

## Influence of Teaching Aids Usage on Students' Academic Performance in Public Secondary Schools in Rwanda.

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**Abstract:** The study was conducted to examine the Influence of teaching aids usage on students' academic performance in public secondary schools in Nyarugenge District, Rwanda. The study achieved three objectives: To identify the teaching aids used in teaching and learning procedure in public secondary schools in Nyarugenge District, Rwanda, to evaluate the students' academic performance due to the use of teaching aids in public secondary schools in Nyarugenge District, Rwanda and lastly to assess the relationship between teaching aids and students' academic performance in public secondary schools in Nyarugenge District, Rwanda. The researcher adopted descriptive survey design because the study sought to gain insight into a phenomenon as a way of providing basic information in the area of study. The researcher used simple randomly sampling to select the schools in Nyarugenge District, Rwanda. The population of study was 620 which included 150 teachers, 10 head teachers, 10 deputy head teachers and 450 students in 10 public secondary schools in Nyarugenge District. To determine the sample size of teachers and students, simple random sampling technique was used. The researcher utilized questionnaire and interview guides as instruments of data collection. The interview guide was solely for teachers and head teachers while questionnaires was for teachers and students. Data collected was analyzed using excel program and presented in form of tables and graphs applying descriptive statistics (frequency, percentages, mean and standard deviation). The findings indicated that most commonly used teaching aids in secondary schools are graphs and charts, visual aids, computer and multimedia materials and blackboard while the least used are audio aids and projector. Additionally, teachers and students were of the opinion that students' academic performance improved due to use of teaching aids like graphs and charts, visual aids and computer and multimedia materials. Moreover, Karl Pearson coefficient of correlation ( $r$ ) was 0.881, 0.847, 0.536, 0.378 and 0.382 for visual aids, computer multimedia aids, graphics and charts, audio aids and projectors respectively an indication that there is a high positive correlation between teaching aids save for audio aids and projectors and students' academic performance. The study recommends that teachers and school administrators should embrace the use of teaching aids in teaching and learning in their schools, teachers should be trained on the use of teaching aids and proper monitoring should be done to ensure that the teaching aids are properly and effectively used and lastly the ministry of education should make efforts to ensure that teaching aids are available in schools for teachers and students to use.

**Keywords:** Teaching Aid, Academic Performance, Public Secondary Schools

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### I. Introduction

#### 1.1 Background

Teaching aid is an object that can affect the learners in studying and may help them to acquire needed ability to associate with others to improve teaching and learning performance. Ngirabakunzi .F (2017) talked about instructional resources (teaching aids) used in teaching English subject in secondary schools in Rwamagana District. He reported that instructors use mixed methods in teaching namely the modern method which involves use of teaching aids in teaching and the traditional method which mainly involves use of chalkboard and talking. He reported that use of visual aids (graphics and photographs) in teaching subjects like English was more effective and led to improved students' academic performance than the traditional method of using chalkboard. This is an indication that it's better to use teaching aids in teaching and learning in order to improve academic performance in schools.

Makyikyeli, (2003) indicated that, the purpose of teaching aid is to get a significance and making sense of thought between the educator and the learner. Juceviciene (2008) talked about learning as a self-motivated process, indicator of knowledge progress and always affects teachers' attitude. Instructional materials are identified as materials which teachers utilize in delivering a lesson. The materials can also be used by students in following up the instructor during teaching process. Therefore, it can be understood that in classroom sitting, the

instructor is able to use teaching aid during learning process. Teaching aid is considered as an instructional aid like book, chalkboard, images. The Blackboard is the figure of old teaching aid, (Gursul and Tozmaz, 2010). According to Sabreena Ahmed & Chris Conlan (2011), rural educational institutions have small budget than urban areas. "In the schools where technology is not accessible, teachers resort to old-style mode of teaching to make lessons active and motivating,(Conlan& Ahmed, 2011). According to Damodharan&Rengarajan(2010), traditional method of teaching involves teachers using traditional teaching aids like blackboard. They further stated that first-hand technology significantly improves teaching and learning process whereby media is used to translate lesson into digital form for demonstration in classroom. According to Bell(2002), interactive white board is an excellent tool for a constructivist educator. Additionally, the pedagogy arises visibly and new procedures offer new potentials for this education methodology.

### **1.2 Role of teaching aids in teaching and learning**

Teaching aids play a great role in enlightening learners' academic performance in classroom because of increasing participation and involvement due to motivation created by teachers and learners in classroom sitting. Vandiver (2011) in his study indicated that quality and educational adequacy of educational facilities were significantly associated with students' academic performance. Owoeye and Yara(2011) in his study looked at the relationship between educational facilities and academic performance of the students. In addition, Yadar (2001) and findings from UNESCO report (2008) elaborated that instruction aids have emotional impact on learners' academic performance. Rasul, et al. (2011) stated that teaching aids play vital role in lesson delivery. Teaching aids offers in depth knowledge transmission and brings change in classroom setting hence contributes greatly to effective learning process. Mathew and Alidmat (2013) opined that teaching aids are usually perceived to be motivation materials and deliver enthusiasm in lesson and that real use of teaching aids results into an interesting learning situation.

