



*IJSSHE-International Journal of Social Sciences, Humanities and Education*  
*Volume 3, Number 3, 2019*  
*ISSN 2521-0041*

---

## **INSTRUCTIONAL RESOURCES AND LEARNERS' ACADEMIC PERFORMANCE: A CASE STUDY OF BOARDING SCHOOLS IN MUHANGA DISTRICT, RWANDA**

**Astérie Nyirahabimana**

*University of Rwanda, College of Education, Rwanda*

**Innocent Twagilimana**

*University of Rwanda, College of Education, Rwanda*

### ***ABSTRACT***

*This article reports on findings of a study carried out to explore the relationship between the instructional resources and learners' academic performance as the most important component or indicator of quality education. The investigation was mounted by recent developments in instructional resources theories (Janovsky, 2015; The Independent School District 196, 2002; Smith, 1972; Bisiriyu, 2016; Broderick, 1965; Obanya, 1989; Moore and Fitz, 1993). Within a qualitative and quantitative approach and case study methodology, data were collected through analysis of key teaching materials, documentation on learners academic performance of classes and interviews of sample learners. Findings reveal that teachers, the human part of the instructional resources are competent, motivated and qualified to influence learners' academic performance. But, the books and textbooks, field trips, Tools/Equipment and consumables, Graphs, maps/Atlases; just to mention some; as material part of the instructional resources are not either sufficient or available, neither in numbers nor in variety. It is recommended that more various, sufficient, relevant and effective instructional resources need to be made available to public secondary schools in Rwanda for effective academic performance of learners. This article reports on findings of a study carried out to explore the relationship between the instructional resources and learners' academic performance as the most important component or indicator of quality education. The investigation was mounted by recent developments in instructional resources theories. Within a qualitative and quantitative approach methodology, data were collected through analysis of key teaching materials, documentation on learners academic performance and interviews of sample learners. Findings revealed that teachers are competent, motivated and qualified to influence learners' academic performance. But, books and textbooks are not either sufficient or available. It was recommended that more various, relevant and effective instructional*

---

*resources need to be made available to public secondary schools in Rwanda for learners effective academic performance.*

## **KEYWORDS**

*Colonial education, History, Gender Studies, etc.*

## **1. INTRODUCTION**

This paper reports on findings of a research study conducted in public secondary schools of Muhanga District in Rwanda. The research was part of a Master's degree research project aiming at exploring the relationship between instructional resources and learners' academic performance. The interest in this study had been aroused by two situations:

On one hand, the researcher's experience as a teacher in the educational subject in university of Rwanda, College of Education, involved supervision of students during their internship practices in secondary schools since 2011 and realizing that students-teachers encounter challenges related to teaching materials.

On the other hand, the fact that in 2012 a total of 76.629 students were enrolled in universities and colleges and 49% of these students were enrolled in public institutions and 44.2% of them were female. Majority of female students (59.5%) were enrolled in private tertiary education institutions (TEIs) (ESSP 2013/14-2017/18, p.20) Though these figures are considered to be a sign of good improvement, still one can wonder why only 49 % of students are attending public universities and the remaining 51 % are in private institutions which are by the way relatively expensive. Thus, one's interpretation is that the 51% did not perform well in secondary school to enter a public university. Therefore the two situations motivated the researcher in investigating the influence of instructional resources on learners' academic performance.

Actually, factors determining the quality of education can be seen in two angles: input dimension (all ways and means invested in the teaching-learning process) and output dimension (the results or outcomes of the teaching-learning process). One of the dimensions of the input is seen, according to the 2005 EFA report, as the resources made available to support the process and the direct ways in which these resources are managed. It is obvious that schools without teachers, textbooks or learning materials will not be able to do an effective job. In that sense, resources are important for education quality. The main input variables are material and human resources, with the governance of these resources as an important additional dimension.

The outcomes of education should be assessed in the context of their objectives which are most easily expressed in terms of academic achievement (sometimes as test grades, but more usually and popularly in terms of examination performance), though ways of assessing creative and emotional development as well as changes in values, attitudes and behaviour have also been devised (EFA, 2005). Other proxies (or indirect means, alternatives) for learner achievement and for broader social or economic gains can be used; an example being labour market success and broader benefits to society (EFA, 2015). Thus the most obvious aspect of the teaching-learning process outcomes (which depend of course on the nature of the teaching-learning inputs) is the learners' academic performance.

It is in this perspective that the present research was carried out to examine the relationship between instructional resources and learners' academic performance as one of the most important components of quality education in Rwanda.

The present study is giving realistic status about the instructional resources availability, effective use and its influence on the learners' academic performance in Rwandan secondary schools. The status of This instructional resource (being human and material) is addressed to all education stakeholders from school level to national level to reflect on the imperative roles of those resources; and plan, work towards their availability as well as effectiveness.

## **2. THEORETICAL PERSPECTIVE**

The role of instructional material has been recognized by several theories and approaches towards learning. The behaviorism theory; the gestalt theory, the social learning theory, just to mention some, are the examples. The behaviorism theory that has been put forward by Ivan Pavlov, Edward Thorndike, B.F. Skinner and John B. Watson psychologists (Irving et Al, 2004); asserts that learning takes place when there is an acquisition of new behavior. The process is done through what they called Conditioning which is either classical or operant. Both classical and operant conditionings show that the learning takes place when the learner's reflexes respond to stimulus.

The term stimulus is usually used to describe the event or object to which a response is measured. Thus, learning cannot happen if the learner does not react effectively on the instructional material.

