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Instructional Materials Usage and Students' Academic Performance in Selected Ordinary Level Public Schools in Gasabo District in Rwanda

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Abstract

The education system in Rwanda considers the passing of examination as the major criterion for performance. Instructional materials like computers, projectors, laboratory apparatuses and textbooks, play an important role in the achievement of educational goals, objectives and students' performance. The purpose of this paper therefore, was to investigate the relationship between the usage of instructional materials and student's academic performance in selected ordinary level public secondary schools of Gasabo District. This paper utilized a correlation research design to investigate the relationship between the usage of instructional materials and students' academic performance in selected ordinary level public secondary schools in Gasabo District. The study involved 264 participants, with a sample size of 159 determined using the Yamane formula. Various data collection methods were utilized, including questionnaires, observation, interviews, and document analysis. The collected data were managed and analyzed using SPSS software version 21, and the research instrument demonstrated high reliability with a Cronbach's Alpha score of 92.7%. The findings reveal that well-equipped science laboratories can affect students' assessment results in science subjects, with an R-Square of 0.489. Additionally, the study found that the usage of instructional materials can impact students' academic performance, with an R-Square of 0.532. The study also established a statistically significant relationship between instructional materials usage and students' academic performance, indicated by a Pearson coefficient of correlation (r) of 0.729. This demonstrates that effective utilization of instructional materials in schools can positively influence students' academic performance. It is recommended that educational managers need to prioritize curriculum stability and allocate appropriate budgets for instructional materials. Mobilizing parents for cost sharing and engaging the private sector in investing in education are crucial steps to ensure an adequate supply of instructional resources. Teachers play a pivotal role in utilizing the available materials effectively, making the teaching and learning process more meaningful and engaging for students. Parents should consider schools with sufficient instructional resources when selecting educational institutions for their children.

Keywords: *Instructional materials, educational resources, Students' academic performance and secondary schools*

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1.0 Introduction

Globally, education is viewed by many countries around the world as a significant investment for national development. It is expected to generate the necessary quantity and quality of human resources for economic growth by utilizing the appropriate combination of inputs (Okeke, 2013). Furthermore, according to Okeke (2013), education enables individuals to acquire the knowledge, skills, and attitudes essential for effective living. In all modern nations, investment in the education of youth is considered paramount. This is why education tends to consume a substantial portion of national resources, particularly in third-world economies. In Africa, instructional materials are considered a top priority in all countries aiming to enhance the quality of education and students' achievements (Grauve, 2010). According to Barro (2006), the quality of education provided through the support of instructional materials plays a vital role in determining standard learning outcomes, such as students' academic performance. Additionally, Barro (2006) suggests that the effective utilization of instructional materials is a crucial factor in improving curriculum implementation and enabling teachers to achieve their teaching goals while guiding students throughout the teaching and learning process.

Shiundu and Omulando (2012) emphasize that instructional materials are regarded as essential resources that enhance students' academic performance in examinations and contribute to modern teaching methods and the overall quality of education. Deolalikar (2009) further supports this notion by revealing that students' scores in examinations are crucial indicators of their achievements. According to Deolalikar (2009), the quality of schooling is reflected in literacy levels, measurable cognitive abilities, and observable academic performance, all of which are facilitated by the effective utilization of instructional materials. In East Africa, it has been observed that the provision of instructional materials, such as textbooks, reading materials, school buildings, libraries, laboratories, and ICT facilities, is significantly inadequate. This lack of resources hampers the effective implementation of the curriculum (Eshwani, 2016). Ruth, Eduard, and Alex (2015) further highlight that insufficient teaching materials, among other factors, have resulted in the poor delivery of educational services and undesirable performance in the Kenya Certificate of Secondary Education in public secondary schools. Okumbe (2016) emphasizes that classroom instructional activities and curriculum delivery should be based on the quality of teachers, as they play a crucial role in offering quality education and improving students' academic performance.

In Rwanda, education is recognized as a crucial tool for ensuring that all citizens can fully realize their human rights (MINEDUC, 2018). Following the 1994 genocide against Tutsis, the education sector, along with other sectors of national life, faced an emergency situation in which the main objective was to rebuild and restart the education system, which had been severely disrupted. Education and training were considered vital for achieving development and reducing poverty in Rwanda. Despite limited resources, Rwanda made significant investments in human resources, focusing on preparing a well-educated workforce and building capacity at all levels, as outlined in the Education Sector Strategic Plan (ESSP, 2010). Furthermore, like many other nations, Rwanda committed to achieving the Millennium Development Goals (MDGs). Key priorities included meeting the International Development Targets (IDTs) of Education for All (EFA) by 2015, reducing gender inequality in education, providing textbooks and relevant curricula across all

levels of the education system, and training more teachers. In the sector's strategic plan framework, Rwanda identified nine-year basic education as a top emerging priority.