### **1.3 Statement of the problem**

Researchers have investigated the influence of teaching aids usage on students' academic performance in different classrooms sitting and they reported that the outcome of teaching and learning process in terms of student grades has been impressive with the use of teaching aids. According to Mavida et al.. (1966), the use of teaching resources makes learners to be aggressive and attentive, adopt to the modern technological changes hence improve their academic performance. Rasul, et al. (2011), stated that teaching aids play vital role for delivering a lesson. Teaching create an effective process in learning and teaching aids offer in-depth knowledge in a classroom situation. According to Mathew and Alidmat (2013), teaching aids are frequently regarded to be a motivation and deliver enthusiasm in lesson and that real use of teaching aids leads to an interesting learning situation. These results show the integral role that teaching aids play in academic performance. Despite the technological efforts that Rwanda government has put in place to improve the education sector in Rwanda, the results of 2017 and 2018 national examinations showed that the performance was very low in most schools (REB). This scenario has motivated the researcher to conduct a research on the influence of teaching aids on students' academic performance.

### **1.4 Research Objectives**

- i. To identify the teaching aids used in teaching and learning procedure in public secondary schools in Nyarugenge District, Rwanda.
- ii. To evaluate the students' academic performance due to the use of teaching aids in public secondary schools in Nyarugenge district, Rwanda.
- iii. To assess the relationship between teaching aids and students' academic performance in public secondary schools in Nyarugenge district, Rwanda.

## **II. Literature Review**

Teaching aid is considered as an instructional aid like book, chalkboard or images. It can be defined as an object such as a globe, map or a specimen. Additionally, it can be a device like a computer utilized by instructor to improve classroom teaching. According to Kapur(2015), teaching aids make learning process beautiful and friendly depending on the innovative and creative capabilities of the teacher. Using teaching aids in learning process enhances motivation among learners and also saves time in lesson delivery. Abdullahi (2010) considered teaching aids like instructional resources as tools prepared or introduced in order to simplify learning process. According to Obama (2005), teaching aids are materials or things which can be utilized by instructors to enhance achievement of educational goals. Cronback, (2009) described teaching aids as vital components of teaching process. He continued by saying that the use of instructional resources invokes learner's curiosity hence making the learner to be attentive during learning process.

Brown et al, (2005) summarized the role of teaching aids as to promote meaningful communication and effective learning situation in addition to enhancing student's retention capability thus making learning more effective. On the other hand, teaching aids reduces the limitations of classroom teaching by ensuring the misunderstandable become understandable. Brown et al (2005) further stated that instructional resources form the foundation of creativity and innovation among teachers. Images of photography has progressively enabled teachers to make the learning process more effective as it improves overall understanding among students (Sibanda, (2009). Audio aids offer a quick and cost-effective alternative to text for connecting with the students and providing up-to-date content, interviews and discussions. According to Middleton (2009) audio aid demonstrated effectiveness in teaching facilitation. Felder & Solomon, (2000) specified a learning level by using Visual aids. Learners remember well what they have learnt by what they see such as pictures, diagrams, flow charts, films, and demonstrations. Therefore, visual aids are perceived more preferable in teaching and learning. Mayer & Massa (2003) and Riding (2001) reported that in more than 40% of schools, visual learning was incorporated in the learning process. Adkins Brown Syed (2002), Maal (2004) and Morrison et al. (2003) said that even though each classroom is likely to contain all sorts of learners, verbal and visual instructional materials is utilized for the same topic.

According to Ashaver & Igyuve, (2013), Audio-visual aids are materials with both audio and visual presentation to support teaching and learning by improving comprehension. Thus, by applying audio-visual aids, students' sensory memory is able to store pictures, words and sounds. This is elicited in the cognitive model of multimedia learning proposed by Mayer (2001). According to Rasul, et al. (2011), teaching aids play vital role in delivering a lesson. Teaching is an effective process in learning and teaching aids offer in depth knowledge and bring change in class situation. According to Mathew and Alidmat (2013), teaching aids are frequently regarded to be a motivation and deliver enthusiasm in a lesson and that real use of teaching aids alternates uninteresting learning situation.

### III. Research methodology

#### 3.1 Research design

Orodho (2009) defines research design as the complete method adopted by an individual to integrate the study variables in a coherent manner to aid in finding a solution to the research problem. This study adopted descriptive survey design. According to Criter Poronsky et al (2009) descriptive survey design focuses on attitudes, ideas, opinions and comments on the problem or issue under investigation. In survey design, the researcher administers a survey questionnaire to the population or a sample in order to collect data of interest without manipulation. It further involves observing the target population group in order to identify their characteristics and possibility of correlation between the variable characteristics.

#### 3.2 Target population

According to Jack (2006), the population is the group of people or objects with characteristics of interest to the researcher. This research targeted teachers and students of public secondary schools. The population size was 620 comprising of 150 teachers, 10 head teachers, 10 deputy head teachers and 450 students in 10 public secondary schools in Nyarugenge District, Rwanda.

