objects with meaning for one another in groups by jointly constructing knowledge for one another. It encourages team work and collaboration, Set up study group for peer learning.
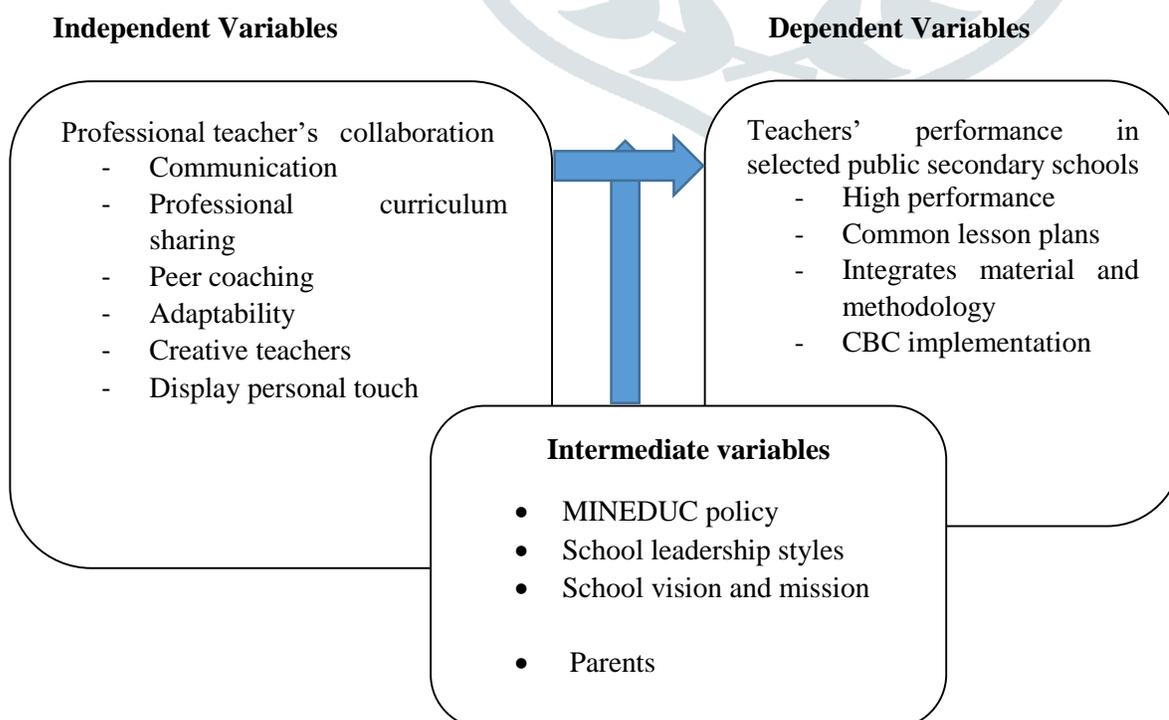
The theory that also guided our literature is Social learning theory is also known as observational learning, modeling or imitation. It was developed by Albert Bandura. It examines how people learn by observing models and imitating the behaviors of others. People learn through observing, modeling and imitating other's behavior, it mainly helps in the acquisition of language and behavior. According to Bandura (1986), much of human learning is not shaped by its consequences; but is more efficiently learned directly from a mode. For example; if students see their friend rewarded for a good work done, they may work hard so that they are also rewarded, A teacher must firstly identify the specific social and effective students learning outcomes. He/she considers important fairness, thoughtfulness; cooperation and consideration as qualities most people agree are important. Webster's dictionary defines knowledge as the state or fact of being familiar with something acquired by association or experience. While periods of quiet reflection and seclusion are beneficial for learning, social interactions such as discussions, debates, group projects, and conversations are also essential.

Certain "radical constructivists" have maintained that knowledge must always be created independently of the teacher's close supervision and that educators should never impart any knowledge to their students. Reciprocal teaching, cooperative learning, and team learning are just a few of the numerous ways that classroom assignments can be assigned. (Peterson., 2006). The social learning theory also is applied to adult learning where teachers as adults learn from one another how things are done rather than leading books only in their isolated classrooms.

Some people prefer to pick up knowledge from others; instead of starting off by trying to do something on their own or looking it up in a book, they would rather ask someone how to do it. A mentor-protégé relationship could develop from such a socially conscious learning theme, but more often than not, it's just peers helping each other get the hang of new tasks or jobs (Haskins, 2006). Teacher collaboration contributes to professional development through social interactions among peers and results in improvements of learning outcomes and also contributes to the change of teacher attitudes towards students' learning outcomes.

iii. Conceptual Framework

The background shows the relationship between shows the independent variable, which was professional teacher collaboration, and dependent variable, which was teachers' performance in public schools. The figure2.1 below presents the independent variable independent variable and dependent variable.