Secondary schools play a crucial role in any educational system, holding a significant position. According to Nadimpalli et al. (2010), education at the secondary level is considered the foundation for acquiring higher knowledge in tertiary institutions. Similarly, Manda (2014) argues that secondary education is a vital subsector within the education system, as it prepares individuals to become human capital for development and provides them with opportunities for a successful life. It serves as a crucial link between basic education and the world of work, as well as further training. Owoeye (2016) emphasizes that the availability of relevant educational resources greatly contributes to academic achievement. Consequently, the lack of such resources can lead to poor performance and failure.

1.1 Problem Statement

In the educational system of Rwanda, the passing of examinations is considered the primary criterion for evaluating students' performance (ESSP, 2010). However, there are variations in the results obtained from monthly assessment scores among selected ordinary public secondary schools in Gasabo district. This indicates that there are imbalances in the results achieved in the national examination, the Rwanda Certificate of Education. While several studies have been conducted to identify factors influencing poor performance in the Rwanda Certificate of Education examination, there is a lack of research specifically focused on the usage of instructional materials in selected public secondary schools in Gasabo district. Despite government interventions aimed at improving the availability of instructional materials, there is still a shortage of such materials. This shortage may contribute to the imbalances in academic performance and subsequently reduce students' competitiveness in the labor market. In fact, 56% of teachers in ordinary level public secondary schools reported inadequate utilization of instructional materials. However, with the government's current initiatives to provide school materials, it is expected that there will be improved usage of instructional materials in public secondary schools.

1.2 Objective of the paper

Objective of this paper was to investigate the relationship between the usage of Instructional materials and student’s academic performance in selected ordinary level public secondary schools of Gasabo District.

2.0 Literature Review

2.1 Concept of instructional resources

Akinsanya (2014) highlights the importance of instructional materials in the educational sector, as they play a crucial role in facilitating proper teaching and learning. Okumbe (2016) emphasizes that textbooks are irreplaceable elements in the educational process and are central to schooling at all levels. Textbooks often serve as the primary source of information and course material for students (Okeke, 2013). Owoeye (2016) notes that teachers' reliance on textbooks and the availability of relevant books significantly impact the quality of education and instructional materials. The lack of textbooks has been associated with high costs, as the educational process

heavily relies on books (Mwangu, 2017). Okemakinde, Adedeji and Ssempebwa (2012) argue that laboratories are essential for teaching and learning sciences, as students tend to better understand and remember what they see rather than what they are told. The provision of laboratories greatly influences the success of science courses (Owoeye, 2016). Fabunmii, Brai-abu and Adeniji (2007) note that the allocation of educational resources, including facilities, to schools is a determining factor in secondary school academic performance. Savasci and Tomul (2013), in their study on the relationship between educational resources and academic performance in Kenya, found a strong positive correlation between instructional materials and academic performance. Given these factors, the researcher was motivated to explore the relationship between the usage of instructional materials and the academic performance of selected public ordinary level students in the Gasabo district national examinations.

2.2 Academic performance

Academic performance or academic achievement is an important element of learning Munguti (2016) contended that a common measure of academic achievement is examination or continuous assessment. Thus performance in examinations was seen as evidence that learning had taken place. According to Abolmaali, Rashedi and Ajilchi (2014) academic performance among learners is considered as a criterion for deciding the effectiveness of educational programmes. They added that that is why in the evaluation of an education system, researchers often consider academic achievement and search for factors affecting academic achievement. The same author pointed out that identified factors by researchers include: intelligence, processing of information, as well as the use of cognitive and meta-cognitive strategies, thinking styles and learning, and creativity; motivational factors (like goal orientation and motivational beliefs), and internal and external motivation; quality of instruction in schools, classroom structure, feeling of belonging and perceptions of classroom environment; family factors such as family environment perception, family support, socio-economic status such as parent' s education and their occupation; non-cognitive factors such as personality traits, identity styles, self-concept and self-esteem; and a combination of different factors including cognitive, emotional, behavioural, academic engagement and resiliency. The relationship between learning and academic achievement among students is mediated by cognitive engagement (Pintrich, 1999) argued that there is a positive relationship between deep cognitive engagement and academic performance.