The role of instructional material is also recognized by the gestalt theory of learning (as has been put forward by Wolfgang Köhler) in such a way that its claim is that an individual learns relevant structures of a situation or problem through a guided discovery (Moore, Fitz, (1993)). What a learner discovers; the situation he analyses or the problem he/she resolves is built/shaped or constructed by using instructional resources.

Constructivist theory of learning also acknowledges the imperative role of instructional resources. This theory acknowledges that each student does not learn in the same way and teachers must put it into consideration. Below is a list of different methods of learning. The percentages listed represent the average amount of information that is retained through that particular learning method. Note what method produces the highest retention rate according to William (1988): 1. Lecture = 5%; 2. Reading = 10%; 3. Audiovisual = 20%; 4. Demonstration = 30%; 5. Discussion Group = 50%; 6. Practice by doing = 75%; 7. Teach others / immediate use of learning = 90%

It is obvious that practice and immediate use of learning help in retention, reproduction, hence change in behavior which is learning. The practice by doing and the immediate use of learning cannot happen and be permanent if the teaching-learning resources are not effectively used by considering individual pace and experience background through the utilization of combined methods.

Unfortunately, the lack of instructional resources may not allow the use of a combination of all these methods of teaching to take place in a class in Public Secondary schools. The teachers or instructors may end up using only one method of teaching which is lecture method which yields only 5% results. Schools and the entire environment settings in class must depict learning if learners are to benefit in the program.

According to Janovsky (2015), teachers need supplies and resources in order to have a successful classroom. Writing materials and inspirational wall signs are all useful objects in a classroom, but they are not instructional materials. Instructional materials are the tools used in educational lessons, which includes active learning and assessment. Basically, any resource a teacher uses to help him/her teach his/her students are instructional material.

The Independent School District 196 (2002) as well as Smith (1972, p.113) also define and categorize the instructional resources as anything (textbooks; nonbook resources; teaching machines and programmed materials; motion pictures films; 8mm single concept films; videotape; audiotapes; or recordings; facilities which are space, time and human resources) which is read, listened to, manipulated, observed or experienced by students as part of the instructional process. Resources may be consumable or non-consumable and may vary greatly in the kind of student response they stimulate.

Janovsky (2015) summarized these instructional resources in terms of Traditional resources like textbooks and workbooks, novels or poems outside of the textbook which can really help to introduce new concepts to students and this can be done for different subjects; Graphic organizers which are diagrams, charts, tables, flow charts, and graphs are all examples of graphic organizers and they can allow students to physically see relationships between ideas; the third and last type of the instructional resources which is Teacher-made resources which include anything the teacher creates, like hand-outs, worksheets, tests, quizzes, and projects. Generally, according to the classification, we have audio-aids-those resources that appeal to the sense of hearing only; visual aids-those that appeal to the sense of sight only and audio-visual aids-those that appeal to both senses of hearing and sight at the same time' (Bisiriyu 2016, p.705).

According to The Partnership Management Board(n.d, p. 4) in Active Teaching and Learning Methods, Northern Ireland Curriculum our society today needs young people who are flexible, creative, and proactive – young people who can solve problems, make decisions, think critically, communicate ideas effectively and work efficiently within teams and groups. The 'knowing of knowledge' is no longer enough to succeed in the increasingly complex, fluid, and rapidly evolving world in which we live. In order to optimize life-long learning and potential success, it is now widely accepted that young people need to have opportunities to develop personal capabilities and effective thinking skills as part of their well-rounded education. It is obvious that the development of these skills can only be achieved if the learner has enough and effective teaching-learning resources which are the adequate materials and the process through which the learner's active, participatory and engaging learning happens. Therefore, this fullest and holistic personal development cannot happen or be successful within teaching-learning process, if the necessary inputs are not sufficient or effective. Thus, the learners' performance depends at greater extent to the teaching-learning resources availability and utilization.

The role and implication of instructional resources have been also evoked by different researchers in different contexts. Broderick (1965, p.428) discussed the influence of instructional material on teaching-learning in her article entitled 'Research in the Use and Purposes of instructional materials. She classified them into two main categories which are audio-visual and textbooks materials. The use of these materials, she confirmed, can help teachers and learners to prepare for a class trip; provides needed basic experiences and fosters the attaining of skills; leads to clearer grasp of meaning, and serves the purposes like supplying the necessary basis for developmental

learning and hence make learning more permanent; offering reality of experience which stimulates self-activity on the part of learners; developing a continuity of thought; contributing to the growth of meaning and hence to the development of vocabulary; providing experiences not easily secured by other materials and contributing to the efficiency depth and variety of learning with a teacher as a key to the classroom learning.

In his article entitled 'Imperatives in Instructional materials', Stephen (1948) discussed five major issues in the use of instructional materials? In the examination of these issues, the emphasis was put on the relationship between the quality of learning and the availability and use of materials as follows:

The first issue was what he named: 'A Means to an End'. He explained that instructional material, being arbitral defined, has certainly and generally one major function which is to control the experience of children/learners so that their activities will result in desirable learning. Teachers and /or learners request and decide that certain instructional material should be used because they believe that reacting to it will bring about needed changes in behavior. Thus, this statement on the role of instructional material has interesting implications. The mere one is that teaching materials are a means to an end and the end is some kind of learning or some kind of changes in behavior.

Another issue evoked by Stephen as instructional materials are concerned is 'Opportunities to Examine and Evaluate'. This regards the question that what can be done to inform the busy teachers about the new available instructional materials.