#### 3.3 Sample Size

The Sample size is the number of persons or objects smaller than the population which is selected to form part of the study. According to Denscombe (2008) the sample is a true representative of the population and possess population characteristics. To calculate the sample size the researcher used Yamane (1967) .

$$n = \frac{N}{1 + N * e^2}$$

where n= Sample size

N= Target population

e= margin of error taken as 5% or 0.05

$$n = \frac{620}{1 + 620 * 0.05^2} = 243$$

The sample size is 243 summarized in the table below.

**Table 3. 1: Targeted population and sample size**

Respondents	Target population	Percentage(%)	Sample size
Head teachers	10	2	4
Deputy head teachers	10	2	4
Teachers	150	24	59
Students	450	72	176
Total	620	100	243

Source: Researcher, 2019

**3. 4 Data collection instruments**

Data collection instruments used in the study were questionnaires and interview to collect data from the sample population.

**IV. Research Findings**

The findings of this study are presented as per specific objectives which included to identify the teaching aids used in teaching and learning in public secondary schools in Nyarugenge district Rwanda, to evaluate the students' academic performance due to the use of teaching aids in public secondary schools in Nyarugenge District, Rwanda and lastly to assess the relationship between teaching aids and students' academic performance in public secondary schools in Nyarugenge District, Rwanda

**4.0 Questionnaire return rate**

The sample size of this study was 243 which constituted teachers and students. However out of the 243 questionnaires issued, 235 were returned. This represented a questionnaire return rate of 96.7%.

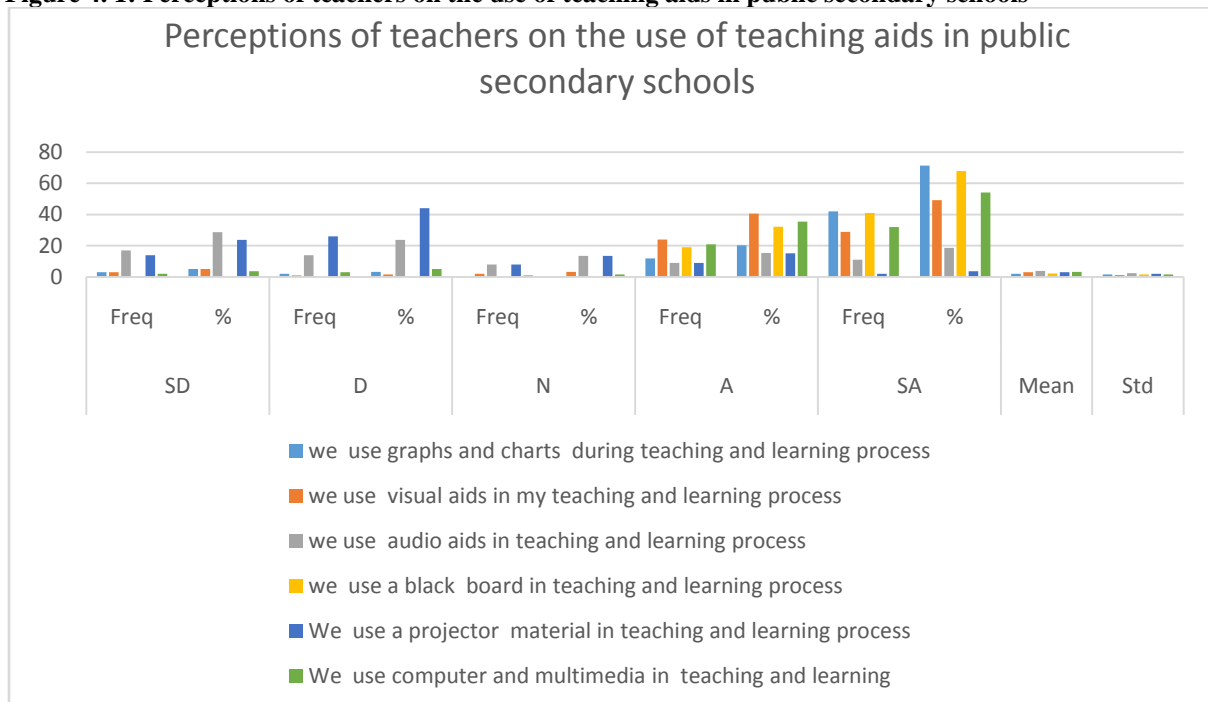
**4.1 Teaching aids used in teaching and learning process**

The first objective of this study to identify the teaching aids usage in teaching and learning procedure in public secondary schools in Nyarugenge District, Rwanda. To achieve this objective, the researcher required the respondents to show their views by answering the questionnaires; indicate the extent to which they agreed with the statement. The findings included the perceptions of teachers and those of students.

**4.1.1 Teachers' perception on use of teaching aids in public secondary schools**

The findings indicated that 91.6%, 89.9%, 33.9%, 100%, 18.7% and 89.7% of teachers agreed that they use graphs and charts, visual aids, audio aids, blackboard, projectors material and computer and multimedia materials respectively in teaching and learning process. On the other hand, 8.4%, 6.8%,52.5%, 67.8% and lastly 8.7% of teachers do not use graphs and charts, visual aids, audio aids, projector materials and computer and multimedia respectively in teaching and learning process. Some significant percentage of teachers remained neutral. Moreover, the teachers who disagreed with the statements indicated that they don't use some of the teaching aids since they lack in their schools and due to non-familiarity with the use of teaching aids in teaching and learning. These findings indicate that graphs and charts, visual aids, blackboard and computer and multimedia are the mostly used teaching aids in public secondary schools in Nyarugenge District, Rwanda whereas audio aids and projector materials are not commonly used.