Independent Variables   **Dependent Variables**

Professional teacher's collaboration
- Communication
- Professional curriculum sharing
- Peer coaching
- Adaptability
- Creative teachers
- Display personal touch

Teachers' performance in selected public secondary schools
- High performance
- Common lesson plans
- Integrates material and methodology
- CBC implementation

Intermediate variables
- MINEDUC policy
- School leadership styles
- School vision and mission
- Parents

Source: Researcher, (2024)
Figure 1: Conceptual Framework
The conceptual frame work relates to the independent variables which are teacher collaboration (The collaboration culture, Professional learning community communication , , Peer coaching and creative teachers) to the dependent variable teachers' performance (High performance, Common lesson plans ,Integrates material and methodology ,CBC implementation).In this study the researcher would like to analyze practices through which professional teachers collaborate from one another for effective teacher's performance in public secondary schools. at Gicumbi district, in the northern province of Rwanda. The researcher also will bring in the intermediate variables that are the MINEDUC, Parents, school leadership style, the school mission and vision that will have been help in the teachers 'performance.

iv. Research Methodology

Research Design
A mixed methods research design, combining quantitative and qualitative research methods, is used in this study. In the quantitative part, teachers' performance towards professional collaboration were focused on Teachers' Professional Collaboration (Yılmaz et al , 2020). In the qualitative part, opinions of the teachers about the current state of professional collaboration were determined with a structured interview. In other words, the findings obtained in the quantitative part were tried to be completed and analyzed in depth with the qualitative part. Data, both quantitative and qualitative, were not gathered at the same time. Data were gathered first in quantitative form and then in qualitative form. As a result, the research employed explanatory sequential design (Creswell & Plano-Clark, 2018). The purpose of the study was to analyze practices through which professional teachers collaborate from one another for effective teacher performance in public secondary in Rwanda. One of several mixed approaches, the concurrent embedded strategy served as the main approach for the investigation.

Target Population
A study population is the entire set of people, things, or events that share the characteristics that the study is interested in. (mugenda & Mugenda., 2003). Kothari (2004) defines a population as the universe of the study through which the research intends to draw a multiple for the purpose of administering primary data collection tools. The 600 educators in the Gicumbi district including students, teachers, head teachers, and sector education Inspectors were the study's population target.

Sample Design
This part covers the sampling techniques and sample size

Sampling Techniques
The process of choosing a subset of cases to make inferences about the full set is known as sampling. It involves choosing people from a population so that the sampled group had elements that are typical of the traits present in the population as a whole. For the purpose of choosing the schools, administrators, teachers, and students, the researcher employed basic random sampling. The simple random sampling technique was used as probability sampling where the researcher gave relevant information. The two sampling techniques which are purposive and simple random was mostly used to select the respondents from the schools including students, teachers, Sector Education Inspectors and head teachers of Gicumbi district.

Sample Size
According to Denscombe (2008), in order for the sample to be scientifically testable and representative of the total population, great care must be taken in its selection. A representative sample from each of the parties involved was chosen at random using the random sampling technique and used in the study. The sample size for this study, which has 600 participants as its study population, was determined using the Slovin's formula (Tejada et al., 2012), in which n denotes the sample size, N the population size, and e the margin of error (0.05) as follows: n =   Therefore, n = $=\frac{270}{1+270(0.05)2}$ 240

N:Total population under the study will be sampled and n:is 240

Data Collection Methods
A data collection method is an exacting, methodical way to address research objectives, questions, and hypotheses, as well as to gather information pertinent to the purpose of the study (Burns & Grove, 1993). The researcher used a combined method that combines interviews and a descriptive survey. The researcher chose the descriptive survey because there isn't enough time for the project to deal with a lot of schools, teachers, and parents from every public secondary school. The following data collection methods, such as questionnaires and documentation research techniques, were used in the data analysis

Data Collections Instruments

A structured questionnaire containing both closed-ended and open-ended questions regarding the objectives and purpose of the study was developed in order to gather the qualitative primary data. Additionally, the researcher conducted interviews to get answers to the research questions. Key informants, which included students, head teachers, SEOs, and teachers, provided written and oral responses to a carefully crafted questionnaire. This questionnaire was used to compare the responses.

