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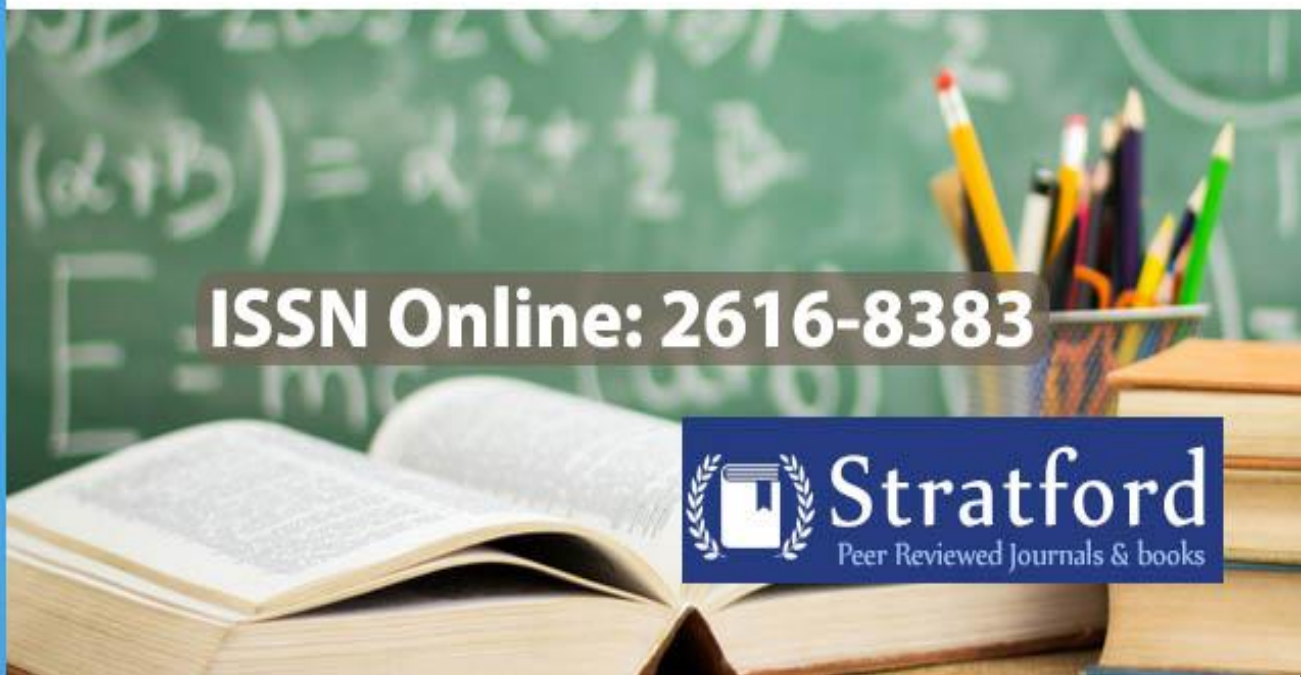

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The Use of ICT Resources and Teachers' Performance in Government Aided Secondary Schools in Rwanda

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Abstract

The effective use of Information and Communication Technology (ICT) resources plays a significance role in the improvement of teachers' performance and school outcomes that lead to the quality of education. Therefore, the purpose of this paper was to determine the relationship between the use of ICT resources and teachers' performance in Public and government aided secondary schools of Rwamagana District. This paper employed correlational research design. The target population comprised 110 people and sample size of 86 respondents got by using Solvin' formula. Observation schedule and questionnaire were used as instruments of data collection and analyzed by SPSS for quantitative findings and thematic approach for qualitative approach. The findings revealed that more than 50% of teachers use ICT occasionally as they use it one period per week while 48% of respondents stated that they use ICT at least 5 periods per week. However, the findings also revealed that more than 63% of respondents, their performances become high in all highlighted teaching practices when they use ICT. It was also found that there is a statistical significance relationship between the use of ICT resources and teachers' performance in public and government aided secondary schools P-value = .000 < .01 and r = .533. This paper also recommends that Secondary school teachers should be technologically knowledgeable and be equipped with ICT skills and also trained regularly on ICT use in teaching activities.

