

TEACHING AND LEARNING PROCESS
**SCHOOL MANAGEMENT AND EFFECTIVE
USE OF SMART CLASSROOM IN TEACHING
AND LEARNING PROCESS**

ISSN 2277-7733
Volume 9 Issue 4,
March 2021

Jean de Dieu Mushimiyimana
University of Kigali

Abstract

Many countries are improving education system as an instrument that can lead them to speed development. This study was carried out to investigate the School management and effective use of smart classroom in teaching and learning process. The study used 39 participants from Gicumbi District in Rwanda. The results of study indicate that majority of respondents explained that leadership has great effect on the effective use of smart classroom, contributing in ICT development in country and rising country economy.. And teachers gave suggestion on how government help in improving use of smart classroom.

Keyword: *school management, smart classroom, teaching and learning process, Rwanda.*

Nowadays, globalization and technology are affecting world at high speed, these are totally different from the ancient world, the time that human being used traditional ways of living. Rapid exchange of information and data has affected world. Traditional way of teaching was basically on fixing information on wall, which is totally different from introduction of smart classroom. It doesn't mean that one is uprooting traditional teaching methodology but integrating traditional methods with new (Hemant & Sharma, 2016). School management goes hands in hands with effective school leaders who always make monitoring and evaluation by checking if how planned activities are being progressed by subordinates. This helps to know if they are still working towards set mission and vision of school (*Leadership for Learning: A Headteacher's Professional Companion*, 2019). According to Yusuf, (2005) indicated that education also has been affected by (ICT) revolution. It means that since introduction of IT, teaching method has been changed because teaching and learning methods adopted modern methods. The world moved from traditional ways of teaching and learning and then adopt new modern ways of delivering courses by using technology. Nowadays, it doesn't require much energy or spending much time relying on sitting in class or preparing lesson for the students, facilitator can even teach and prepare contents while he/she is at home. Smart class has changes traditional teaching and learning methods of considering students as passive agents of teaching and learning but it lets them participate in activities and develop their research. Smart class uses instructional materials that are helpful to attract learners attention because it uses videos, audio, and other electronic devices (Ganaie & Bano, 2016). School managers need training on how to manage school and educational institutions correctly. School leadership has given priority at international level by focusing or changing education policies. School management and leadership staff are among the organs that should motivate as well as improving the capacities of teaching staff (Khan et al., 2011). Many important researchers proved that provision of training or having well trained man power is a strategy of increasing industrial productivity (Reza & Umar, 2019).

TEACHING AND LEARNING PROCESS

ICT activate the world in terms of innovation, creativities and expose new generation to market place and one who learns in this modern ways of education can adopt himself or herself anywhere. ICT strength teaching and learning process and helps school change its methodology (Bergin, 1992),(Davis & Tearle, 1999). Many countries are using more effort to introduce smart classroom in education so that they cannot be left behind in world of technology. There are continual provision of continuous professional development in ICT as a strategy to enhance teachers adopting them in technological arena and making smart class effective. Stakeholders have turned their eyes to the Introduction of ICT in secondary schools by providing tools such computers, furniture, network and training to the implementers.

Students around the world needs skills that they can globally use everywhere. According to (Darajat, Ojat & Basuki, 2014) explained that technology has developed the flexibility in teaching and learning because learners can have access to the materials anytime and everywhere, because the content can be uploaded online by teachers or save it offline. In addition to that duties of giving quality education and curriculum implementation, cannot be responsibility of stakeholders or other actors of education but also requires changing many philosophy and government policies. When student misses class, can learn at home by browsing using internet and then access the content. ICT introduces new methodology in teaching and learning process. Schools shift from using teachers centered methods or lecturing to learners centered method as long as learner can access materials anytime and wherever she/he can be, means that technology has developed research system, self-teaching to the learners and learners become very creative and innovative without waiting teachers intervention(Fang et al., 2012).

Many implementers were given training on how to adopt new teaching methods, teachers were given in service training and in additional continuous professional development support (Ndihokubwayo & Habiyaremye, 2018). In addition some Rwandan school principals were trained about school management on how to manage schools equipment and resources so that those school resources can provide significance impact in education but there some gaps in management of those materials that are provided in teaching and learning those training was given by VVOB¹(Sandhya et al., 2018)(Bennett, 2013). Researchers explained that principal should put computers in computers lab where students and teachers can access them easily instead of keeping them in store place of different school and this can help in implementing curriculum activities and cross-cutting issues. ICT conducive environment encourage multimedia tools. ICT has significance importance in developing quality of education and e-learning programme².