Semi-structured personal interview schedules were created so that the researcher can examine the respondents and obtain additional information from them. Interviews were used to gather in-depth information about the study's themes because they facilitate the generation of detailed qualitative data and ensure prompt feedback from respondents. Besides, interviews shall help in cross checking answers given in questionnaire to ensure consistence and validity of the responses hence data triangulation.

Pre-testing, which involves administering the data collection instrument to a small sample of the population for a full-scale survey of a single school of choice, was used by the researcher prior to rolling out a data collection process. If issues arise during this pre-test, they most likely was during the full-scale administration. Pre-testing was used by researchers to find potential solutions to problems they may be having with the data collection tool.

Copies of the questionnaire were given out in person to respondents by the researcher and one research assistant, and the researcher presented the research instruments to the supervisor for inspection and verification. Copies of the questionnaire were given to teachers and students when the researcher and her assistant visit the schools. After teachers and students have completed the questionnaires, they picked up the copies. The interview was primarily intended for the head teachers and educational Inspectors from the three sectors of the Gicumbi District that have been chosen.

v.Research Findings and Discussion

Demographic Characteristics of Respondents

Researcher analyzed the demographic characteristics of respondents. These information was a baseline statistic to the research findings. The demographic characteristics were gender, marital status, age, and academic level, and working experience of respondents. The results were presented in the tables as follow:

Table 1:Gender of Respondents

		Frequency	Percent
	Male	113	48.7
Valid	Female	119	51.3
	Total	**232**	**100.0**

Source: Primary data, (2024)

Table 1 presents the gender distribution of respondents, researcher wanted to know how gender of respondents was distributed. Out of 232 respondents, 48.7% were the male while the 51.3% were female.

Presentation of Findings

This subdivision presents the results from the data analyzed, the study was to analyze practices through which professional teachers collaborate with one another for effective teacher performance in public secondary schools in Gicumbi District, Rwanda. The analysis was based on the specific objectives of the study; to assess the influence of professional collaboration on teachers' performance, to determine the level of teachers' performance, and to establish the relationship between professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda. The results categorized in accordance of objectives.

Influence of Professional Collaboration on Teachers' Performance

The first objective assessed the influence of professional collaboration on teachers' performance in public secondary schools in Gicumbi District, Rwanda. The results are presented and interpreted as follow:

Table 2:Influence of professional collaboration on teachers' performance

Statement	Strongly Disagree N	%	Disagree N	%	Neutral N	%	Agree N	%	Strongly Agree N	%	Total N	Mean	Sd
A collaborative culture fosters effective teamwork among school community members, guided by a shared goal	0	0	0	0	0	0	171	73.7	61	26.3	232	4.26	.441
Teacher collaboration contributes to professional development through social interactions among teachers	0	0	0	0	0	0	191	82.3	41	17.7	232	4.18	.382
In the school where collaboration culture takes place, is a place where both teachers and students learn	0	0	0	0	0	0	143	61.6	89	38.4	232	4.38	.487
The professional learning communities are a way for schools to reduce isolation and learn together to create sustainable change	0	0	0	0	0	0	118	50.9	114	49.1	232	4.49	.501
Teachers who work together will have access to more resources, which will increase their effectiveness with students	0	0	0	0	0	0	110	47.4	122	52.6	232	4.53	.500
Professional associations provide advisory services to assist teachers in the exercise of their rights and responsibilities	0	0	0	0	14	6.0	186	80.2	32	13.8	232	4.08	.439
Subject associations are vigorous in in promoting their own subject discipline	0	0	12	5.2	19	8.2	175	75.4	26	11.2	232	3.93	.630
The lesson study helps teachers to learn from one another for sustainable professional development	0	0	0	0	0	0	189	81.5	43	18.5	232	4.19	.389
Networks can generate new knowledge and mutual learning that can then feed back and inform public policy, they can be a useful tool for building capacity.	0	0	0	0	0	0	147	63.4	85	36.6	232	4.37	.483
Cluster meetings serve as a type of in-service training because they enable teachers to solve problems and exchange ideas. The younger, less experienced staff members can benefit from the older, more seasoned employees.	0	0	0	0	0	0	155	66.8	77	33.2	232	4.33	.472
Effective teams have a clearly defined purpose that guides their work and specific, measurable goals that they achieve	0	0	0	0	0	0	141	60.8	91	39.2	232	4.39	.489
Overall Mean												**4.28**	

Source: Primary data, (2024)