Keywords: *Information and Communication Technology, Teachers' Performance, Government Aided Secondary Schools and ICT resources.*

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1.1 Introduction

The use of ICT in education is not a new phenomenon; it is linked to the works of Skinner (1954) explaining his experiments with teaching machines. Skinner's work came up with a disappointment vis-à-vis the traditional methods of learning which were based on the teacher without exploiting the individual student potentials. Skinner proposed that experimental analysis of behaviour should be put into application to construct a teaching machine that would be able to present a sequenced set of ideas to students and reinforce their responses to direct behavioural capabilities. This ideas of Skinner led people to make programmed learning materials that finally became computer assisted instructions (CAI) which guides students to learn from programmed computer packages.

In Europe, ICT has influenced too many countries at the level of considering it and its basic concepts as the central part of education (UNESCO, 2002). According to OECD (2003) the need for ICT usage is a global need; it became a subject of great significance to all and very necessary for the modern society. When people are talking using mobile phones, writing short message, typing and sending emails, using Automated Teller Machines (ATM) to get money from the bank, watching games on the television or booking a place in an air plane, they are using ICTs.

In Africa, the state governments and educational institutions were obliged to purchase, install and use ICTs in all daily activities. According to Mpofu (2013), schools in Zimbabwe were using ICT in education and computers were given to communities including the rural schools. University lecturers in Zimbabwe were using ICT in Teacher Training Colleges that prepares secondary school teachers (Chitiyo, 2009).

Basing on the perspectives of constructivism in which students are expected to generate and produce knowledge and ideas through interactions with the community, teaching resources and environment, the role of ICT can be well interpreted (Young, 2008). Interaction with the community highlights the collaborative efforts between teachers and students to achieve shared goals. Interaction with teaching resources makes reference to the activity of using ICT resources such as printers, computer, projector, camera, the digital content and the interactive whiteboard.

In Rwanda, the government enhanced and streamlined the development in the ICT sector which has the mission of establishing a common understanding on the adoption of ICT by all educational institutions to support the effective teaching that equips learners with 21st century skills (MINEDUC, 2008). Though, Rwanda considers ICT as important tool for boosting the economy in which education sector plays significant role through the training of required human resources. By the year 2007, The Government of Rwanda supplied at least 10 computers to many secondary schools with electricity. Those machines were well equipped with basic Microsoft Office software that should help in the simulation of some course concepts.

Nevertheless, schools continued to face challenges in the teaching process. A research carried out in different learning institutions that were well equipped with computers showed that administrators were relatively possessive of NEPAD-supplied ICT equipment's but restricting students to use them (Were, 2006). The report continues saying that the infusion of ICT in Rwanda education curriculum as a subject became a source of conflict among teachers. A number of teachers wanted computers to be used in the teaching of ICT as a subject while others needed to use them when teaching other subjects such as mathematics, Biology and geography. This latter

group found it difficult to have access to computers as teaching with ICT in other subjects was not yet seen as schools' priority compared to relatively ICT resources that were available in schools.

1.2 Problem Statement

Technology has influenced learning and communication opportunities as well as business strategies. Wanjala (2005) revealed that the roles of ICT and how it influenced the way people learn, how they communicate and how they do business. The main goal of ICT in education policy for Rwanda is to provide access, equity, quality and relevance to education as the key principles underpinning Rwanda education policies. Despite, the implementation of this policy, MINEDUC launched and infused One Laptop per Child program in primary education and installed computer laboratories in different secondary schools since the year 2008 with the aim of facilitating teachers to use ICT in the learner-centred teaching approaches, carry out research and in collaborative learning (MINEDUC, 2008). However, school statistics of Rwamagana District show that in the year 2017, 4 out of 6 schools with computer laboratories were performing better while others performed poorly. In addition, computers distributed to schools are not effectively used in the teaching activities; according to MINEDUC (2016), more than 70% of all teachers do not use ICT to find out the content, to motivate students or to improve their professional development which leads to poor academic results of students. On the other side, teachers usually claim that trainings offered to them on the use of ICT in lessons are not sufficient. Thus, carrying out inquiry on the relationship between ICT tools usage and the performance of teachers in their everyday activities was very significant because it proposed remedies to shortfalls that were seen in ICT tools usage in teaching practices in secondary schools of Rwamagana District of Rwanda.