**Figure 4. 1: Perceptions of teachers on the use of teaching aids in public secondary schools**

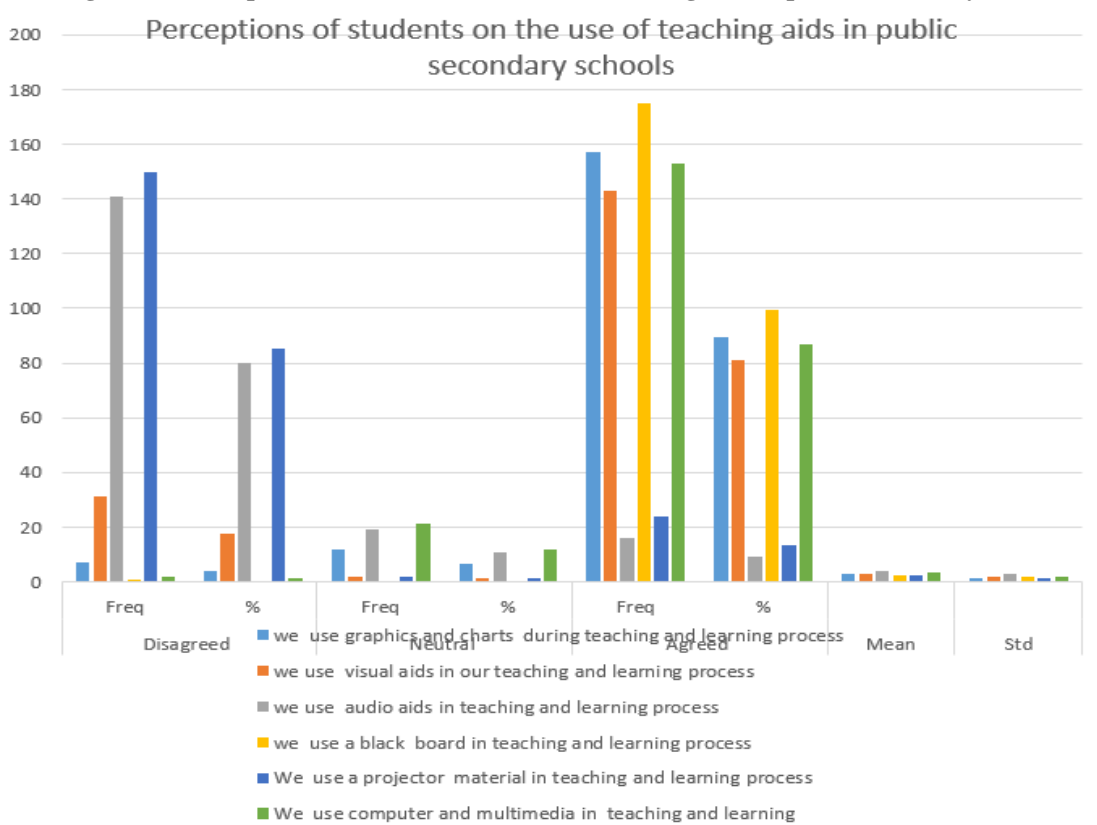


Source: Field data, 2020. \*\*\*[3-4]= Moderated means, [1-2]= very high mean, [2-3] = high mean,[4-5]= low means, [5-6]= very low mean, \*\*Correlations significance is at the 0.01 level(2-tailed)\*\*\*

**4.1.2 Perception of students on use of teaching aids**

On students' perception, 89.3%, 81.2%, 9.2%, 99.5%, 4.9% and 86.9% of students accepted that their teachers use graphs and charts, visual aids, audio aids, blackboard, projector materials and computer and multimedia respectively in teaching and learning process. However, 3.9%, 17.6%, 80.1%, 0.5%, 85.2% and 1.2% of the students were for the opinion that their teachers do not use graphs and charts, visual aids, audio aids, blackboard, projector materials and computer and multimedia respectively. Moreover, some smaller percentage of students remained neutral as summarized in table 4.2 below. These findings also reflect those of teachers' perception that graphs and charts, visual aids, blackboard and computer and multimedia are the most commonly used teaching aids in public secondary schools in Nyarugenge District Rwanda while audio aids and projectors are least used.