Table 2 presents the results of the first objective of this study of assessing the influence of professional collaboration on teachers' performance in public secondary schools in Gicumbi District, Rwanda. The data was analyzed, out of 232 respondents, on that a collaborative culture fostered effective teamwork among school community members, guided by a shared goal, the 73.7% agreed and 26.3% strongly agreed that collaborative culture fostered effective teamwork. On that teacher collaboration contributed to professional development through social interactions among teachers, the 82.3% agreed, and 17.7% strongly agreed. On that in the school where collaboration culture took place, is a place where both teachers and students learn, the 61.6% agreed and 38.4% strongly agreed that collaboration culture is a place where both teachers and students learn. On that the professional learning communities are a way for schools to reduce isolation and learn together to create sustainable change, the 50.9% agreed and 49.1% strongly agreed. On that teachers who work

together will have access to more resources, which will increase their effectiveness with students, the 47.4% agreed and 52.6% strongly agreed.

On that, professional associations provide advisory services to assist teachers in the exercise of their rights and responsibilities, the 6.0% were on neutral side, 80.2% agreed and 13.8% strongly agreed. On that subject associations were vigorous in in promoting their own subject discipline, the 5.2% disagreed, 8.2% were on neutral side, 75.4% agreed and 11.2% strongly agreed that subject associations were vigorous in in promoting their own subject discipline. On that the lesson study helps teachers to learn from one another for sustainable professional development, the 81.5% agreed and 18.5% strongly agreed.

On that networks can generate new knowledge and mutual learning that can then feed back and inform public policy, they can be a useful tool for building capacity, the 63.4% agreed and 36.6% strongly agreed. On that cluster meetings serve as a type of in-service training because they enable teachers to solve problems and exchange ideas. The younger, less experienced staff members can benefit from the older, more seasoned employees, the 66.8% agreed and 33.2% strongly agreed.

On that effective teams have a clearly defined purpose that guides their work and specific, measurable goals that they achieve, the 60.8% agreed and 39.2% strongly agreed. The overall means of results was 4.28 that was between agree (4) and strongly agree (5), it presented that the professional collaboration has the significant influence on teachers' performance in public secondary schools in Gicumbi District, Rwanda.

Level of Teachers' Performance
The second objective was to determine the level of teachers' performance in public secondary schools in Gicumbi District, Rwanda. The results were presented and interpreted as follow:

Table 3: Level Of Teachers' Performance

Statement	Strongly Disagree N	%	Disagree N	%	Neutral N	%	Agree N	%	Strongly Agree N	%	Total N	Mean	Sd
The school has a school based mentor who plan professional teachers' collaboration practices through community of practice and Continuous professional development	0	0	0	0	25	10.8	170	73.3	37	15.9	232	4.05	.515
The school leadership influence teacher collaboration within school planned activities to help them increase their teaching performance	0	0	0	0	0	0	151	65.1	81	34.9	232	4.35	.478
Are there significant interaction effects between school type and gender with regard to the frequency of teacher collaboration	0	0	0	0	20	8.6	165	71.1	47	20.3	232	4.12	.526
The school has collaboration with other school in a form of a field study to help teachers learn from one another	0	0	12	5.2	28	12.1	157	67.7	35	15.1	232	3.93	.689
The school has planned a calendar to carry out a lesson study.	0	0	0	0	0	0	162	69.8	70	30.2	232	4.30	.460
The common scheme of work is elaborated at the sector, district level.	0	0	0	0	0	0	191	82.3	41	17.7	232	4.18	.382
Teacher includes collaborative assessment by incorporating group projects or activities that require students to work together	0	0	0	0	0	0	134	57.8	98	42.2	232	4.42	.495

Teacher use advises of his/her fellow teachers to improve my teaching after lesson observation	0	0	0	0	0	0	144	62.1	88	37.9	232	4.38	.486
There are subject associations in our Sector, District.	0	0	0	0	0	0	179	77.2	53	22.8	232	4.23	.421
Overall Mean												**4.217**	

Source: Primary data, (2024)

Table 3 presents the results of the second objective of this study of determining the level of teachers' performance in public secondary schools in Gicumbi District, Rwanda. The data was analyzed, out of 232 respondents, on that school has a school-based mentor who plan professional teachers' collaboration practices through community of practice and Continuous professional development, the 10.8% were neutral side, the 73.3% agreed and 15.9% strongly agreed.

On that school leadership influence teacher collaboration within school planned activities to help them increase their teaching performance, the 65.1% agreed and 34.9% strongly agreed that school leadership influence teacher collaboration within school planned activities to help them increase their teaching performance. On were there significant interaction effects between school type and gender with regard to the frequency of teacher collaboration, the 8.6% were on neutral side, 71.1% agreed and 20.3% strongly agreed. On that school had collaboration with other school in a form of a field study to help teachers learn from one another, the 5.2% disagreed, 12.1% were on neutral side, 67.7% agreed and 15.1% strongly agreed. On that school had planned a calendar to carry out a lesson study, the 69.8% agreed and 30.2% strongly agreed.