1.3 Objective of the paper

The objective of this paper was to determine the relationship between the use of ICT resources and teachers' performance in public and government aided secondary schools of Rwamagana District of Rwanda.

2.1 Literature Review

2.1.1 Teacher's core activities

Teachers' activities correspond to responsibilities that are common for all teachers all other the world: active learning and teaching, keeping order in the classroom or classroom management and carrying out class administrative tasks (OECD, 2014). The active teaching and learning combines all teaching related tasks that include lesson planning, organization of teaching resources, classroom instruction, co-teaching, field trips, remedial instruction, test related tasks, marking, grading and provision of feedbacks to learners.

Poon and Lee (2014) went in detail and classified activities for teachers in different sub-clusters: "teaching and learning, work to get work done, school administrative duties, communication and the professional development"

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Table1: Teachers' responsibilities and related tasks

Group or cluster	Tasks
Teaching and learning	Planning lessons, providing instructions to students and remediation, coaching or mentoring colleagues, field trips, management of tests and examination (elaboration, marking, and feedback to students).
Administrative duties	Filling school forms, participate in co-curricular activities, mentoring, attending meeting or other events in the school.
Official communication	Communicating to stakeholders through e-mail or other ways, Collaborate with colleagues, experts and parents, counselling learners.
Professional development	Attending trainings and courses, continuous professional development.

Source: Poon and Lee (2014)

2.1.2 Different ways of ICT use in teaching activities

Today, ICT is the term that looks very new compared to how it was called in the first days for the introduction of computers. According to Pelgrum (2001), the term "computers" has been replaced by Information Technology (IT) at the end of 1980's. This was to express the shift from the technology of computing to the capability of computers for storing and recovering information. The introduction of the word ICT appeared in the year 1992 when the e-mail began to be used by the public. In this time, Blurton (2002) tried to give the meaning of ICT as a collection of technological resources and tools that are used to communicate, to elaborate, store, manage and disseminate information. Similarly, Information Technology Association of America (2007) defined ICT in the form of a study providing the support through the use of computer based information systems. ICT considers the hardware (physical parts of an information system) and the software (programs that helps the computer to function).

Karimi (2010) on the other hand described ICT explaining that it includes both traditional technologies (television, radio and film/video) and today's technologies (mobile phones, internet, intranet, distance education and many others). This modern technologies intend to fulfil information processing and communication functions (Karimi, 2010). This means that ICT goes beyond computer studies and computer literacy skills. The present study considers the computer as a device used by teachers for students pre-instructional, instructional and non-instructional purposes during the teaching and learning process. Moreover, internet and computer's peripherals such as the printer, the projector and scanners operate through the computer and they are all considered as ICT resources.

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Integration of ICT means the use of ICT resources into daily classroom activities. When preparing learners for today's digital era, teachers are asked to play the key responsibility in using ICT tools which facilitate their teaching related activities and create a good atmosphere in the learning process. The role of ICT consists of increasing the quality, accessibility and cost efficiency of learning and teaching. According to Albilini (2006), ICT helps learners and the community to alleviate challenges of current globalization. However, it is better to remember that the infusion of ICT in teaching cannot be done in one step; Young (2003) said that it is a regular and continuous process with different steps to support teaching, learning and information resources.

Voogt (2003) tried to explain 3 functions of ICT in education: "*ICT as a supporting tool, ICT as a medium of instruction, and ICT as a tool for school management and organization*". From these perspectives, the computer Based Instruction (CBI) represents all activities related to computer use during the process of teaching. It is composed of Computer Aided Learning (CAL), The computer Management Instruction (CMI) and the Computer Assisted Instruction (CAI). According to Deepark (2006), The Computer Aided Learning is a learning environment in which the computer is considered like other teaching materials such as textbooks, reference books, worksheets, chalkboards, pen, flash card, calculator and charts that can be used in different teaching methods. In this regard, teachers use the computer to explore the content from multimedia (internet, flash discs or CDs) and to explain it clearly, in a better way which transforms the process of learning very joyful, fun, interesting and easy to understand (Deepark, 2006).