**Figure 4. 2Perceptions of students on the use of teaching aids in public secondary schools**



Source: Field data, 2020. \*\*\*[3-4]= Moderated means, [1-2]= very high mean, [2-3] = high mean,[4-5]= low means, [5-6]= very low mean, \*\*Correlations significance is at the 0.01 level(2-tailed)\*\*\*

The above findings were also echoed by the findings of the interview session with the head teacher and deputy head teacher in charge of studies. They indicated that the teaching aids in public secondary schools include graphics and charts, audio materials, visual aids, projectors, computers and multimedia aids, black boards. They said most of teachers use graphics and charts to facilitate their students to enhance academic performance. Moreover, 78.45% of school administration indicated that they do not use projectors due to their inadequacy whereas 95.3% accepted that every teacher use computer in their lesson presentation and they indicated each public secondary school of Nyarugenge District have computer laboratory and smart classroom to be used in teaching and learning processes »

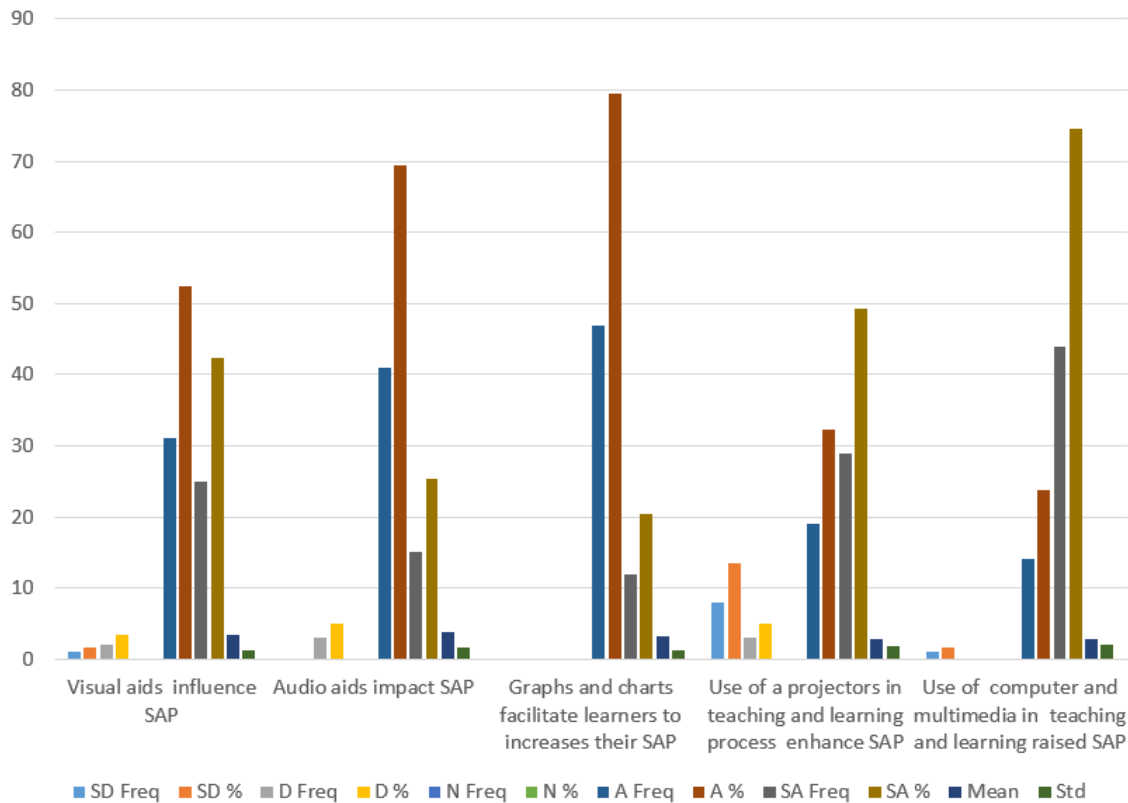
Additionally, concerning whether school infrastructure facilitate teachers to prepare teaching aids, they widely accepted that indeed it does. Most of the administrators indicated that they have playgrounds, sciences laboratories, computers laboratories, smart classrooms, digital library and physical library and strong and well ventilated classrooms to facilitate teachers to prepare lesson. However, they pointed out that some teachers delay

to use them to perform the content of their respective subjects, teachers are not familiar with the use of those infrastructures and they are not motivated to use them.

**4.2 The influence of teaching aids usage on students' academic performance**

The second objective of this study was to evaluate students' academic performance due to the use of teaching aids in public secondary schools in Nyarugenge District. To achieve this objective, the researcher required the respondents to show their views by answering the questionnaires; indicate the extent to which they agreed with the statement and the results were summarized in the figure 4.3 which shows how teaching aids influence academic performance in public secondary schools in Nyarugenge district.