2.3 Students' relationships with content, teachers and each other

Many writers agree on the importance of teaching through relationships, emphasizing that it involves creating a complex social environment where students and teachers engage in conversations, share experiences, and participate in activities that promote active learning (Zimmerman, 2012). Munguti (2016) states that clear and lively presentation of course concepts and objectives is essential for enhancing learning and increasing student engagement with the content. In her research, she found that students who spent more time interacting with the course content achieved higher grades in weekly quizzes. Factors such as the mode of delivering course materials and the allocated time for specific tasks have been identified as influencing performance (Abrami, Bernard, & Tamim, 2011). Another crucial interaction is the relationship between students and teachers. Abrami et al. (2011) highlights the significance of a positive and supportive

relationship between students and teachers, which positively affects students' academic and social development. When students have a close and positive relationship with their teachers, it leads to better academic attainment. Conversely, conflicts in these relationships can result in poor academic performance. Classroom interactions mainly revolve around teachers' practices, including asking questions, correcting errors, providing explanations, and allowing time for student responses. Good relationships between students and teachers foster motivation and academic achievement, creating an environment where knowledge is seen as something to discover and reinvent rather than passively memorize (Abrami et al., 2011). In light of these interactions, The Centre for Innovation in Teaching and Learning (2015) emphasizes that learning involves the interaction between students' prior knowledge, new information, and learning activities. Students construct their understanding through experiences, interactions with content and peers, and reflection. Teachers play a crucial role in providing opportunities for students to connect with course content in meaningful ways, such as using cooperative learning, interactive lectures, engaging assignments, hands-on laboratory and field experiences, and other active learning approaches (The Centre for Innovation in Teaching and Learning, 2015).

2.4 Learning environment and academic performance

The Glossary of Educational Reform (2014) defines the learning environment as the diverse physical locations, contexts, and cultures in which students engage in learning. It encompasses both in-school and out-of-school settings, including outdoor environments. The term also includes the ethos and characteristics of a school or classroom, including the interactions between individuals in the teaching and learning process, as well as the strategies employed by teachers to facilitate learning. Byoung-suk (2012) emphasizes the importance of providing a proper and adequate environment for children's learning, highlighting that the educational process occurs within physical, social, cultural, and psychological contexts. Arul (2012) states that a favorable school environment serves as a stimulus for learning experiences, as children spend a significant amount of time in school, and the environment can influence performance through curricular activities, teaching techniques, and relationships. Bates (2015) identifies various components of an effective learning environment. In addition to physical aspects such as classrooms and technology, he emphasizes learner characteristics, goals, activities that support learning, and strategies for measuring and driving learning as integral parts of the learning environment. Parrett and Budge (2012) assert that a supportive and safe learning environment is crucial for student learning. When students feel safe and supported, they are more able to focus on learning. Schaps (2005) adds that a supportive school environment promotes academic success and influences students' social, emotional, and ethical development. In such environments, students become more motivated and engaged in learning.

2.5 Challenges hindering use of instructional resources

Learning resources are crucial for effective teaching, but there are various factors that can pose challenges to their use in the teaching process. Some of these factors are particularly relevant to the current study. Abrami et al. (2011) highlights the inadequacy of resources as a significant limiting factor. Insufficient availability of learning resources can severely hinder their effective deployment in teaching. They argue that effective teaching requires the use of adequate and

relevant learning resources. Afolabi (2008) also emphasizes the importance of the availability of learning resources and the teachers' ability to use them as vital determinants in the selection of teaching methods. Zhao, Pugh, Sheldon, and Byers (2002) identify several challenges related to the use of computers and technology in education. These challenges are categorized into three areas: the school environment or context, the students, and the teachers. Challenges related to the school environment include an organizational culture that does not support effective technology use, lack of human support and infrastructure, and inadequate physical setup and structure for technology. Challenges associated with students include their comfort level with technology, their prior experiences with technology, and their attitudes, beliefs, and engagement with the scope of the technology project. Finally, challenges related to teachers include inadequate training, insufficient technology skills and proficiency, misaligned attitudes and beliefs regarding educational technology pedagogy, and difficulties in accessing and utilizing school resources. These factors, such as inadequate resources, challenges in the school environment, student-related challenges, and teacher-related challenges, can all impede the effective use of learning resources in teaching.

3.0 Methodology

This paper utilized a correlation research design to investigate the relationship between the usage of instructional materials and students' academic performance in selected ordinary level public secondary schools in Gasabo District. The total population consisted of 264 respondents, and the sample size was determined using the Yamane formula, resulting in a total of 159 respondents. The data collection instruments employed in this study included questionnaires, direct observation, guided interviews, and document analysis review. The respondents were stratified into three strata, and a simple random sampling technique was used to select the participants representing each stratum. The validity of the research instrument was ensured by distributing it to expert respondents in the field of study, while reliability was established through a pilot study. The pilot study resulted in a reliability score of 92.7% using Cronbach's Alpha, indicating that the research instrument was considered reliable as it exceeded the recommended threshold of 70%. The data management for this study was carried out using SPSS software version 21, allowing for efficient organization and analysis of the collected data.