This technique of using ICT in teaching can be made in 3 different ways: whole class instruction, teacher-directed assignments and teacher's self-learning. During a whole class instruction, the lesson can be taught by showing some thing on the computer in one step of the lesson or in the entire lesson. The teacher-directed student assignment refers to the way through which teachers direct students to search for information through the use of internet or to use computer applications such as word, spread sheets, power point or publisher software for preparing their projects, reports, newsletters and presentations.

The way through which teachers use ICT resources to update their pedagogical content knowledge is the self-learning for individual teacher. Teachers can do it by using internet to collaborate with colleagues or other experts or through searching information on the internet. Teachers use computers not only when they are teaching but also in different activities related to the classroom management. The Computer Managed Instruction (CMI) is a teaching related activity whereby a computer is used to offer learning resources, formulate learning objectives, keep records, and to assess learners' performance for progress tracking and to prescribe differentiated instruction (Harris, 2000). In this way, students are not necessarily needed to work on the computer but they may sit for tests on line.

According to Harris (2000), spreadsheets, question bank and databases analysis software are examples of software that function as CMI applications but internet, whatsapp, face book and MS-word play a same function. In general, the CMI deals with the utilization of computers in the management of teaching related activities: material production, completing the scheme of work, lesson plan, monitoring the attendance of students, assessment of students' performance and communication with students. Examples can be described as follow: during instructional material production, teachers can produce teaching resources such as hand-outs, worksheets, visuals, tables,

diagrams, graphs to be viewed on the computer, presenter by the use of power point or to be printed to get hard copies.

Teachers can publish announcements, activities, schedules, and homework via internet and this is summarized in school e-circulars' activities. Under the communication, by the use of internet, teachers can share information with educational stakeholders: parents, students or other professionals in education. This can be done on email, whatsapp, Skype, face book and instagram. Teachers can use the computer to formulate questions, test papers and they can assign tests to be done by learners on line or offline by the use of their computers, phones or tablets. This shows role of ICT in the assessment of student's performance.

During the record keeping, teachers generate and keep student's assignment, grade records and their attendance in the computer. According to Ancycropedian.com, Computer Assisted Instruction (CAI) is an approach of teaching directly by the use of the computer. The term CAI has been used with the same meaning as computer based learning, computer assisted learning or computer enhanced instruction.

In this regard, the Computer Assisted Instruction uses teaching software in one of the following teaching approaches: problem solving, drill and practice, simulation and tutorial (Hazewinkel & Michiel, 2001). Tutorial is the way of using computers in which a teacher can ask questions, present information, monitor responses, keep records and provide feedback. By the use of a computer, teachers can present a task to work on, provide feedback and notes on students' responses and summarize the results; this is called drill and practice. During simulation, teachers use ICT to show students an approximate real-life situation, a control of expenses, data representation or to perform operations.

In addition, teachers can use computers to show students how to solve basic problems by calculation, experiment or exploration. Basing on these ways of ICT use described above, it is necessary to transform and innovate the learning and teaching activity by integrating ICT into every day classroom practices but this observation underlines the need for more research to analyse the advantages of ICT and show what is required to effectively infuse it in the curriculum.

2.1.3 Advantages of ICT in the process of teaching and learning

The adoption of ICT is improving today's approaches of teaching and the process of learning. In the Western World countries, schools have invested too much money for ICT equipment's and infrastructure 30 years ago. In those countries, learners regularly use computers in different applications. According to Volman (2005), the infusion of ICT in school related activities enhances the constructivist learning and increases the responsibility of students in the learning activities. In addition, ICT boosts teacher's role in his/her activities to support, advize, and coach learners instead of transmitting knowledge.

ICT helps the teachers motivate students

The Motivation has always been very essential during the teaching and learning activities. According to Webb (2000), a motivating vision is the basic source of success in all societies and lifestyles. Webb admitted that when learning, the motivation depends on 3 basic elements: the first is to create a freedom fulfilling a need or a dream, the second is the love to lean where the learner

accepts risk and seeks opportunity, and finally the third is to accept to learn from failure to overcome barriers eventually encountered.