The third issues as he examined is 'Tools for Specific Needs'. This issue deals with what should be done now to provide teachers with instructional materials which are sorely needed but are not now available.

The fourth issue as far the influence of instructional material to teaching-learning is concerned, as explained by Stephen, is 'Purposeful Increase Budget'. It involves increasing public expenditure on teaching materials.

The fifth issue is 'Utilization Based on Knowledge'. It has to do with improving the utilization of instructional materials. He explained that in order for the utilization to be good, teachers have to fulfill four- musts-

- They must know what changes in learners' behavior are to be brought about.
- They must know what materials are available.
- They must be given opportunities to examine materials from which they choose those most valuable.
- They must be able to get the material when they want it and use it in optimum circumstances.

And for these " musts" to become actual practices, he said, there must be pre-service and/or in-service education. This means that not only should teachers be qualified in teaching, but also progressive or periodic professional development is needed.

From the above importance of the instructional materials to teaching-learning process so far; in general and to learners' performance in particular, it is obvious that once these materials are not available or not properly used, there will be no room for learners to learn properly and better academically perform.

It was in this regard that the researcher was motivated to explore and describe the situational relationship between instructional resources and learners 'academic performance in Rwandan Public Secondary schools and more particularly in Muhanga boarding schools.

### **3. RESEARCH METHODS**

The study was conducted following the descriptive design used when the researcher is interested in exploring a phenomenon within its context using a variety of data sources, Patton (1990). This descriptive design incorporated both qualitative and quantitative approaches and techniques in order to allow the researcher to gather more precise and quantifiable information about the types of instructional resources used in public secondary schools and the academic performance.

#### **3.1 Selection of study site**

As it has been already mentioned, the study aimed at analyzing the relationship between effectively used instructional resources and learners 'academic performance in Rwandan Public secondary schools with an emphasis made on Muhanga District. The selection of the research site was made according to the suitability of the case for the research aim and problem. Indeed, the selected site was one in which the researcher has been conducting most of the practical activities as far as the teaching-learning process is concerned through supervising and mentoring future teachers during the internship exercise. Again the secondary education worth's emphases since it's the setting where learners develop their fullest potentials for life. It was then the most likely to stand as a valid representative of quality education query and the case study was most convenient in terms of resources of time and cost.

#### **3.2. Sampling**

The study used purposive sampling. According to Wolfer (2007), simple random technique is the most basic type of probability sample and it is also the simplest to draw. It is a sampling method in which all the elements in a sample frame have an equal probability of selection. Margrete, S. (2000) called this type of sampling, random purposeful sampling which is a combination of probability and purposeful sampling. She said that this strategy is employed when there a very large pool of potential information-rich cases.

This sample size was determined through a stratified sample type whereby four public boarding secondary schools were randomly chosen. Two schools were randomly chosen from the remote area of the district and two others from the urban area respectively. In order to obtain a fair and representative sample size, the sample size was drawn proportionate to the population size of the teachers in the selected school. A list of all teachers was obtained from the four selected schools and using simple random sampling a sample was drawn. Among the four randomly chosen schools, the researcher randomly chose ten teachers (five male and five female teachers who teach in advanced level were randomly selected from each school).

Purposive sampling was used to select administrators of schools and some students. Each of the selected schools provided two students' delegates a male and female. Then one headteacher from each school was targeted due to the fact that being administrator of the school s/he knows what goes on since all problems are reported to him/her. Thus, the sample size was made up of 52 persons namely 40 teachers, 8 students, and 4 headteachers.

### **3.3. Data collection methods and instruments**

In the present study, the data collection process used both quantitative and qualitative methods whereby questionnaires, interviews, and document analysis were used as data collection instruments. Instructional materials and resources were collected using a questionnaire which had two main sections: section one was concerned with the demographic characteristics, section two to assess the type /availability of instructional resources used, the characteristics of instructional resources used, their importance, the factors affecting their utilization and finally the missed instructional resources. In addition to the five subsections of the main section B, the judgment of students' academic performance, the training and their importance for teachers were added to strengthen the information provision about the influence of instructional resources to learners' academic performance. Academic performances were measured by the students' national examination scores at the end of senior six which determine the eligibility to enter a public university/institution. The academic performance was categorized into scales 0-73 for analysis purpose and the number of students who scored to enter a public university in 2013-2016 academic years was checked basing on the REB accepted score to enter a public university. A self-administered questionnaire was distributed to the participants (teachers & headteachers) to collect information related to the availability, characteristics, use, and importance of Instructional resources. In addition to the questionnaire a check-list of instructional materials to assess the availability and status of instructional materials were given to teachers, headteachers and students as well.

Two students' delegates were purposefully selected as key informants to obtain qualitative data. The reason for selecting the key informants (these are the people who are more genuinely resourceful) is because they share a common experience and concern about the use of instructional resources in class to enhance students' performance. These two students were familiar with the school situation as, in most cases; they have had been at school from senior four and were now in senior five or six. For they were chosen by other students as the ones who were not only brilliant but also disciplined, they were the good representative of the entire advanced level mainly for the academic purpose as this is the main objective of each student.

#### *3.3.1. Questionnaire*

A questionnaire was used as a research tool because it is convenient especially where there are large numbers of respondents. It facilitates easy and quick collection of information within a short time (Patton, 2002). Self-administered questionnaires with close-ended and open-ended questions were used for data collection. This made it easier and quicker for respondents to answer as well as ensuring that there are no irrelevant answers to questions.