4.0 Findings

This paper was to investigate the relationship between the usage of Instructional materials and student’s academic performance in selected ordinary level public secondary schools of Gasabo District.

4.1 Instructional materials usage in selected public secondary schools in Gasabo district

The presented findings were based on examining the usage of instructional materials in selected ordinary level public secondary schools in Gasabo district.

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Table 1: Students' responses on the usage of instructional materials

Statements	SD		D		N		A		SA		Mean	Std
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
This school has science laboratory infrastructures.	4	20	6	30	2	10	6	30	2	10	2.54	1.30
Teachers often use science laboratory apparatuses.	5	25	6	30	3	15	4	20	2	10	2.70	1.14
There are computers, projectors used during class lessons.	4	20	7	35	5	25	3	15	1	5	2.04	1.06
Teachers and students use enough reference books in class lesson.	3	15	8	40	2	10	5	25	2	10	2.24	1.15
This school promotes the use of ICT facilities.	4	20	7	35	2	10	4	20	3	15	2.26	1.16
Science laboratories of this school have standard materials.	3	15	6	30	3	15	6	30	2	10	2.24	1.09
This school has resourceful textbooks that are used.	4	20	7	35	3	15	5	25	1	5	2.32	1.23

The findings from Table 1 illustrate the responses given by students regarding the usage of instructional materials in selected public secondary schools in Gasabo District. The majority of students reported a mean score of 2.54 and a standard deviation of 1.30. Additionally, 30.0% of students indicated the presence of science laboratory apparatuses as instructional materials. These findings align with the argument made by Okemakinde, Adedeji, and Ssempebwa (2012) that the efficient utilization of laboratories in science education enhances the quality of education and fosters better understanding among students. Though, only 25.0% of students agreed that they use textbooks with resourceful information with the mean of 2.32 and standard deviation of 1.23. This implied that use of textbooks and school libraries that help students improve their learning condition was still at lower supply in selected ordinary level public secondary schools in Gasabo district. Though, Okeke (2013) also supported that textbooks provide the only source of information for students as well as the course of studies for the subjects that also help students to make their own research and understanding.

The findings in the Table 1reveal that 25.0% of student agreed that they and their teachers use enough reference books that facilitate their learning conditions with the mean of 2.24 and 1.15 of standard deviation. That also implied that using reference books by teachers and students was still at a low level to improve their academic performance. On the other hand, 20.0% of students who affirmed that they have well-equipped laboratories at the mean of 2.07 and 1.14 of standard deviation which shows that the majority of school do not have equipped laboratories as instructional materials that support the teaching and learning activities. Finally, 15.0% of students agreed that their schools promote the use of ICT facilities. This implies that the majority of schools do not have adequate ICT facilities that facilitate easy learning process that lead to improvement of academic performance. Mutai (2006) asserts that learning is strengthened when there are enough reference materials such as text books, exercise books, teaching aids and classrooms as well as well-equipped school libraries and laboratories.

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Table 2: Students' responses on the level of instructional materials

Extent of instructional materials used	Frequency	Valid Percent
Low extent	11	55.0
Moderate extent	5	25.0
High extent	4	20.0
Total	20	100.0

From the Table 2 which indicates the extent to which instructional materials are used in selected ordinary level public secondary schools located in Gasabo district. The majority of respondents as 55% of students indicated that the usability of instructional materials was still at a low extent which may also affect students' performance while 25% of students revealed that the usability of instructional materials were at a moderate extent. The remaining 20% of students stated that there was a high extent related to the usability of instructional materials in school setting. Manda (2014) argued that the extent of using instructional materials in teaching and learning process promote the quality of education and effective delivery of curriculum designed.

Table 3: Teachers' responses on instructional materials usage in selected public secondary schools

Statements	SD		D		N		A		SA		Mean	Std
	freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
Teachers often use science laboratory apparatuses	27	21.6	53	42.4	10	8.0	21	16.8	14	11.2	2.54	1.30
This School has well-equipped laboratory	45	36	50	40	13	10.4	10	8.0	7	5.6	2.70	1.14
This school has adequate ICT facilities	42	33.6	56	44.8	12	9.6	10	8.0	5	4.0	2.04	1.06
This school has well-equipped library	33	26.4	53	42.4	20	16.0	14	11.2	5	4.0	2.24	1.15
The school promotes the use of ICT facilities	35	28.0	52	41.6	16	12.8	15	12.0	7	5.6	2.26	1.16
promotes standard use of science laboratories	33	26.4	53	42.4	20	16.0	14	11.2	5	4.0	2.24	1.09
Make use of textbooks for resourceful information	38	30.4	43	34.4	18	14.4	18	14.4	8	6.4	2.32	1.23