Lave (1998) confirmed that you cannot find a single magical formula that you can use to motivate learners but he gave some factors that affect a student to learn and to work. Those are the interest in the subject content, the opinion about its usefulness, the self-confidence, the desire for achievement, the patience and perseverance. Considering ICT and motivation, Lave (1998) admitted that ICT provides multisensory stimulations and real-world experiences when we consider its roles such as: colourful and attractive graphics designed by the use of software, interesting and illustrative animations made by the power point application, appropriate sound effects produced by the use of different multimedia.

ICT enhances the teaching activity

The teaching activity can be improved by providing to learners the access to learning and information sources and by helping them to visualize problems and the way of finding solutions. Lowther et al. (2008) mentioned that autonomy, capability and creativity are 3 characteristics that are needed to develop quality teaching and learning when using ICT. Through autonomy, when learners are using ICT they control themselves and their learning, they develop the competence of working by themselves and with colleagues in a collaborative way, they get the opportunity to build new knowledge, develop competences and accept learning from their own mistakes. In such a situation, the responsibility of the teacher is to organize learners and authorize them to do some tasks in pair or in groups. Furthermore, the autonomy enhanced by ICT facilitates the teacher to make his/her own materials and have more control over the subject content more than how it was in the traditional classroom without ICT integration.

Concerning the capacity, learners who have the confidence in using ICT can improve the ability and capability of applying effectively and efficiently their skills and knowledge. An example can be given in mathematics; the use of mathematical software like Geogebra or Cabri in geometry in the form of simulation can enable teacher to interactively show learners a range of situations concerning images and graphs in 2D and in 3D, which is not possible when using the chalk and talk method. For the creativity, students who use ICT in their learning process can optimize their creativity by discovering new multimedia resources and make more other learning resources in their own styles that can be saved through games, or videos on CDs, flash disks or other external disks (Gee, 2007). Therefore, one can conclude that the use of ICT when teaching enhances students' autonomy, ability, creativity and their capability.

ICT can increase productivity

ICT usage in teaching can help the teacher to save the time normally used for administration and record keeping (Roblyer et al., 2000). Internet can facilitate the teacher to get quickly more accurate information. With ICT, teachers can quickly and effectively produce their own teaching resources that can be more easily and qualitatively manipulated by students. By the use of ICT when presenting the content by Power Point, the time spent on the black board when writing can be used for other activities. Moreover, the teaching resources produced such as a graphic or a chart by the use of appropriate computer software are used for a while and revised to make them better

for the future. Therefore, ICT improves the cost efficiency and effectiveness of teaching and it increases the teacher's performance.

In addition, with ICT, teachers perform administrative activities as Balanskat (2007) explained that Typing and printing of official documents, lesson plans and worksheets; Designing and typing other documents such as school reports, time tables and tests; creating a database of teachers and pupils; Creating spread-sheets for maintaining the school budget and for keeping records of assessment; And if internet connectivity is available, computers can also be used for reading and responding to official e-mail messages and for creating and maintaining the official school website (Balanskat, 2007). In all aspect of administration, teachers and head-teachers highlight the benefits of ICT, especially the computer. According to Miller, Naido and Van Belle (2006, ICT helps to save time for doing different administrative tasks such as the calculation of sums and averages for students' marks. Therefore, it means that when we use ICT in a well-organized administration, it may raise the quality of education where for example the calculation of marks done in the computer provides accurate classroom data and reduces the human error.

ICT enables the teacher to duplicate excellence

Different educationists should be more sensitized to create a good culture of using ICT in education. In this way, more experienced and innovative teachers can be facilitated to share the computer based teaching aids and their experiences on how to teach the difficulty-to tech topics by making them available on the internet. Trough vivid experience, observation, persuasion and the continuous professional development, teaching staff can develop technological and teaching skills, their own practices and self-efficacy. With such skills, a teacher can effectively and efficiently use ICT to improve students' assessment and their results. According to Yelland (2001), when the teacher regularly uses ICT, his/her learners gain impressive and good results in local, regional and national tests or exams.