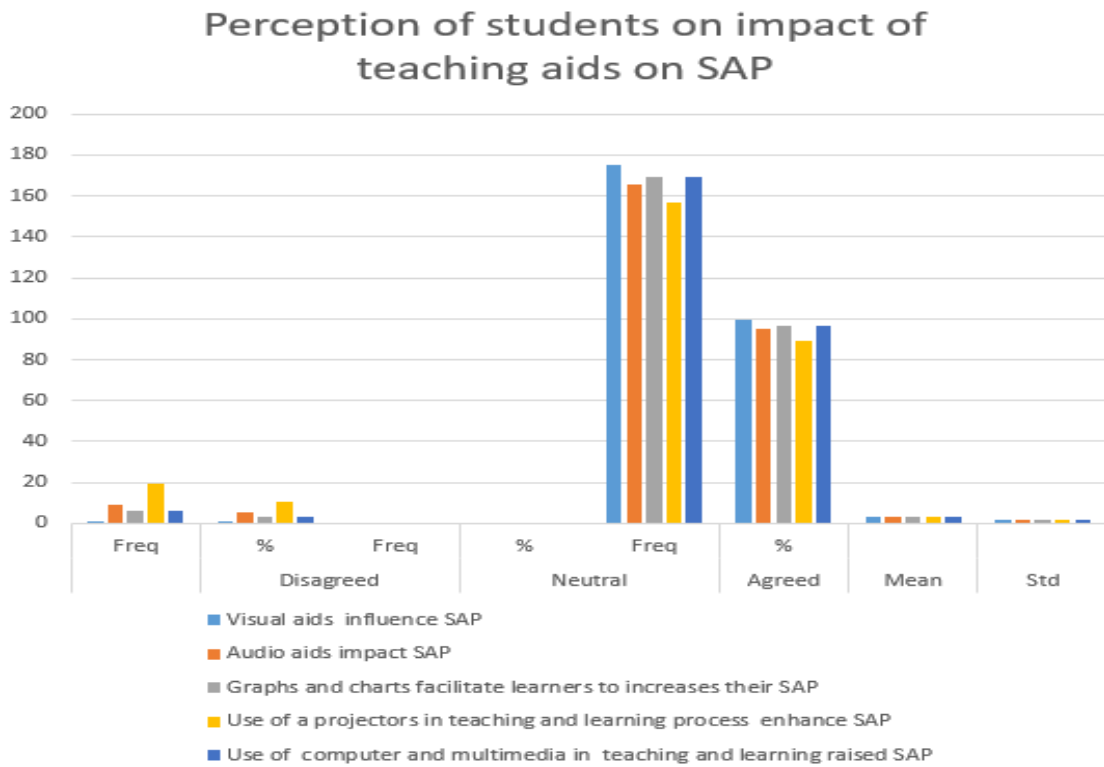
**Figure 4. 3 Perception of teachers on impact of teaching aids on SAP**



Source: Field data, 2020. SD: strongly disagree, D: Disagree, N: Neutral, A: Agree, SA: Strongly agree, STD: Standard deviation and SAP: Students' Academic Performance

The results shown in figure 4.3 above indicate that 94.6 % of teachers accepted that the visual aids are very important towards students' academic performance and teachers are aware to use them while 4.4 % of teachers were for the contrary opinion. This is an indication that visual aids are needed in teaching public secondary schools. Concerning audio aids, the findings revealed that 94.9% of teachers accepted that it can affect students' academic performance. This implies that there is positive effect of audio aids on students' academic performance and that teachers should be encouraged and facilitated to use them in teaching and learning process. Additionally, the findings revealed that 100% of teachers use graphics and charts in their classes and accepted that they can help students to understand more the subject contents through drafted charts and graphs. The findings further revealed that projectors can play a big role in teaching and learning process. 81.4% of respondents did agree that projectors are the best teaching materials to be used in enhancing students' academic performance while 18.6% of teachers were in disagreement and added that their students perform well even without projectors. Lastly, concerning computer and multimedia 98.3% of teachers and that they prefer using it in the teaching and learning process.

**Figure 4. 4** Perception of students on impact of teaching aids on SAP



Source: Field data, 2020 \*\*\*[3-4]= Moderated means, [1-2]= very high mean, [2-3] = high mean,[4-5]= low means, [5-6]= very low mean, \*\*Correlations significance is at the 0.01 level(2-tailed)\*\*\*

Students also gave their views on whether or not students' academic performance can be influenced by use of teaching aids. The findings are summarized in the Figure 4.4. from the findings, 99.5% of students indicated that the use of visual aids can help them in their studies and it makes them understand more the lesson while 0.5% were in disagreement. The mean was 3.47 with high standard deviation of 1.87 meaning that visual aids are needed to facilitate the students in their studies. All teaching materials indicated in the figure 4.4 revealed that they are needed with different percentage levels such as audio at 94.9% with a mean of 3.28 and high standard deviation of 1.55. Concerning graphics and charts and computers and multimedia, 96.7% of students were in agreement that they affect students' academic performance whereas only 3.3% were in disagreement. The mean was 3.37 and high standard deviation of 1.67. This is an indication that graphics, charts, computers and multimedia are need to facilitate the students in their studies.

The interview was done also to the school administration about how the students perform due to the use of teaching aids. The first question was on whether there is any influence of teaching aids on students' academic performance. They responded that teaching materials helps teachers and students towards academic performance in different ways including time saving in coverage of subject content, helping students to recall what they learned, facilitate students to integrate the contents learned with their everyday life and lastly facilitate students to perform better national examination etc.

The second question was on how the working conditions with the use of teaching aids can be improved in order to promote students' academic performance.

They responded that there is need to give all resources to the teachers for lesson preparation, conduct training to teachers on the use of teaching aids, encourage all teachers to use improvisation in their lesson, mobilize students on the importance of teaching aids in their studies, provide pedagogical hours in the schools, share information among the teachers and adopt good management strategy of the teaching aids to avoid damage.

#### **4.3 Relationship between the teaching aids and students' academic performance**

The third objective for this study was to assess the relationship of teaching aids and students' academic performance in public secondary schools in Nyarugenge District, Rwanda. The teaching aids considered included visual aids, computer and multimedia aids, graphs and charts, audio aids and projector materials.