On that common scheme of work is elaborated at the sector, district level, the 82.3% agreed, and 17.7% strongly agreed. On that teacher included collaborative assessment by incorporating group projects or activities that require students to work together, the 57.8% agreed and 42.2% strongly agreed. On that teacher used advises of his/her fellow teachers to improve my teaching after lesson observation, 62.1% agreed and 37.9% strongly agreed. On there were subject associations in our Sector, District, 77.2% agreed and 22.8% strongly agreed. The overall means of results was 4.217 that was between agree (4) and strongly agree (5), it presented that there was a significance level of teachers' performance in public secondary schools in Gicumbi District, Rwanda.

Relationship between Professional Teachers' Collaboration And Teachers' Performance

Table 4: Relationship Between Professional Teachers' Collaboration And Teachers' Performance

		Professional teachers' collaboration	Teachers' performance
Professional teachers' collaboration	Pearson Correlation	1	.842**
	Sig. (2-tailed)		.000
	N	232	232
Teachers' performance	Pearson Correlation	.842**	1
	Sig. (2-tailed)	.000	
	N	232	232

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data, (2024)

Table 4 presents the relationship between professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda. The Statistical Package for Social Sciences (SPSS) software version 26.0 was used to determine the Pearson coefficients. The findings analysis resulted that relationship between professional teachers' collaboration and teachers' performance was 0.842. It was indicated that there was a statistically significant relationship between the professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda.

Table 5 Model Summary of professional teachers' collaboration and teachers' performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842a	.709	.707	.264

a. Predictors: (Constant), Professional teachers' collaboration

Source: Primary data, (2024)

Table 5 presents the results on the overall model's significance of the professional teachers' collaboration and teachers' performance, the results indicated that the R Square=.709. It was clear that the 70.9% of all variables of teacher performance can be explained by one's of all variables of professional teachers' collaboration in public secondary schools in Gicumbi District, Rwanda. The standard error of coefficients was 0.264 which was low.

Table 6 Analysis of Variance (ANOVAª)of professional teachers' collaboration and teachers' performance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	39.042	1	39.042	559.091	.000b
1	Residual	16.061	230	.070		
	Total	55.103	231			

a. Dependent Variable: Teachers' performance

b. Predictors: (Constant), Professional teachers' collaboration

Source: Primary data, (2024)

Table 6 presents the analysis of variance of professional teachers' collaboration and teachers' performance. The results presented that the variables were statistically significant with regression mean square of 39.042 and residual mean square was .070 while F=559.091 and P-value =.000b, it confirmed that there was a significant relationship between professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda. Mean square residual presents the mean squared differences within professional teachers' collaboration and it is a components of F used to test for differences between variables or is the estimate of the variance of the errors help to assess the variation in the data that is not accounted for by the professional teachers' collaboration in the model.

Table 7Coefficients of professional teachers' collaboration and teachers' performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
	(Constant)	1.141	.129		8.819	.000	.886	1.396
1	Professional teachers' collaboration	.722	.031	.842	23.645	.000	.662	.782

a. Dependent Variable: Teachers' performance

Source: Primary data, (2024)

Table 7 presents the constant coefficients of independent variables of professional teachers' collaboration and teachers' performance. The overall constant results with P value= .000 showed that there was a significant relationship between professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda. For the detail, It was statistically significant since P-value was less than 0.05. The results indicated that influence of professional teachers' collaboration was statistically significant with P-value =.000.

Findings from Interviewees

The interview guide was conducted to the five head teachers and three sector education inspectors. The data was analyzed using thematic analysis. The date was examined and debated in great detail. Text and the interview tape were turned into content. On that teachers encourage to collaborate each other, This question was addressed to 5 head teachers, all responded that collaboration (Professional Learning Communities, Collaborative Lesson Planning, Co-Teaching, and others) among teachers is essential for professional growth, instructional improvement, and ultimately, student success.

On mechanisms used to set effective teacher collaboration, this question addressed to head teachers, they responded that effective teacher collaboration is crucial for enhancing teaching quality, improving student outcomes, and fostering a positive school culture. Several mechanisms can be employed to facilitate effective teacher collaboration; Structured meeting times: Establish regular meeting times for teachers to come together to discuss curriculum, lesson planning, student progress, and instructional strategies; clear goals and expectations, this applied to define specific goals and expectations for collaboration sessions.