Based on the findings presented in Table 3, which reflected the responses provided by teachers regarding instructional materials usage in selected public secondary schools in Gasabo District, it was revealed that only 28% of teachers confirmed frequent utilization of science laboratory apparatuses as instructional materials, with a mean score of 2.54 and a standard deviation of 1.30. This finding aligns with the argument made by Okemakinde, Adedeji, and Ssempebwa (2012) that the effective use of laboratories in science education enhances the quality of education and

students' understanding. Furthermore, only 20.8% of teachers agreed that they use textbooks with resourceful information, with a mean score of 2.32 and a standard deviation of 1.23. This implies that the utilization of textbooks in school libraries, which can aid students in improving their learning conditions, was still at a relatively low level in the selected public secondary schools in Gasabo District. Okeke (2013) believed that textbooks serve as an essential source of information for students, guiding their research and understanding of subjects. However, the Table 3 stated that 17.6% of teachers approved that their schools promote the use of ICT facilities with the mean of 2.26 and the standard deviation of 1.16. Aguele(2007) argued that using ICT facilities can offer opportunities to teachers for obtaining educational resources from the internet to enrich course content and also can improve teaching and learning processes. In spite of, 15.2% teachers who said that they use standard materials of science laboratories at the mean of 2.24 at the standard deviation of 1.09. that proved that the use of learning materials in schools were still very low and can affect negatively the students' academic performance of students in science subjects. The findings in the Table 3 revealed that 15.2% of teachers agreed that they have well- equipped libraries that facilitate students learning conditions with the mean of 2.24 and 1.15 of standard deviation. The implication simply meant that using school libraries by students was still low as far as improving their academic performance is expected. On the other hand, 13.6% of teachers affirmed that they have well-equipped laboratories at the mean of 2.07 and 1.14 of standard deviation which shows that the majority of schools do not have equipped laboratories as instructional resources that support the teaching and learning activities. Finally, only13.0% of teachers agreed that they have adequate ICT facilities which they use in teaching. That meant that the majority of schools do not have ICT facilities that can make teaching and learning easy processes that lead to improvement of academic performance. Mutai (2006) asserted that learning is strengthened when there are enough reference materials such as text books, exercise books, teaching aids and classrooms as well as well-equipped school libraries and laboratories.

Table 4: Teachers' responses on the level of instructional materials

Extent of instructional materials used	Frequency	Valid Percent
Low extent	48	45.7
Moderate extent	42	40.0
High extent	15	14.3
Total	105	100.0

From the Table 4 which indicates the extent on the use of instructional materials in selected ordinary level public secondary schools located in Gasabo district. The majority of respondents as 45.7% of teachers indicated the use of instructional materials were still at a low extent which may also affect both students and teachers' performance while 40.0% of teachers revealed that the use of instructional materials were at a moderate extent. Only 14.3% of teachers stated that there was a high extent related to the use of instructional materials in school setting.Manda, 2014) argued that the extent to which using instructional materials in teaching and learning process promote the quality of education and effective delivery of curriculum designed.

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Directors of studies responses from guided interview on instructional resources

The directors of studies were given guided interview on the theme based on the "*use of instructional materials in selected ordinary level public secondary schools selected in Gasabo district*". The respondents stated that "the instructional materials that are used to promote teaching and learning activities are like school textbooks and well-equipped libraries and laboratories and their equipment's, ICT facilities especially computers". The directors of studies from selected public secondary schools in Gasabo district also approved that schools should promote the use of instructional materials by having well equipped school infrastructures that facilitate teaching and learning activities.

Table 5: DOS responses on students' access to school library and laboratory

Frequency of students access	Library		Laboratories	
	Freq	%	Freq	%
Every day	0	0.0%	0	0.0%
Once a week	9	64.3%	1	7.1%
Twice a week	3	21.4%	0	0.0%
More than twice a week	2	14.3%	5	35.7%
Never	0	0.0%	8	57.2%

The Table 5 presented the responses provided by director of studies of selected public secondary schools located in Gasabo district on the students' access to school library and laboratories. The respondents as 64.3% and 7.1% of DOS indicated that students get access to school library and laboratory once a week respectively. However, most of director of studies indicated that their students never access laboratories due to the lack of laboratory infrastructures. On the other hand, 35.7% and 14.3% of DOS revealed that their students have access to school laboratory and library more than twice a week respectively while 21.4% of DOS presented that the school students have access to school library twice a week. Ruth, Eduard and Alex (2015) stated that students' academic performance depends on teachers' reference books and guides got from school library. They also added that students and teachers' who use textbooks, charts, classrooms and laboratory apparatuses and teaching and learning materials promote teaching and learning activities.