**4.3.1 Relationship between visual aids and students' academic performance**

The table below shows the relationship between visual aids and students' academic performance. the results indicate that the Karl Pearson coefficient of correlation is 0.881 with a significance value of 0.000. This shows that there is strong positive significance relationship between visual aids and students' academic performance. Therefore, visual aids are very integral in boosting students' academic performance.

**Table 4.1 Relationship between visual aids and students' academic performance**

		Visual aids	Students' academic performance
Visual aids	Pearson Correlation	1	.881**
	Sig. (2-tailed)		.000
	N	235	235
Students' academic performance	Pearson Correlation	.881**	1
	Sig. (2-tailed)	.000	
	N	235	235

Source: Field Data 2020    \*\*. Correlation is significant at the 0.01 level (2-tailed).

**4.3.2 Relationship between Computer and multimedia aids and students' academic performance.**

From the below table, Karl Pearson's correlation coefficient is 0.847 with a significance value of 0.000 which is less than 0.05. This implies that there is a strong positive correlation between computer and multimedia aids and students' academic performance. Therefore, computer and multimedia materials such us use of flash disks, CDs and DVDs impacts greatly on students' academic performance.

**Table 4.2 Relationship between Computer and multimedia aids and students' academic performance**

		Computer and multimedia aids	Students' academic performance
Computer and multimedia aids	Pearson Correlation	1	.847**
	Sig. (2-tailed)		.000
	N	235	235
Students' academic performance	Pearson Correlation	.847**	1
	Sig. (2-tailed)	.000	
	N	235	235

Source: Field Data 2020    \*\*. Correlation is significant at the 0.01 level (2-tailed).

**4.3.3 Relationship between graphics and charts aids and students' academic performance**

The next task was to determine the relationship between graphics and charts aids and students' academic performance. The above table shows that Karl Pearson's correlation coefficient is 0.536 with a significance value of 0.000 which is less than 0.05. This is an indication that the use of graphics and charts during teaching and learning relates strongly and positively with students' academic performance. The P-Value of 0.000 is less than 0.05 implying that the correlation between graphics and charts and students' academic performance is significant. Therefore, there is need for teachers to embrace the use of graphics and charts in teaching in order to improve students' academic performance.

**Table 4.3 Relationship between the Graphics and charts aids and students' academic performance**

		Graphics and charts aids	Students' academic performance
Graphics and charts aids	Pearson Correlation	1	.536**
	Sig. (2-tailed)		.000
	N	235	235
Students' academic performance	Pearson Correlation	.536**	1
	Sig. (2-tailed)	.000	
	N	235	235

Source: Field Data 2020    \*\*. Correlation is significant at the 0.01 level (2-tailed).

**4.3.4 Relationship between Audio aids and students' academic performance**

Concerning the relationship between audio aids and students' academic performance, correlation analysis findings are presented in the above table. The findings indicate that Karl Pearson's correlation coefficient is 0.378 and the significance value of 0.000. These findings indicate that there is weak positive



association between audio aids and students' academic performance. However, the findings indicate that the association between audio aids and students' academic performance is significant since the significance value is less than 0.05. this shows that the use of audio aids in teaching and learning is still not well developed in public secondary schools hence resulting into a weak association with students' academic performance.

**Table 4.5 Relationship between the audio aids and students' academic performance**

		Audio aids	Students' academic performance
Audio aids	Pearson Correlation	1	.378**
	Sig. (2-tailed)		.000
	N	235	235
Students' academic performance	Pearson Correlation	.378**	1
	Sig. (2-tailed)	.000	
	N	235	235

Source: Field Data 2020    \*\*. Correlation is significant at the 0.01 level (2-tailed).

#### 4.3.5 Relationship between Projectors and students' academic performance

The last aspect on correlation analysis was to determine the correlation between use of projectors in teaching and students' academic performance. The findings shown on the below table indicate that Karl Pearson's correlation coefficient is 0.382 and the significance value is 0.000. This is an indication that there is weak positive association between use of projectors in teaching and learning and students' academic performance. Moreover, the relationship between the two variable is significant as indicated by a significance value of 0.000 which is less than 0.05.

**Table 4.5 Relationship between Projectors and students' academic performance**

Statement		Projectors	Students' academic performance
Projectors	Pearson Correlation	1	.382**
	Sig. (2-tailed)		.000
	N	235	235
Students' academic performance	Pearson Correlation	.382**	1
	Sig. (2-tailed)	.000	
	N	235	235

Source: Field Data 2020    \*\*. Correlation is significant at the 0.01 level (2tailed)

From the above findings on correlation analysis, it's important to note that all the teaching aids considered were found to have positive significant correlation with students' academic performance. This implies that teaching aids are positively associated with students' academic performance. In addition, the association between teaching aids and students' academic performance is significant as indicated by the significance level of 0.000 in each and every teaching aid considered. Therefore, there is need to enhance the use of teaching aids in teaching and learning process in secondary schools in a bid to enhance students' academic performance.

## V. Conclusions and Recommendations

### 5.1 Conclusions

The researcher came up with a number of conclusions from the findings of this study. First, this study concludes that the most commonly used teaching aids in public secondary schools are graphs and charts, visual aids, computers and multimedia materials and the traditional blackboard while the least used teaching aids are audio aids and projectors. The leased used teaching aids was due to their unavailability and the fact that teachers are unfamiliar with their operations.