Teachers should have a clear understanding of what they are expected to accomplish during collaborative meetings, whether it's developing common assessments, analyzing student academic performance; Shared resources and materials, this provide teachers with access to shared resources, such as curriculum documents, lesson plans, and instructional

materials; Professional learning communities, this organizes teachers into professional learning communities based on grade level, subject area, or common interests; Teacher leadership opportunities, this help to empower teachers to take on leadership roles within collaborative structures.

Teacher leaders can facilitate meetings, coordinate professional development activities, and serve as liaisons between administration and their peers; and Administrative support for ensuring that school leaders actively support and promote teacher collaboration by allocating time, resources, and recognition for collaborative efforts. On that teachers participate in subject association in region, this question addressed to 3 sector education officers, they responded that in many areas, teachers actively participate in subject associations to collaborate with peers, access resources, stay updated on educational trends, and advocate for their subject area.

Common subject collaborations for them were shared like; Membership where teachers join subject-specific associations relevant to their teaching area. These associations could be local, regional, national, or even international, depending on the subject and the teacher's interests; Resource sharing, the Subject associations serve as platforms for teachers to share teaching resources, lesson plans, assessment tools, and other educational materials. This collaborative approach helps educators access high-quality resources and adapt them to their teaching contexts; Advocacy, this promotes Teachers to participate in subject associations to advocate for the importance of their subject area in education policy, curriculum development, and funding decisions. By collectively voicing their concerns and priorities, educators can influence decision-makers and promote the value of their subject in schools.On allowing teachers to observe their fellow teachers while teaching for purpose of teaching learning practices, this question was addressed to head teachers, they responded that Observing fellow teachers in action can be a valuable professional development tool for educators.

They provided several common methods teachers use to observe their colleagues for the purpose of teaching and learning practices: Peer observation: Teachers can schedule times to visit each other's classrooms to observe teaching methods, classroom management techniques, and student engagement strategies. They might use a structured observation form to focus on specific aspects of teaching. Professional learning communities: Teachers can collaborate in groups to discuss teaching strategies, share resources, and provide feedback to each other.

These communities often meet regularly to discuss challenges and successes in the classroom. Co-teaching: Collaborative teaching arrangements allow teachers to work together in the same classroom, providing opportunities for peer observation and feedback in real-time. Workshops and training sessions: Schools may organize workshops or training sessions where teachers can observe master teachers in action or participate in model lessons. This provides opportunities for hands-on learning and skill development. On if teachers observe their fellow teachers while teaching for the purpose of teaching-learning practices, what changes have you noticed? They responded that teacher observation for teaching and learning practices fosters a culture of continuous improvement and professional excellence within schools, ultimately benefiting both educators and students alike. They shared some changes like: Improved teaching techniques, teachers may adopt new instructional strategies and classroom management techniques based on what they observe in their colleagues' classrooms. This can lead to more engaging and effective teaching practices; Increased collaboration, regular observation and feedback sessions foster a culture of collaboration among teachers.

They can share ideas, resources, and best practices, ultimately benefiting both students and educators; Professional growth, they said that observing and being observed by peers provides valuable opportunities for professional growth. Teachers can receive constructive feedback on their teaching practices and areas for improvement, leading to ongoing development as teachers; Enhanced student learning, they responded that by implementing new teaching strategies and refining their instructional techniques, teachers can create more dynamic and inclusive learning environments.

This can result in improved academic outcomes and increased student engagement; Cultural shift towards reflective practice, they indicated that regular observation encourages teachers to reflect critically on their teaching methods and their impact on student learning. This reflective practice can lead to more intentional and evidence-based teaching approaches; Community building, they said that teacher observation can strengthen relationships among staff members and contribute to a positive school culture. When teachers support each other's growth and development, it creates a sense of camaraderie and collective responsibility for student success.

vi. Conclusion

The analyzed the practices through which professional teachers collaborate with one another for effective teacher performance in public secondary schools in Gicumbi District, Rwanda. The conclusions taken basing on the results form data analysis, on the influence of professional collaboration on teachers' performance, it was concluded that the professional collaboration has the significant influence on teachers' performance in public secondary schools. On the level of teachers' performance in public secondary schools, it was concluded that there was a significance level of teachers' performance in public secondary schools and the findings analysis resulted that relationship between professional teachers' collaboration

and teachers' performance was 0.842 which concluded that there was a statistically significant relationship between the professional teachers' collaboration and teachers' performance in public secondary schools in Gicumbi District, Rwanda.

vii. Rerefences

Altınkurt, Y. (2014). The relationship between school climate and teachers' organizational silence behaviors. *The Anthropologist, 18*(2), 289-297. https://doi.org/10.1080/09720073.2014.11891546

Avalos-Bevan, B., & Bascopé, M. (2017). Teacher informal collaboration for professional improvement: Beliefs, contexts, and experience. *Hindawi Education Research International, 4*, Article 1357180. https://doi.org/10.1155/2017/1357180

Avila, I. (2016). *Effects of teacher collaboration on student achievement in elementary school* [Master dissertation]. California State Polytechnic University.