In addition, Using ICT in classroom can expand and make better a learning environment and help educators to provide more hands on activities (Kemp, 1995). In this way, learners become more engaged, active and cooperative in self-guided works, on directly or on-line teacher's demand and they become life-long learners. In a word, ICT is positively impacting the pedagogical approaches in schools. Its role is considerable in changing the teaching practices, improvement of school management and community services.

2.1.4 Teacher's belief on the use of ICT in the process of teaching and learning

Education in 20th century was characterized by the introduction of the improvement of ICT use in the teaching and learning process. Today, countries are placing a high budget in education to provide ICT related equipment's needed by teachers, to improve infrastructure and to train teachers on how they can improve their way of working. Regardless of the effort made, many countries are facing the same challenges concerning teachers who do not maximize the usage of ICT tools in classroom (Albirini, 2006). This problem continues to be observed in all countries all over the world even though it is proven that learners' achievement can be improved when ICT is well used in the classroom (Nakayima, 2011).

Different researchers tried to analyze causes affecting the adoption of ICT in the classroom (Capan, 2012; Dudeney, 2010; Virkus, 2008) and they found that teachers' belief about the role of ICT in teaching is the main barrier for the use of ICT in classroom.

In addition, Chien, Wu and Hsu (2014) clarified that the integration of ICT in lessons depends on individual's self-perceptions. They listed and explained individual's factors taken as barriers to ICT integration, those are the lack of positive attitudes, competence and confidence of teachers. Therefore, planners of the integration of ICT in education should focus on how to instil in teachers the beliefs that are in favour of ICT in education. The school manager should ensure they provide regular and sufficient support needed by teachers to use technologies in the classroom; Teachers should be given opportunities for interaction among them and facilitated to use ICT resources that are available in the school. This should be an implanted culture to be accompanied by regular trainings for teachers to help them upgrade themselves and make easier and well enhanced the integration of ICT in the teaching related activities.

2.1.5 The role of ICT policy in teaching and learning activities

ICT policies for different countries enhance access and emphasize the importance of enhancing the access to ICT resources and to internet connectivity. The policies show how to develop ICT skills among learners, young people and the general public and they clarify the importance of teacher training on ICT. For some countries, their ICT policies are more clear as they emphasize the need for the digital content, education portals and the need for the digital content in the local languages (Trucano, 2005).

ICT in education policy generally articulates a vision and the implementation plan which focuses on practices and sustainable initiatives that can be taken in a short term to move towards that vision. This is the reason why many countries such as Rwanda have established ICT policy implementation plans in five years increments: after five years, 10 or 15 years. Particularly, Rwanda has approved a new ICT policy in education since the year 2016. In this ICT policy, the implementation plan was designed and accompanied by annual activity plan starting in 2016 to the year 2019.

According MINEDUC (2016), in the ICT in Education Policy the following objectives are highlighted: Firstly to develop a competent and relevant ICT professional base to meet industry needs where teachers and students will be encouraged and empowered to take ICT as an integral part of the education process; Secondarily, it has to increase ICT penetration and usage at all educational levels where schools will be transformed into "Smart Schools" and devices with appropriate education software distributed to students and teachers. Thirdly, ICT in education policy will help to develop Educational leadership and teacher's capacity and capability in and through ICT to provide to all teachers different training courses per year on ICT integration in education.

Even though Rwandan ICT in Education policy is well prepared, it is relishing some challenges related to the enhancement of teachers' ICT competences, school ICT resources and infrastructure in all schools and particularly in rural areas where electricity is not yet installed and internet connection is missing.

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3.0 Methodology

This paper adopted correlation research design in order to find whether there is a positive correlation, negative correlation or zero correlation between variables. The target population comprised 110 people and sample size of 86 respondents got by using Solvin' formula. Observation schedule and questionnaire were used as instruments of data collection. Purposive sampling followed by the stratified sampling and simple random sampling techniques were used as sampling techniques.

4.0 Findings

This paper was established to determine the relationship between the use of ICT resources and teachers' performance in public and government aided secondary schools. This paper performed descriptive analysis based on the use of ICT resources and teachers' performance in public and government aid secondary schools as well as the relationship between variables.