#### *3.3.2. Documents analysis*

The documentation was also used to collect data about the learners 'academic performance. According to Administration methods (2010), the documentation method consists of documents analysis which is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic. Analyzing documents incorporates coding content into themes similar to how focus group or interview transcripts are analyzed.

### *3.3.3. Interview guide*

Face to face interviews of the key informants was employed with the use of the interview guide to avoiding the interviewees deviating from the set objectives. Face to face approach has a distinct advantage of enabling the researcher to establish relationship with potential participants and therefore gain their cooperation. These interviews are meant to yield highest response rates in survey research. They also allow the researcher to clarify ambiguous answers and when appropriate, seek follow-up information (Leedy & Ormrod, 2001). The interview was conducted from the two students' delegates from each selected school. The interviewees were informed in time concerning the interview venue and schedule in general.

### *3.4. Data analysis*

In this study, data analysis involved tabulation of results, calculation of frequencies and percentages through the use of Statistical Package for Social Sciences (SPSS) version 16 a computer program where applicable in quantitative data to generate descriptive output. Both qualitative and quantitative analyses were employed since the use of the two approaches allows a researcher to obtain more comprehensive data (McMillan & Schumacher, 2010).

Questionnaires were used to analyze the relationship between instructional resources and student's academic performance. Descriptive statistics were used to describe the student population, instructional resources availability and usage, and academic performance.

The qualitative data were obtained from the interview conducted from the students 'delegates. The inductive approach to analyzing qualitative data was used. This approach involves analyzing data with little or no predetermined theory, structure or framework and uses the actual data itself to derive the structure of analysis. Inductive analysis as it is the most common approach used to analyze qualitative data (Lathlean, 2006). A thematic content analysis which is one of inductive techniques to analyzing qualitative data was used in this study. The process of analysis involved analyzing transcripts, identifying themes within the data and gathering examples of those themes from the text (Ritchie, et al., 2004).

## **4. MAIN FINDINGS OF THE STUDY**

This section presents the research findings and discusses them under the thematic guidance of the objectives of the study. The research was focused on the Influence of Instructional Resources on the Academic Performance of Students in public secondary schools in Rwanda. This section presents the research findings based on the data collected from teachers, headteachers and students. The first set of data was presented in tables of frequencies and percentages on demographic variables of the respondents. The research questions were presented in table of frequencies and percentages with relevant items while the last sets of data were the results of the check-list of

instructional resources. In the analysis of the data, the three groups of respondents were treated separately, but the results obtained were added together in answering the research questions.

#### **4.1. Availability of Instructional Resources**

The research question one was set to investigate the types of instructional materials available for use to influence the academic performance of a 'level students in Muhanga public boarding secondary schools. The sub-questions to that main question were 1) Good relevant textbooks were necessary to influence the academic performance of students, 2) Pictures, models, drawings and specimens influence students' academic performance in A' level, 3) We have good practical school with good laboratories equipped with necessary tools and consumables, 4) Community resource places – industrial establishments, field-trips influence students' academic performance of A 'level and 5) Teachers use appropriate charts and diagrams for the immediate illustration of lessons. The responses from the respondents were squealed in Strongly Agree, Agree, Disagree and Strongly Disagree which were summed up in Agrees and Disagrees. Then the answers were presented in a table and they were the following:

Questionnaire item one sought to assess if different instructional materials mentioned were available for use to influence the academic performance of students. 100% of respondents affirmed that good relevant textbooks were necessary to influence academic performance. For pictures, models, drawings, and specimens, 97.4% of respondent agreed that the use of these teaching-learning materials is influencing their learners 'academic performance, while 2.6% disagreed. When we go to good practical school with good laboratories equipped with necessary tools and consumables, 82.1% of respondents agreed about the availability and utilization of those materials while the 15.0% disagreed. As far as Community resource places industrial establishments, field-trips are concerned, only 59.0% agreed while 41.0% disagreed. This percentage of those who disagreed is very important and revealed that Community resource places industrial establishment, field-trips are not available. For the teachers' use of appropriate charts and diagrams for the immediate illustration of lessons, 97.4 % agreed while 2.6% disagreed.

The availability of instructional resources was also addressed through the interview from learners whereby a guiding question regarding the missed instructional resources was addressed to them. The learners' responses were again presented and the results showed that relevant and various books, films, field trips, projectors, computer systems, tools and consumables, radio system were missing from their schools.

To ensure validity of the research, the researcher used different methods to investigate the phenomenon. In this regard the check-list also known as inventory methods was used to assess the status of instructional resources in the selected schools. All teachers, headteachers, and learners were given the list to assess those instructional resources at their respective schools. Their assessment was provided, presented and interpreted in a table.

The results showed the status –quo of some standard instructional resources in the selected schools. The analysis and interpretation were done by considering the status which had got the highest percentage and it was presented as follows:

- Laboratories were available relevant at 91.7 %; 78.6 %; 64.3% at GS Saint Joseph Kabgayi, GS Shyogwe, ACEJ Karama respectively and they were not sufficient at 54.5% in ES Bulinga.
- Books/textbooks were not sufficient at 66.7%; 78.6%; 45.5% at GS Sait Joseph Kabgayi; ACEJ Karama, ES Buringa respectively and available/ relevant at 57.1% at GS shyogwe.
- Tools were not sufficient at 75.0%; 64.3%; 35.7% and 81.8% at GS Saint Joseph Kabgayi, GS Shyogwe, ACEJ Karama and ES Bulinga respectively.
- Consumables were not sufficient at 91.7%; 71.4%; 57.1% and 81.8% at GS Saint Joseph Kabgayi, GS Shyogwe, ACEJ Karama and ES Bulinga respectively.
- Graphs, maps/Atlases were not sufficient at 66.7%; 50,0 %; 35.7% and 81.8% at GS Saint Joseph Kabgayi, GS Shyogwe, ACEJ Karama and ES Bulinga respectively.
- Slides and slide projector were not available at 58.3%; 71.4%; 35.7% and 54.5% at GS Saint Joseph Kabgayi, GS Shyogwe, ACEJ Karama and ES Bulinga respectively.