Bayrakçı, M. (2010). In-service teacher training in Japan and Turkey: A comparative analysis of institutions and practices. *Australian Journal of Teacher Education, 34*(1), 10-22. https://doi.org/10.14221/ajte.2009v34n1.2

Bryk, A. S., & Schneider, B. (2002). Trust in schools: A core resource for improvement. Russell Sage Foundation

Bryk, A. S., Sebring, P. B., Allensworth, E., Luppescu, S., & Easton, J. Q. (2015). Organizing schools for improvement: Lessons from Chicago. University of Chicago Press.

Carroll, T. G., & Foster, E. (2010). *Who will teach? Experience matters.* National

Cerit, Y. (2009). Öğretmenlerin örgütsel güven düzeyleri ile işbirliği yapma düzeyleri arasındaki ilişki [The relationship between teachers' levels of organizational trust and their levels of collaboration]. *Uludag University Journal of Education Faculty, 22*(2), 637-657. https://dergipark.org.tr/en/pub/uefad/issue/16690/173464

Çoban, O., & Atasoy, R. (2020). Relationship between distributed leadership, teacher collaboration and organizational innovativeness. *International Journal of Evaluation and Research in Education, 9*(4), 903-911. https://doi.org/10.11591/ijere.v9i4.20679

Cohen, S.G., & Bailey, D.E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management, 23(3)*, 239–290. Commission on Teaching and America's Future. https://files.eric.ed.gov/fulltext/ED511985.pdf

Cook, L., & Friend, M. (1993). Educational leadership for teacher collaboration. In B. S. Billingsley, D. Peterson, D. Bodkins & M. B. Hendricks (Eds.), *Program leadership for serving students with disabilities* (pp. 421-444). https://files.eric.ed.gov/fulltext/ED372532.pdf

Cook, L., & Friend, M. (1993). Educational leadership for teacher collaboration. In B. Billingsley (Ed.), *Program leadership for serving students with disabilities* (pp. 421–444). Richmond: Virginia Department of Education.

Corcoran, T.B. (1995). *Helping Teachers Teach Well: Transforming Professional Development*. Brunswick, NJ: Policy Briefs, Consortium for Policy Research in Education.

Creswell, J. W., & Plano-Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage.

Daly, A. J., Der-Martirosian, C., Ong-Dean, C., Park, V., & Wishard-Guerra, A. (2011). Leading under sanction: Principals' perceptions of threat rigidity, efficacy, and leadership in underperforming schools. *Leadership and Policy in Schools, 10*(2), 171206.

Darling-Hammond, L., & McLaughlin, M. W. (1995). Policies that support professional development in an era of reform. Phi Delta Kappan, 76(8), 597-604

Darling-Hammond, L., Amrein-Beardsley, A., Haertel, E., & Rothstein, J. (2012). Evaluating teacher evaluation. *Phi Delta Kappa, 93*(6), 8-15.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective Teacher Professional Development*. Palo Alto, CA: Learning Policy Institute.

Datnow, A. (2011). Collaboration and contrived collegiality: Revisiting Hargreaves in the age of accountability. *Journal of Educational Change*, 12(2), 147–158.

Datnow, A. (2011). Collaboration and contrived collegiality: Revisiting Hargreaves in the age of accountability. *Journal of Educational Change, 12*(2), 147-158. Department of Education UK (2020, July 3). *Professional Development for School Leaders.*

De Lima, J.Á. (2001). Forgetting about friendship: Using conflict in teacher communities as a catalyst for school change. *Journal of Educational Change*, 2(2), 97–122.

Demirtaş, Z. (2010). The relationship between school culture and student achievement. *Education and Science, 35*(158), 208-223. http://egitimvebilim.ted.org.tr/index.php/EB/article/view/117/217

Desimone, L.M. (2011). A Primer on Effective Professional Development. *Kappan* 92 (6), 68–71. 10.1177/003172171109200616.