4.1 Use of ICT resources

ICT usage in school was the main factor in this paper as it shows the likely hood that the school embraced ICT in the teaching activity. Therefore, this paper described the use of ICT resources in public and government aid secondary schools and presented in Table 2.

Table 2: Use of ICT resources per week

ICT usage	**Mean**	**SD**	**Percentage**				
			More than 3 times(5)	**Three times (3)**	**Once (2)**	**Occasionally(2)**	**Never(1)**
U1: Creating documents using word processor and printing them	3.08	1.134	17.7	13.9	29.1	38.0	1.3
U2: Using spread sheet to organize and calculate data	2.54	1.174	10.1	11.4	15.2	49.4	13.9
U3: Searching on internet to obtain teaching resources	4.07	1.083	44.3	34.2	8.9	10.1	2.5
U4: Manipulating the presentation software	2.59	1.203	15.2	2.5	20.3	50.6	11.4
U5: Manipulating images using a computer, cameras or scanner	2.68	1.286	12.7	13.9	21.5	32.9	19.0
U6: Using email or other chat rooms	2.94	1.34	20.3	16.5	11.4	41.8	10.1
Average	**2.98**	**1.20**					

Apart from "searching on internet to obtain teaching resources" done more than 3 times per week as confirmed by 44.3% of respondents, the results show that more teachers use ICT occasionally. This was confirmed by the high percentage of the percentage of respondents who use ICT occasionally: the use of spread sheet (49%), Manipulating the presentation software (50.6), Using email or other chat rooms (41.8%). The variance for all subscales is more than 1, this shows that answers for respondents do not converge to their means. This is the reason why the average mean became 2.98.

Table 3: Frequency of ICT usage

Responses	Frequency	Percentage
Not used	3	3.8
Occasionally (1 period per week or less)	36	45.6
Moderate (2-4 Periods per week)	30	38.0
Extensive (at least 5 Periods per week)	8	10.1
Sub-Total	78	98.7
Missing	2	2.5
Total	**79**	**100.0**

From the Table 3, the results show that about 4% of respondents do not use ICT and about 46% use it occasionally. The total number of teachers who use ICT occasionally and those who do not use it makes 50% of all respondents. Those who use it in a moderate way together with teachers who use ICT in an extensive way make 48% of all respondents. Few teachers (10%) use ICT at least in 5 periods per week.

These responses paint a severe picture in which many teachers either out of lack of motivation or due to other problems are not using ICT in the teaching activity. These findings confirm the observation made by the researcher under items on observation schedule in which some ICT resources available were found to be not sufficient and depicted a scenario in which teachers are reluctant to use those resources in teaching their subjects. These results illustrate the reason why the researcher decided to investigate why teachers do not use ICT in the lessons as highlighted in the statement of the problem.

Despite this discouraging result, there is a group of few teachers (10%) very committed to using ICT into the teaching and learning process as they integrate it in more than 5 periods (lessons) per week. Though they are few, they make a good example of commitment, and show promise of driving the objectives of ICT in education policy.

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4.2 Performance of teachers

To examine the results of the variable P(Teachers' performance), teachers were asked to provide the level of performance in each of 6 teaching practices named as the subscales P1, P2, P3, P4, P5 and P6 described as follows:

P1: Illustrating subject related concept,

P2: Organizing and summarizing students' results,

P3: Motivating and engaging students to learn and change attitudes and values,

P4: Solving complex problems and helping more students to succeed,

P5: Information collection and teaching material production, and

P6: Communicating and sharing information with educational stakeholders.

Teachers rated their performance level from 5 to 1 corresponding to Very High, High, Medium, Low and Very Low performance. The Table 4 gives the means, standard deviations and percentages for respondents on each subscale of P.