These instructional materials were just some to be analyzed, otherwise the details would have been many.

#### **4.2. Effectiveness and Importance of Instructional Resources.**

The second questionnaire item was sought to assess the effectiveness of the available used instructional materials. The subquestions to this questionnaire item two were 1) Instructional materials to be used are visible to every student in the class, 2) Simplicity of instructional materials influence students 'academic performance in A' level, 3) The instructional materials for use must be appropriate and relevant to the topic as well as to students, 4) The sufficiency and attraction of instructional materials influence the academic performance of students of A' level.

To assess the understanding of teachers on the importance of the instructional materials to learners 'academic performance, the questionnaire item three was set and the sub-questions to it were 1) Instructional materials influence learning and improve the competence of teachers, 2) Instructional materials can simplify and clarify what is complex and difficult to express in words, 3) Instructional materials help in concretize the abstract ideas and phenomena, 4) Instructional materials save time and also promotes retention, 5) Instructional materials arouse interest by attracting attention of A, level students.

The findings from the selected schools were presented and analyzed. The respondents confirmed that instructional resources are and should have the candid of visibility, simplicity, appropriateness, and attraction to be wrathful to influence learners 'academic performance. The percentages of the teachers who agreed represented 87.2 %; 92.3%; 100.0%; 100.0% respectively.

Almost all respondents (teachers) agreed 100.0 %; 97.4 %; 100.0 %; 94.9 %; 100.0% that the effective use of instructional materials has the importance of arousing learners' interest, concretizing the abstract ideas and phenomena, simplifying and clarifying the complex and difficult content, and last but not means the least instructional materials improve the competence of the teacher.

### **4.3. Factors Influencing the Use of Instructional Materials**

A fourth questionnaire item was asked to the respondents to assess whether they meet some challenges that can limit the use of instructional materials. The sub-questions to that questionnaire item were 1) the pace of time available allocated to A' level examinable courses affects the use of instructional resources to influence students' academic performance, 2) Teachers' qualification and experience (mastery of the subject matter, methodology and the acquaintance with the teaching materials) affects the use of instructional resources to influence the academic performance of students in A' level, 3) The number of students in the classes overcrowded affects the use of instructional resources to influence the academic performance of students in A' level, 4) The lack of physical facilities and community resource (the school environment) affects the use of instructional resources to influence the academic performance of students in A' level, 5) Students' low level of understanding affects the use of instructional resources to influence the academic performance of students in A' level, 6) The low motivational value from teachers affects the use of instructional resources to influence the academic performance of students in A' level.

Respondents (teachers) agreed 79.5 % ; 94.9 % ; 92.3 % ; 87.2% ; 84.6% ; 84.6% respectively that low motivational value from teachers ; the low level of understanding from learners ; the lack of physical facilities and community resource ; the number of students in the classes overcrowded, teacher's mastery of the subject matter, methodology and the acquaintance with the teaching materials; pace of time available allocated to A' level examinable courses affect and may affect the use of instructional materials. From these views, it is, sometimes, realized that teachers use the lecture method which does not give a room the manipulation of instructional materials because they have a lot of examinable content to teach within a short time.

Another question in line with instructional materials that teachers judge necessary in their teaching-learning process but these materials are missing from school, was asked to teachers. The respondents (teachers) from the four selected schools revealed that some instructional materials including: Projectors; pictures; field trips; radio system; tools and consumables; computer system; charts, models and shows; a variety of books and textbooks; were respectively missing from their schools. This scarcity of instructional materials was also testified by the results from headteachers and learners' responses to the same question as we shall see it later on in the discussion of the research findings.