Dewan, S., Ganley, D., & Kraemer, K. L. (2010.) Complementarities in the Diffusion of Personal Computers and the Internet: Implications for the Global Digital Divide. *Information Systems Research, 21*(4). 925-940-doi:10.1287/isre.1080.0219

Cheriyan, P., Leonard, P., Menon C., and Prigozhina D. (2021) Continuous professional development of secondary school teachers in Rwanda

DuFour, R. (2003). Collaboration lite puts student achievement on a starvation diet. *The Journal of Staff Development, 24*(4), 63-64.

DuFour, R. (2007). In praise of top-down leadership. *The School Administrator, 64*(10), 38-42.

DuFour, R. (2011). What is a professional learning community? *Educational Leadership, 61*(8), 6-11. https://www.ascd.org/el/articles/what-is-aprofessional-learning-community

DuFour, R., & Eaker, R. (1998). Professional learning communities at work: Best practices for enhancing student achievement. Solution Tree Press.

DuFour, R., & Eaker, R. (1998). Professional learning communities at work: Best practices for enhancing student achievement. Solution Tree Press.

DuFour, R., & Eaker, R. (2010). *On common ground: The power of professional learning communities*. Solution Tree Press.

DuFour, R., DuFour, R., & Eaker, R. (2016). *Learning by doing: A handbook for professional learning communities at work* (3rd ed.) Bloomington, IN: Solution Tree.

Dumay, X., Boonen, T., & Van Damme, J. (2013). Principal leadership long-term indirect effects on learning growth in mathematics. *Elementary School Journal, 114*(2), 225251.

Duyar, I., Gumus, S. & Sukru Bellibas, M. (2013). Multilevel analysis of teacher work attitudes: The influence of principal leadership and teacher collaboration. *International Journal of Educational Management, 27*(7), 700-719. doi: 10.1108/IJEM-09-2012-0107

Garet, M.S., A.C. Porter, L. Desimone, B.F. Birman, & S.Y. Kwang. (2001). What Makes Professional Development Effective? Results from a National Sample of Teacher.

Hargreaves, A., & Fullan, M. (2012). *Professional capital: Transforming teaching in every school*. New York: Teachers College Press.

He, C. (2013). The teacher collaboration in teacher studio. *Shanghai Education Study* (12), 57–58. (in Chinese).

James, C., Dunning, G., Connolly, M., & Elliott, T. (2007). Collaborative practice: a model of successful working in schools. *Journal of Educational Administration*, 45(5), 541–555.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. Educational Researcher, 33(7), 14-26.

Johnson, S. M. (2008). Finders and keepers: Helping new teachers survive and thrive in our schools. John Wiley & Sons.

Kelchtermans, G. (2006). Teacher collaboration and collegiality as workplace conditions. A review. *Zeitschrift für Pädagogik*, 52(2), 220–237.

Kimmons, R., & Hall, C. (2016). Implementing a Professional Learning Community through Online Collaboration: An Action Research Study. Journal of Interactive Online Learning, 14(2).

Lee, P.M., & A.A. Sharicz. (2014). The Unfolding of a Professional Learning Community. *Pedagogy and the Human Sciences* 1 (4), 39–50.

Li, D.W., & Li, H.Y. (2014). The organization form and perfect strategy of teacher collaboration. *Journal of Educational Institute of Jilin Province*, 7(30), 355. (in Chinese).

Lieberman, A., & Pointer Mace, D. H. (2008). Teacher learning: The key to educational

Louis, K. S., & Kruse, S. D. (1995). Professionalism and community: Perspectives on reforming urban schools. Thousand Oaks, CA: Corwin Press.

Louis, K. S., Marks, H. M., & Kruse, S. D. (1996). Teachers' professional community in restructuring schools. American Educational Research Journal, 33(4), 757-798.

McLaughlin, M. W., & Talbert, J. E. (2001). Professional communities and the work of high school teaching. University of Chicago Press.

McLaughlin, M. W., & Talbert, J. E. (2001). Professional communities and the work of high school teaching. University of Chicago Press.

MINEDUC. (2016). 2016 Education Statistical Yearbook in Rwanda (Issue March). MINEDUC. (2018). Republic of Rwanda Ministry of Education Education Sector Strategic Plan 2018/19 to 2023/24. Education Sector Strategic Plan, 32–128

Moller, J., & Katzenbach, J. R. (2011). The wisdom of teams: Creating the high-performance organization. Harvard Business Review Press.

Somech, A., & Drach-Zahavy, A. (2013). Translating team creativity to innovation implementation: The role of team composition and climate for innovation. Journal of Management, 39(3), 684-708.

Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. Teaching and Teacher Education, 24(1), 80-91