Secondly, the study concludes that the use of teaching aids mostly graphs and charts, visual aids and computer and multimedia material greatly leads to improved students' academic performance. however, the use of audio aids and projectors does not greatly impact on students' performance due to the fact that they are still not common in schools and difficulties in their operation.

Lastly, there is strong positive significant association between teaching aids (graphs and charts, computers and multimedia and visual aids) and students' academic performance. On the other hand, there is weak positive significant association between audio aids and projectors and students' academic performance. Generally, teaching aids have significant association with student academic performance. Its therefore prudent that the use of teaching aids in teaching and learning process should highly be embraced in secondary schools.

## 5.2 Recommendations

The researcher made the following recommendations depending on the findings from the study:

- i. In order to improve learners' attitude towards teaching based on instructional materials, teachers should educate learners by using the teaching aids because they improve students' academic performance and encourage them to be involved in teaching and learning process.
- ii. Ministry of education through Rwanda education Board should work together with other education stakeholders to ensure that teaching aids materials are available across all schools so that they can be utilized by teachers and students with ultimate goal of improving students' academic performance.
- iii. The study further recommends the need for active use of teaching aids available in schools. The school administration should supervise and monitor to ensure that the teaching aids available are properly used by teaching staff and students.
- iv. Additionally, there is need to conduct training to all teachers on the use of teaching aids. The education ministry should organize training sessions to teachers on how to use teaching aids so that they can be well acquainted and familiar with them, use them properly and ultimately benefits the students in terms of improved academic performance

## References

- [1]. Adkins, D., & Brown-Syed, C. (2002, August). Accommodating all learners: Critical inquiry and learning styles in the LIS classroom. Paper presented at the 68th IFLA Council and General Conference Glasgow, Scotland.
- [2]. Ahmed, Sabreena & Conlan, Chris (2011). Same Old, Same Old: From Boring to Creative Presentation. BRAC University Journal, vol. VIII, no. 1&2, p 63-72
- [3]. Ashaver, D., & Igyuve, M. S. (2013). The use of audio-visual materials in teaching and learning process in College of Education Benue state, Nigeria. Journal of Research and Method of Education, 6(1), 44-55.
- [4]. Dr. Damodharan V. S. & Rengarajan. V. 2010 Innovative Methods of Teaching
- [5]. Early, P. (Ed). (1998). School Improvement after Inspection? School and LEA Responses. London: Paul Chapman Publishing Ltd.
- [6]. Felder, R. M., & Solomon, B. A. (2000). Learning styles and strategies. Retrieved January 4, 2006, from <http://www2.ncsu.edu/unity/lockers/users/f/felder/public/ILSdir/styles.htm>
- [7]. Gursul, F., & Tozmaz, G. (n.d.). Which one is smarter? Teacher or Board. Procedia-Social and Behavioral Sciences, 5731-5737. doi: 10.1016/j.sbspro.2010.03.936
- [8]. Jucevičienė, P., ir Tautkevičienė, G. (2004). Universiteto bibliotekos mokymosi aplinkos samprata. Pedagogika: mokslo darbai, t. 71, 101105. 14.
- [9]. M.A. Bell (2009), Teacher feature: why use an interactive whiteboard? A Baker's dozen reasons! Teachers.net Gazette 3 (1) (2002) Retrieved November 22, 2009, from <http://teachers.net/gazette/JAN02/mabell.html>.
- [10]. Maal, N. (2004). Learning via multi-sensory engagement. Association Management, 56(11), 61.
- [11]. Makyikyeli, N. P. S. (2003). Educational Media and Technology, the Open University of Tanzania, Dar es Salaam.
- [12]. Mayer, R. E., & Massa, L. J. (2003). Three facets of visual and verbal learners: Cognitive ability, cognitive style, and learning preference. Journal of Educational Psychology, 95, 833-846.
- [13]. Ngirabakunzi, F. (2017), the use of instructional materials and teaching techniques on the performance of English subject in secondary schools of Rwamagana District. university of Lay Adventist of Kigali. East African journal of science and technology, vol 7.
- [14]. Sibanda, N. (2009). Quantitative study. Retrieved from <http://www.victoria.ac.nz/postgradlife/downloads/quantitative%20seminar18Aug09.pdf>
- [15]. Vandiver, B. (2011) The impact of school facilities on the learning environment. (Doctoral dissertation, Capella University, 2011)
- [16]. Yadav, K. (2001). Teaching of Life Science. New Delhi: Anmol publication Ltd, India.
- [17]. Yamane, T. (1967). Comprehensive Research Methodology, Int. Inc. Publications, pp 886.
- [18]. Yara, O. P., & Otieno, K. O. (2010). Teaching / Learning Resources and Academic performance in Mathematics in Secondary Schools in Bondo District of Kenya. Asian social science. 6(12), 126. Retrieved on December 2010, from <http://www.ccsenet.org/ass>.

DUSABEMARIYA Elisabeth, et. al. "Influence of Teaching Aids Usage on Students' Academic Performance in Public Secondary Schools in Rwanda.." *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 10(4), (2020): pp. 12-21.