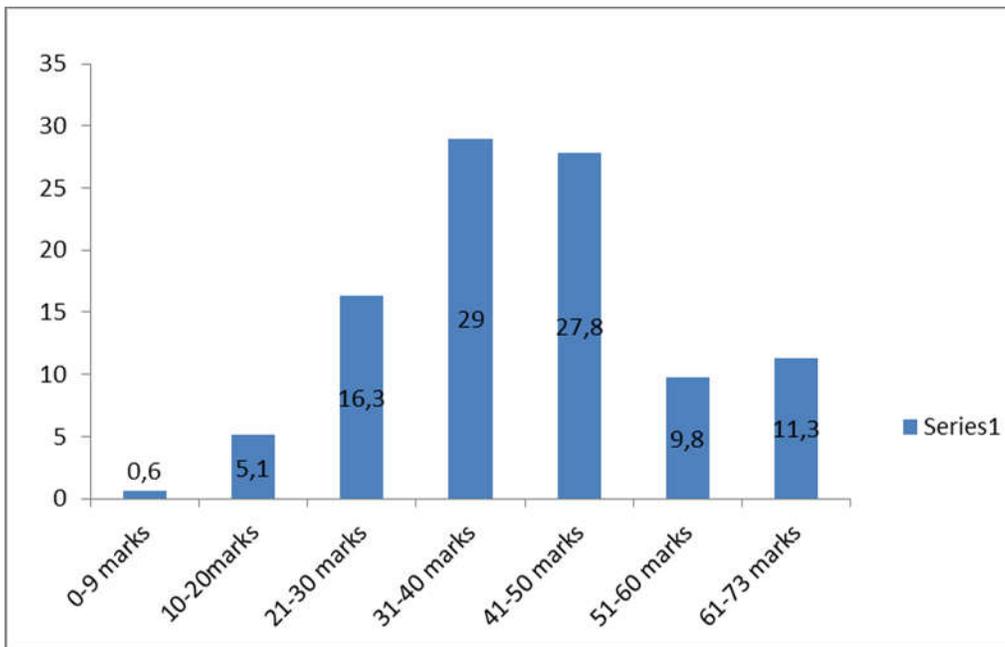
The respondents (teachers) were also asked to testify if they ever attend some training or not. The 69.2% confirmed that they have attended some training while 30.8% did not attend any. This percentage of those who did not attend, though it is not high, is very significant given the advantages of those training as revealed by the respondents themselves in the question that follows. The respondents (teachers) were asked to determine any importance of the pedagogical training to see whether they are aware of the gaining's or loses from those training when they attend some or when they do not attend. The respondents were asked to give their point of view about the importance of trainings after they have been graduated and employed as teachers. 14.0 % of respondents said that those training help them to exchange ideas with colleagues; 24.0% said that the trainings help them in improving their knowledge and skills, while 62.0% answered that those training help them in improvement of teaching methods.

**4.4. Judgement of Students’ Academic Performance and Determining Factors.**

The same respondents (teachers), headteachers as well as students were asked to judge the learners ‘academic performance to be good or poor and the factors behind that good or poor performance. The views of respondents were analyzed and categorized in different themes. All respondents affirmed that the learners’ academic performance was good as it was indicated in the below graph. The factors behind that good performance were explained and the summarized ideas provided by respondents were grouped into themes and presented as this: The respondents revealed that the good performance is determined by factors including basic teaching-learning materials at 3.7%, good students ‘educational background at 7.4%, motivated teachers at 7.4%, competent and qualified teachers at 31.5%, good school leadership and management at 31.5%, effective teaching approach at 5.6%, motivated learners at 11.1% and not overpopulated classes at 1.9% .The greatest percentage is observed on teachers and students added together. That’s that when the instructional materials as part of the instructional resources are missing, the teachers and learners, human instructional resource as part of instructional resources can stand. With help of the good school leadership; motivated, competent and qualified teachers and motivated learners determine the good performance of learners.

To come up with valid and reliable results of the research, the researcher used documentation method to collect and analyze the learners’ academic performance from the results of the national examination of senior six in the school years 2012-2015. The results were obtained from the selected schools’ headmasters ‘offices. The graphic bellow showed the scores of ‘level students in 2012-2015 school years.

**Figure1: Student’s academic performance.**



Source: Primary data

From the above representation of learners’ academic performance, it goes without saying that learner’s perfumed quite well since 29.0% and 27.8% represented students who scored 31-40 and

41-50 respectively. It was obvious that other, factors being regulated, these students could be eligible to enter public university according to REB requirements and standards when they were in Science subjects.

However, Students who scored between 51-60 marks were 9.8% and 61-73 were 11.3% respectively. The percentage is very low for students who could perform highly. Thus, if these were students doing other subjects than sciences, it goes without saying that learners who were eligible to enter a public university, according to REB requirements, could be very few.

Again 0.6% which represented learners who scored between 0-9 and 5.1% for those who scored 10-20 was not to be ignored. This was a great number of learners who were not eligible to enter a public university according again to REB requirements as far as marks were concerned for both sciences, humanities and social studies.

The question asking the judgment of learners' academic performance and factors behind that performance were asked to all respondents to avoid biases that could emerge from one side.

All respondents (teachers, learners, and headteachers) provided almost the same answers as we have seen it from the data analysis provided by teachers and as we shall see that learners also did make any difference.

All respondents (headteachers) from the selected schools responded that the performance was good. Thus; the factors behind that good performance were also enumerated by headteachers.

As explained in the interpretation of data from teachers, the data from headteachers revealed that the teaching-learning aids as the material part of the instructional resources were still few to be used to determine learners' academic performance. They represented 15.4% while the human-related factors such as motivated teaching staff at 7.7%, disciplined students at 15.4%, qualified teachers at 7.7% and stability of teachers at 7.7% represented 38.5% in total. Thus, human resources (teachers and learners) are the most key to effective teaching-learning process to determine learners' academic performance.

The results from learners revealed that books were used at 100% but they were used by learners only when they were with their teachers in the classroom. Two learners told the researcher that books are the primary instructional resources used by both teachers and learners. However, the books were so few that learners accessed them when they are only in classroom. Another concern from those learners was that the available books were of one kind or category that when they were asked to do research, they had no interest because they always consulted the only one book they had been using in class. They wished to have a variety of books containing different views about one subject or topic.

As far as audio-visual materials like films, radios, and related activities, field trips were concerned; learners from the selected schools answered not to have been using them at 100%.

## **5. DISCUSSION OF FINDINGS**

The current section discusses the key findings of the study with respect to different themes presented in the previous section:

### **5.1. Unavailability of Instructional Resources**

In general, it was obvious that from the respondents' points of view instructional materials were available to determine the good academic performance of a 'level students. These findings agreed with Anyawu (1987) who stated that books and textbooks or related design instructional materials were the most comply used by teachers to disseminate knowledge.