4.2 Level of students' academic performance in selected ordinary level public secondary schools

The respondents of the study 105 teachers' submitted questionnaires that were given to them provided their responses while 14 directors of studies were given guided interview. Both teachers and directors of studies provided their responses related to the level of students' academic performance in selected ordinary level public secondary schools in Gasabo district.

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Table 6: Students' responses on their level of academic performance

Statements	SD		D		N		A		SA		Mean	Std
	Freq	%	freq	%	freq	%	freq	%	freq	%		
Students of this school have self-motivation in their learning activities.	7	35	4	20	5	25	3	15	1	5	2.15	1.11
Students of this school get improved grades in various assessments	6	30	5	25	3	15	4	20	2	10	2.22	1.11
Students of this school have regular class attendance.	8	40	3	15	2	10	5	25	2	10	2.25	1.05
There is an improved students' completion rate in this school.	6	30	4	20	2	10	6	30	2	10	2.33	1.18
Students of this school get improved scores in class homework and assignments.	7	35	4	20	2	10	4	20	3	15	2.10	1.20

The findings from the Table 6 presented the level of students' academic performance in selected ordinary level public secondary schools in Gasabo district. The majority of students were at the mean of 2.33 and standard deviation of 1.18 indicated by 30% who agreed on the improvement upon their completion in the school. That implied that due to low use of instructional materials, students may perform poorly in various established academic activities. Johnson and Elder (2014) indicated that the level of students' learning condition and understanding enhance the students' schooling scores. On the other hand, only 25% of students had mean of 2.25 and standard deviation of 1.05 who indicated that students of their school had regular class attendance. Furthermore, 20% of students had the mean of 2.22 and standard deviation 1.11 and meant that the students in selected public secondary schools of Gasabo district experience an improvement of grades in various assessments. In addition, 15% of students indicated with the mean of 2.15 and 1.11 of standard deviation that students of selected ordinary level public secondary schools in Gasabo district were self-motivated in their learning activities. The percentages were evidences showing that the majority of students indicated a low level of academic performance. Ruth, Eduard and Alex (2015) stated that when teachers use educational resources effectively helps students improve their performance in school assessments. However, 20% of students indicated with the mean of 2.10 and 1.20 of standard deviation that there were improved scores in class homework and assignments.

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Table 7: Teachers' responses on the level of students' academic performance

Statements	SD		D		N		A		SA		Mean	Std
	Freq	%	freq	%	freq	%	freq	%	freq	%		
Students' have improved results in various assessments	39	31.2	51	40.8	19	15.2	9	7.2	7	5.6	2.15	1.11
Students' regular class attendance	33	26.4	56	44.8	19	15.2	9	7.2	8	6.4	2.22	1.11
Students' school completion level	30	24.0	55	44.0	22	17.6	14	11.2	4	3.2	2.25	1.05
Students' improved scores in assignments	28	22.4	61	48.8	12	9.6	14	11.2	10	8.0	2.33	1.18
Active participation of students in school activities	48	38.4	43	34.4	16	12.8	9	7.2	9	7.2	2.10	1.20

The findings from the Table 7 presented the level of students' academic performance in selected ordinary level public secondary schools in Gasabo district. The majority of teachers with the mean of 2.33 and standard deviation of 1.18 indicated by 19.2% who approved the improvement of students' scores in class assignments. That implied that low use of instructional materials, may lead students to perform poorly in various established academic activities. Johnson and Elder (2014) asserted that the level of students' learning condition and understanding enhance their' schooling scores. On the other hand, only 14.4% of teachers with the mean of 2.25 and standard deviation of 1.05 affirmed that there was an improved students' school completion rate while the majority disagreed with the statement that was given. However, 13.6% of teachers agreed with the mean of 2.22 and standard deviation that the students in selected ordinary level public secondary schools of Gasabo district have a regular class attendance which was indicated to be low. Despite, 12.8% of teachers who agreed with the mean of 2.15 and 1.11 of standard deviation that students from selected ordinary level public secondary schools in Gasabo district get improved results in various academic assessments. That was also an evidence showing that the majority of students indicated a lower level of academic performance. Ruth, Eduard and Alex (2015) stated that when teachers use educational resources effectively helps students improve their performance in school assessments. More so, 14.4% of teachers with the mean of 2.10 and 1.120 of standard deviation, highlighted active participation by students in various school activities. That implied that students from selected ordinary level public secondary schools do not use enough facilities to strengthen their academic activities. According to Yusuf (2008), the success related to any educational institution, should be focused on effective students' participation and daily motivation in school activities so as to produce the standard students learning outcomes.