Table 4: Levels of Teachers' performance

Teachers' performance	Mean	SD	Percentage				
			Very High	High	Medium	Low	Very Low
P1: Illustrating subject related concepts	3.68	.927	13.9	54.4	21.5	6.3	3.8
P2: Organizing and summarizing students' results	3.72	.999	20.3	45.6	25.3	3.8	5.1
P3: Motivating and engaging students to learn and change attitudes and values	4.05	.918	32.9	48.1	12.7	3.8	2.5
P4: Solving complex problems and helping more students to succeed	3.68	.981	16.5	51.9	19.0	8.9	3.8
P5: Information collection and teaching material production	3.75	.819	13.9	55.7	25.3	2.5	2.5
P6: Communicating and sharing information with educational stakeholders (parents, students)	3.645	1.132	22.8	40.5	22.8	6.3	7.6
Average	**3.75**	**0.96**	-	-	-	-	-

The results show that many teachers accepted their performance is high in all highlighted teaching practices with the mean greater than 3.6. The percentage of respondents who admitted this level of performance is at least high is greater than 63.3% for all subscales

In addition, the standard deviations are less than 1 which indicates that the responses converge towards the means except P6 where the standard deviation is greater than 1.

However, a considerable number of teachers accepted that they have a low or very low performance in some activities when ICT is used. Indeed, 10.1% of respondents perform at low level to illustrate concepts, 12.7% to solve complex problems, 8.9% to organize and summarize students' results, 6.3% to motivate and engage students to learn and change attitudes and values, 5% to collect Information and produce learning materials and 13.9% perform at the low or very low level to communicate and share information with educational stakeholders (parents, students).

More other, many teachers confirmed they perform at the medium level in the very crucial activities: 25.3% of teachers accepted they perform at the medium level in organizing and summarizing students' results and 25.3% in correcting information and producing teaching and learning materials. As 30% of teachers do not know to use ICT to find notes and teaching materials through internet or using other software, this means that the expectation of MINEDUC to use ICT to solve the problem of insufficiency of textbooks and other teaching and learning materials will not be attained. This necessitates other strategies to instil in teachers the culture of using ICT in education.

4.3 Relationship between the use of ICT resources and teachers' performance

This paper presents the correlation between the use of ICT resources and Teachers' performance in public and government aided secondary schools and presented in Table5.

Table 5: Correlation between ICT usage and teachers' performance

	Correlation		ICT usage in Teaching	Teaching performance
Spearman's rho	ICT usage in Teaching	Correlation Coefficient	1.000	.533**
		Sig. (2-tailed)	.	.000
		N	79	79
	Teaching performance	Correlation Coefficient	.533**	1.000
		Sig. (2-tailed)	.000	.
		N	79	79

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

Findings showed that there is a statistical significance relationship between the use of ICT resources and teachers' performance as P-value = .000 < .01 as the level of significance and Spearman's rho correlation coefficient of .533. This also implies that the effective use of ICT resources can improve the performance of teachers in daily activities.

5.0 Summary of major findings

The findings of this paper based on objective which was to determine the relationship between the use of ICT resources and teachers' performance in public and government aided secondary schools of Rwamagana District of Rwanda. Therefore, as reflected in this paper, the relationship between

variables was established as produced by Spearman's rho correlation coefficient. It was found that there is a statistical significance between the use of ICT resources and teachers' performance in public and government aided secondary schools of Rwamagana District of Rwanda.

6.0 Conclusion

From the findings and the corresponding discussions, this paper concludes that the effective improvement in use of ICT can lead to improvement of teachers' performance at higher level in the teaching and learning process in secondary schools. This means also that teachers who need to perform well in their teaching practices should regularly adopt the use of ICT in their daily activities.

7.0 Recommendations

This paper recommends the following recommendation as a result of the major findings and discussions:

Teachers should regularly adopt the use of ICT in their daily activities so as to perform well in their teaching practices.

The Ministry of education and the District should improve the financial support to public and government aided schools in order to finance and maintain ICT infrastructure in the respective schools.

Secondary school teachers should have regular training on ICT use in teaching activities in order to be equipped with ICT skills.

The school head teachers should make regular assessment so as to identify weaknesses and strengths in the use of ICT in schools among teachers and the ways of improving the strategies in order to make effective implementation of ICT in teaching and learning linked to ICT in education policy.

7.1 Recommendations for further studies

This paper based on use of Information and communication technology and the performance of teachers in public and government aided secondary schools in Rwamagana district of Rwanda. Therefore, further study could explore the role of ICT skills and related pedagogy provided by Pre-service Teacher Training Colleges on teacher's performance in Rwanda.

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