However, when the results of the findings were administered for the 'member check' to ensure validity, respondents clarified that they have had interpreted the question in regard with the necessity and influence that instructional materials exert on students' academic performance. In this view, the majority of respondents confirmed that (as it was revealed by the agreed percentages in the analysis) books, textbooks, and all audio-visual materials earlier explained influence learners 'academic performance in the sense that once they are available and effectively used improve the performance, and the opposite in the inverse situation. These findings agreed with Broderick (1965, p.426) who ascertained that these materials contribute to the efficiency depth and variety of learning

The results presented revealed that most of the mentioned instructional resources are either not stuffiest or not available in the selected schools. Therefore, it can be concluded that the high performance which is not being achieved in those schools may be a result of the lack of relevant instructional resources as it was revealed by the results about the status of those instructional resources. Though the schools have good leadership and management; though learners are motivated, disciplined and have good educational background; though teachers are competent, experienced, motivated and qualified to improvise some instructional materials to facilitate teaching-learning process to improve learners academic performance, there is a paramount role played by the use of unrelated instructional resources like consumables and field trips to influence learners' academic performance.

Thus, unless other measures are taken to remedy and compensate the situation, it has been ascertained all along with the literature review that the lack of these instructional materials challenges the teaching-learning process to influence negatively the academic performance of learners.

### **5.2. Importance of Instructional Resources in the Teaching-Learning Process.**

The results have shown that once the instructional resources are effective and well used; they influence and help an effective teaching-learning process for better students' performance achievements. These findings are in line with Ogundele (1987) who stated that a good teaching aid must be visible, attractive and hold attention to influence the academic performance of students. The findings were again buttressed by Adeyemo (1985) who stated that instructional materials should be used to supplement oral explanations and descriptions provided either by the teacher or the learner in the teaching-learning process. Since teachers were aware of the importance of instructional materials, it is obvious that the no use of these materials might be caused by other factors like the lack of the materials or the contextual challenges.

### **5.3. Factors Hindering the Use of Instructional Resources**

The findings revealed that there were many hindrances for the effective use of instructional resources to improve learners' performance from the selected schools. These include among others

the overpopulated classes, the lack of refreshing pedagogical training or seminars, while these training were judged to be helpful in improving teachers' knowledge and skills as well as teaching methods. The findings agreed with Baker (1986) who listed factors affecting the use of instructional materials. Among others, he mentioned; nature of the subject matter, objective to be attained, interest, teachers' ability and so on. In addition this was interpreted by the researcher in line with the fact that some teachers are not qualified in education. So those training are helpful to them to gain some approaches and mechanics of teaching. These findings were in line with what Broderick (1965) said that refreshing pedagogical trainings are vital for teachers in not only teaching approaches updating but also experience exchanging and gaining.

#### **5.4. The Students' Academic Performance Analysis**

The findings from the data from both learners and headteachers revealed that the learners' performance is fairly good but not sufficient to the extent that a good number of students can enter public universities as it was shown in the results presentation and analysis. Though the material part of instructional resources is missing from those schools, the teachers and learners, human instructional resource as part of instructional resources can stand; with help of the good school leadership; motivated, competent and qualified teachers and motivated learners determine the good performance of learners. Thus, human resources (teachers and learners) are the most key to effective teaching-learning process to determine learners' academic performance.

This agrees with the Centre for High Impact Philanthropy (2010,p.7) on the importance of a teacher( as cited in Amy, M.; Rachael, C.; Sterling, C.; Rebecca, W.; Kacy, S. and Christopher, B., 2011, p.5) :

A quality teacher is one who has a positive effect on student learning and development through a combination of content mastery, command of a broad set of pedagogic skills, and communications/interpersonal skills. Quality teachers are life-long learners in their subject areas, teach with commitment, and are reflective upon their teaching practice. They transfer knowledge of their subject matter and the learning process through good communication, diagnostic skills, understanding of different learning styles and cultural influences, knowledge about child development, and the ability to marshal a broad array of techniques to meet student needs. They set high expectations and support students in achieving them. They establish an environment conducive to learning, and leverage available resources outside as well as inside the classroom.

If we analysis well, all the findings have been coming back to the good role played by the teacher as the human part of instructional resource to determine the good performance of students experienced in the selected schools and can be generalized in Rwanda public boarding secondary schools.

## **6. CONCLUSION**

Basing on the findings in this research, the following conclusions were drawn that first of all, the performance of students in national examination at the end of S6 will be highly improved if teachers in Advanced level were not only competent, motivated and qualified, but also using the instructional resources to positively influence the learners academic performance. Secondary, Advanced level learners will perform high when the instructional resources possess the characteristics of appropriateness, relevancy, variant, sufficient, simplicity, visibility, and

attraction; hence improve the learners' academic performance. To this end, instructional materials were very important to influence A 'level learners' academic performance as they can simplify, clarify what is complex and make concrete and real what is abstract and metaphysical. In addition to that, the knowledge and skills of different subjects become interesting to learners when they are taught and disseminated by experienced, committed, motivated, dedicated and qualified teachers. Therefore, a number of recommendations can be addressed in that education planners need to critically consider the role that public secondary schools play in the education of the citizens of Rwanda and the instructional resources were found to be important to influence learners' academic performance. Thus, more various, sufficient, relevant and effective instructional resources need to be made available to public secondary schools in Rwanda.