Directors of studies responses from guided interview on the level of academic students' performance

Directors of studies in selected public secondary schools of Gasabo district were given a guided interview on the theme based on "*the level of students' academic performance in selected public secondary schools*". The respondents indicated that the students' academic performance can be determined by the level of students' results in various assessments, level of completion rate and the level of students' participation in various schools' activities. However, the respondents also added that the academic performance of students is not adequately improved due to various

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circumstances such as inadequate teaching and learning process and insufficient school facilities supposed to strengthen the school academic activities and performance. The appendix VIII presented the academic performance of the selected ordinary level public secondary schools in Gasabo district in FEB, MARCH and APRIL in science subjects (biology, chemistry and physics) and mathematics in ordinary level of education.

4.3 Effect of instructional materials on students' academic performance

This study established the effect of instructional materials on academic performance of students in selected ordinary level public secondary schools in Gasabo district. In, this study linear regression analysis was performed to indicate the extent to which one variable can affect another. In addition to that, correlation was considered in order to find out the relationship between variables in the study; instructional materials usage and students' academic performance. The qualitative findings from guided interviews were presented in the textual model.

Effect of instructional materials on students' academic performance

The findings presented in Table 8 presents the model summary related to the effect of instructional materials and students' academic performance where linear regression analysis was performed.

Table 8: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.729[a]	.532	.528	.72411

a. Predictors: (Constant), Instructional materials usage

The Table 8 presented by the modal summary based on the effect of instructional materials usage on students' academic performance where the R Square was .532. And 53.2% usage of instructional materials was able to affect the students' academic performance in selected ordinary level public secondary schools. The other remaining 46.8% of students' academic performance can be affected by other variables. According to Cohen et al. (2003) availability of educational resources to schools and their utilization by teachers and students for effective teaching and learning processes has positive impact on students' academic performance.

Table 9: Regression coefficient

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	.577	.133		4.331	.000	.313	.840
	use of instructional materials	.677	.057	.729	11.817	.000	.563	.790

Dependent Variable: Students' academic performance

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The findings in the Table 9 from the respondents of this study presented that, the regression equation ($y = ax + b + \varepsilon$) thus y: dependent variable as students' academic performance, x: independent variable as instructional materials: $y = 0.729x + 0.677 + \varepsilon$. Thus, a 95 % confidence that the increase in the use of instructional materials can affect the students' academic performance lies between 56.3% and 79.0%. Owino et al. (2015) posed that the use of teaching-learning materials enhances the effectiveness of schools as these are the basic things that can bring about good academic performance in students.

Relationship between instructional materials usage and students' academic performance

The study also established the relationship between instructional materials and students' academic performance and their findings are presented in the Table 10.

Table 10: Relationship between instructional materials usage and students' academic performance

Correlations

		Use of instructional materials	Students' academic performance
Use of instructional materials	Pearson Correlation	1.000	
	Sig. (2-tailed)		
	N	125	
Students' academic performance	Pearson Correlation	.729**	1.000
	Sig. (2-tailed)	.000	
	N	125	125

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

The Findings from the table 10 indicated that there is a statistical significance positive relationship between instructional materials usage and students' academic performance in selected ordinary level public secondary schools thus P-value = .000 which less than 0.01 as the level of significance and Pearson coefficient of correlation r = .729. That also implied that the use of instructional materials is highly associated with students' academic performance. Kalio and Ndifon (2017) revealed that there is a positive relationship between instructional materials and teacher's facilitation of skilled based subjects due to having relevance instructional materials that lead to conducive learning environment and improved students' academic performance.

Students' academic performance by teacher's working experience

The study sought to determine the extent to which the students' academic performance may vary due to working experience of teachers and results are in Table 11.

Table 11: Students' academic performance by teachers' working experience

Working experience	Mean	Std. Deviation
Less than 1year	1.78	1.11
1-5years	3.17	1.72
6-10years	2.15	.97
10years and above	1.84	.89

From the Table 11 which showed the change in students' academic performance due to working experience of teachers. It was revealed that teachers whose working experience was between 1-5years proved to have the highest chance to improve the students' academic performance with the mean performance of 3.17 followed by teachers whose working experience, lies between 6-10years with the mean of students' academic performance of 2.15. And, it was realized that the mean performance of teachers whose working experience of 10years and above was 1.84. Surprisingly, the mean performance of teachers with working experience less than 1year was noted to be of 1.78. That implied that the academic performance of students can mostly be improved by teachers with 1-5years of working experience. According to Munguti(2016)enhanced learning, should refer to teachers' commitment and discipline that help to achieve objectives of the course need to be presented clearly and in a lively manner to enable learners to spend more time engaged with the content in order to improve their academic performance.

Students' academic performance by teacher's education level

The study was interested to investigate the changes made in students' academic performance by educational level of teachers and their results are presented in Table 12.