## REFERENCES

1. Adalikwu, S., & Iorkpilgh, I. (2012). The Influence of Instructional Materials on Academic Performance of Senior Secondary School Students in Chemistry in Cross River State. *Global Journal of Educational Research*, 12(1). Retrieved December 10, 2015 from <http://www.ajol.info/index.php/gjedr/article/view/91018>
2. Adeyemo, P.O. (1985), *Principles and Practice of Education*. Ado-Ekiti: Omolayo Standard Press, Nigeria.
3. Amy, M. et al (2011) Improving students learning By Supporting Quality Teaching. *EPE Research Center*. 1-52 Retrieved from [http://www.edweek.org/media/eperc\\_qualityteaching\\_12.11.pdf](http://www.edweek.org/media/eperc_qualityteaching_12.11.pdf) on 21/02/2016
4. Administration methods (2010), Retrived March 2, 2016, from Students Voice Web site: <https://www.studentsvoice.com/app/wiki/>
5. Angela Janovsky (2015), *Instructional Materials: Definition, Examples & Evaluation*, retrieved from: <http://study.com/academy/lesson/instructional-materials-definition-examples-evaluation.html> on 16th December, 2015
6. Anyanwu, J.N. (1989), *Introduction to Educational Technology for Colleges and Universities*. Okene: Ade-Olu Press.
7. Bakare, G.M. (1986). *Poor Academic Performance, Aetiology, Diagnosis and Remediation*. Ibadan: University Press.
8. Bisiriyu, A.A. (2016). Instructional materials as correlates of students' academic performance in biology in senior secondary schools in Osun State. *International Journal of Information and Education Technology*, 6(9), 705-708. Retrieved from <http://www.ijiet.org/vol6/778-PS043.pdf>
9. Catherine, M. (1956). Research in the Use and Purposes of Instructional materials. *Educational Leadership*, 425-429
10. Corey M.S. (1948). Imperatives in Instructional materials. *Educational leadership*
11. EFA (2005). Global Monitoring Report. *Understanding Education Quality*
12. Golafshani, N. (2003). *Understanding Reliability and Validity in Qualitative Research in the Qualitative Report. Volume 8*, Number 4, 597-607. University of Toronto, Ontario,

## Canada

13. Independent school district 196 (2002). Instructional Resources. *Educating our students to reach their full potential*, 603, 1-4
14. Irving, K. et Al. (2004). *The role of cognition in classical and operant conditioning*. <http://onlinelibrary.wiley.com/doi/10.1002/jclp.10251/full>
15. Malterud, K. (2001). *Qualitative research: standards, challenges and guidelines*. Retrieved from: <http://www.sciencedirect.com/science> on 04/03/2016
16. Margrette, S. (2000) Focus on research methods combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. *Research in Nursing & Health*, 23, 246-255. Retrieved from [https://axis.cdrewu.edu/axis\\_doc/functions/research-design-biostatistics/sampling\\_collection\\_analysis.pdf](https://axis.cdrewu.edu/axis_doc/functions/research-design-biostatistics/sampling_collection_analysis.pdf) on 6/03/2016
17. Ntasiobi C., Francisca N. & Iheanyi O. (Eds.). (2014). *Effects of Instructional Materials on Students' Achievement in Social Studies in Lower Basic Education in Nigeria: Proceedings of the International Conference on 21<sup>st</sup> Century Education in Dubai*. Dubai: UAE.
18. Obanya, P. A. I. (1989). *Potentialities of Educational Materials in Africa. Inter-learning of Educational Innovation*,. Darkar: UNESCO- BREDA,.
19. Ogundele, A. (1987b). *Social Studies for Teachers Grade Two Certificate*. Usi-Ekiti: Jolayemi Printing Press.
20. Okobia E.O. (2011) Availability and Teachers' Use of Instructional Materials and Resources in the Implementation of Social Studies in Junior Secondary Schools in Edo State, Nigeria. *Review of European Studies*, 3(2), 1-8.
21. Olufimilayo, T.I. (2014) Availability and utilization of instructional materials in selected andragogical setting in Ogun State, Nigeria. *International Journal of Humanities and Social Sciences*, 4(4), 268-272.
22. Omeje, M. O. & Chineke, S. O. (2015) Availability and the Use of Instructional Materials in:
  - a. The Teaching and Learning of Igbo Language. *Mediterranean*
  - b. *Journal of Social Sciences MCSER Publishing, Rome-Italy*, 6, (3S1) 286-289
23. Orodho, J. A. (2005). *Elements of Education and Social Science Research Methods*. Kanezja Publishers.
24. Philliberet al. (1992). *Designing Case Studies*, Retrieved from [https://noppa.aalto.fi/noppa/kurssi/tu-22.z/materiaali/readings\\_for\\_the\\_case\\_studies\\_course\\_21.pdf](https://noppa.aalto.fi/noppa/kurssi/tu-22.z/materiaali/readings_for_the_case_studies_course_21.pdf) on 10 February 2016.
25. Smith, M.F. (1972). Information about instructional resources. *Educational Leadership*. The Partnership Management Board (n.d), *Active Teaching and Learning Methods*, Northern Ireland Curriculum
26. Yusoff, M. S. B. (2014). Association of academic performance and absenteeism among

---

medical students. *Education in Medicine Journal*, 6(1), 40–44. Retrieved from <http://doi.org/10.5959/eimj.v6i1.248>

27. William, G. (1988) Association for supervision and curriculum development guide. Retrieved from [http://rltperformingarts.org/rltpa-study-area2/files/2011/08/Conceptions\\_of\\_L\\_T.ppt](http://rltperformingarts.org/rltpa-study-area2/files/2011/08/Conceptions_of_L_T.ppt) on 25/02/2016



© 2017 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).