Table 12: Students' academic performance by teacher's educational level

Educational level	Mean	Std. Deviation
Diploma	1.88	1.03
Bachelor degree	2.05	1.12
Master degree	2.31	1.11

The results in the Table 12 showed that mean of students' academic performance is 2.30 to teachers having masters' degree which was followed by mean of 2.05 of students' academic performance to teachers having bachelor's degree. Finally, the results also showed the mean of 1.88 of students' academic performance to teachers with diploma as their level of education in teaching profession. That also implied that students' academic performance may vary due to improvement of teacher's education level. Abrami et al., (2011) stated that improvement of the relationship between students and teachers is important and positively affects students' academic and social development which may change due to teachers' level of education and skills.

Directors of studies' responses from guided interview to the effect of instructional materials on students' academic performance

The directors of studies of the selected public secondary school were given guided interview on the theme related to "*the effect of instructional materials on students' academic performance*". The majority of respondents agreed that the use of instructional materials affect highly the level of students' academic performance due to the fact that instructional materials strengthen conducive teaching and learning activities. However, the respondents also added that the level of having instructional materials by schools may cause negative impact to students' academic performance as they were indicated to be at a lower level and reduce the capacity of teaching and learning activities that may result to low level of students' academic performance.

4.4 Summary of findings

The objective of this study was to investigate the relationship between the usage of instructional materials and students' academic performance in selected ordinary level public secondary schools in Gasabo District. The findings revealed that the presence of equipped science laboratories accounted for 48.9% of the variation in students' monthly assessment scores (R-Square = .489). Additionally, the use of instructional materials had an impact on students' academic performance, explaining 53.2% of the variation (R-Square = .532). The correlation analysis further confirmed a statistically significant positive relationship between instructional materials and students' academic performance, with a correlation coefficient of .729. These findings indicate that the use of adequate instructional materials in school settings can positively affect students' academic performance. Furthermore, it was found that students' academic performance may be improved with an improvement in the educational level. Additionally, teachers with 1-5 years of working experience were associated with higher rates of students' academic performance, with a mean score of 3.17. These findings align with previous research. Usman (2013) argues that educational materials play a crucial role in achieving educational objectives and goals by enhancing effective teaching and learning, which ultimately leads to improved academic performance. Akinsanya (2014) emphasizes the importance of educational resources, as they contribute to proper teaching and learning, which is essential for achieving the goals of any educational institution. Overall, this study highlights the significance of instructional materials and their positive relationship with students' academic performance, emphasizing the importance of their adequate supply and utilization in educational settings.

5.0 Conclusion

The study concludes that the proper use of instructional materials, along with factors such as teacher qualification and student motivation, significantly impacts the variation in monthly grades. When instructional materials are utilized appropriately, they have the potential to expand the scope of education and enhance pedagogical outcomes, benefiting both teachers and students. Furthermore, the usage of instructional materials strengthens the relevance of education in an increasingly networked society, elevating the quality of education by making learning and teaching an active process connected to real-life experiences. Moreover, the use of instructional materials promotes collaborative, active, and lifelong learning. It enhances student motivation, provides better access to information and shared resources, deepens understanding, and fosters creative

thinking and communication skills. Essentially, the use of instructional materials transforms the learning process in schools and contributes to improved academic performance. By incorporating instructional materials effectively, teachers can create dynamic and engaging learning environments that facilitate student-centered approaches. Students are encouraged to be active participants in their learning, utilizing a wide range of resources to explore, analyze, and apply knowledge. This shift in learning methods cultivates critical thinking, problem-solving abilities, and effective communication skills, ultimately leading to enhanced academic performance. It is important to note that the proper use of instructional materials should be coupled with other factors, such as qualified teachers and motivated students, to achieve the best educational outcomes. The study highlights the significant role of instructional materials in shaping the learning experience and emphasizes the need to leverage their potential to promote effective teaching and improve students' academic performance.

6.0 Recommendations

The recommendations presented aim to address various stakeholders and emphasize the importance of instructional materials in improving academic performance. Mobilizing parents for cost sharing and engaging the private sector in investing in education are crucial steps to ensure an adequate supply of instructional resources. Teachers play a pivotal role in utilizing the available materials effectively, making the teaching and learning process more meaningful and engaging for students. Parents should consider schools with sufficient instructional resources when selecting educational institutions for their children. Educational managers need to prioritize curriculum stability to avoid disruptions and allocate sufficient budgets for instructional materials. By implementing these recommendations, collaboration among parents, teachers, and educational managers can enhance the availability and utilization of instructional materials, ultimately leading to improved academic performance and a more enriching learning experience for students. The researcher suggests that the further study can be done on Availability of Instructional materials and Students' academic performance.

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