Government of Rwanda has introduced smart classroom in education and started supplying materials such computers, internet, building infrastructures that would help in developing teaching and learning by using ICT. Students should be prepared to 21st century. Some schools that has computer labs use them in computer lesson only not as smart classroom that can be helpful in teaching all kind of subjects. Rwandan

¹ VVOB: is a Belgian non-profit organization with more than 30 years' experience in sustainably improving the quality, efficiency and effectiveness of education.

² E-Learning: Electronic Learning

government is moving from One Laptop per Child to the concept of Smart classroom that will be an important programme in strengthening technology by reducing costs and increase the materials accessibility and equity (Ministry of Education, 2016).

While government put more effort in availing materials and other equipment that can help in using ICT³ in teaching and learning. Many schools leaders are not motivated to let teachers use smart classroom as it was planned by the government of Rwanda but computers can be in store without being in activity. REB⁴ and ministry of education do not put make rules and regulation clear about effective use of smart classroom. Many school principal deserve knowledge and skills related to school management, data management, communication and making facilitation of her/his subordinates of effective way (Sackney & Walker, 2006).

Rwanda is developing education as an aspect that can lead us to vision 2050 (Government of Rwanda, 2011) country is projecting to rise economic, political aspect basing on introduction of technology in all sectors. This will enhance country to produce human capital that will outcompete others at international market as job creators instead of job seekers.

Research Questions

What is the role played by school leadership in use of ICT in education?; What are the challenges that faced during the use of smart classroom in teaching and learning activities?; What are the possible solution to the challenges that hinder the effective use of smart classrooms in Rwandan secondary schools?

Methodology

This study use qualitative research design, because this method allow respondents to express his/her opinions and ideas freely without limitation of time and other circumstance that can prevent respondent to give all available information (Tang et al., 2018; Duan et al., 2015).

According to (Mathis, 2016) indicated that qualitative research give chance to interviewee to put out their ideas and feeling about the topic instead of dictating or imposing them the types of things they should answer that was imposed by others. Purposeful sampling technique were employed to the teachers and director in charge of studies and head teacher. This techniques are very important in researches that are qualitative in nature when researcher wants to collect the information that are rich and relevant to the area of interest (Duan et al., 2015).

The researcher gather information from different respondents: teachers, about extent to school management facilitate them to use smart classroom while delivering lesson to the class and during the time teachers want to use technology in class, Headmasters and Director in charge of studies were asked on how do they facilitate teachers in use of smart classroom and their in empowering the program at school, Sector education officers were asked about their role in motivating teachers in implementing use of smart classroom and on how do their supervision. This research was conducted to the school which locates in Gicumbi District, Northern Province, Rwanda. Selected school was

³ ICT: Information Communication Technology.

⁴ REB: Rwanda Education Board.

TEACHING AND LEARNING PROCESS

GS⁵ Kageyo because this school is among the school which was given the equipment that could help them in introducing smart classroom. Therefore, the survey was conducted to 36 Teachers, one head teacher, one DOS⁶ of secondary school in GS Kageyo and one SEO⁷. Teachers were selected to be included in research because are key users of smart classroom and they have all information, In addition, selected teachers, were selected because they received training on ICT in education that enhance them to be aware of using Smart classroom, simply, they were targeted because most of them have basic skills and knowledge on technology that they received from training, CPD⁸ and in University, as majority of them learned University, DOS were selected because they kept records of marks before introducing smart classroom and after its implementation. Head teacher and SEO were selected because they know background and reason for implementation of smart classroom and hold key role in leadership and management of school resources and Sector education officer were selected because is the one who is in charge of all activities of education take place in sector level.

In this study, researcher use interview as an instrument for data collection. As study aims at understanding School management and effective use of smart classroom in teaching and learning process, interview was the best instrument to use. Researcher asked respondents about the time he/she will avail to sit for interview question. Then researcher recorded the conversation by using telephone audio recorder. According to (Birt et al., 2016) explained that member checking" "is a technique for exploring the credibility of results. Data or results are returned to participants to check for accuracy and resonance with their experiences" (p.1802) and then later researcher sent Audio to interviewee to listen to the conversation and he/she will be allowed to comment if there is something missing to add or there unnecessary information that can be removed. Documentation also were used to search for additional information that can be relevant to what researcher was studying. Documentation will be use by reading records of the past marks of students in different exams. Researcher analyzed different document that are available at school. This obliged researcher to read books, essays, articles, reports and magazines that related to the problem of study.

In the process of analyzing data, the researcher used thematic analyzes methodology for data analysis. Thematic is the methods of analyzing, reporting, interpreting patterns or themes (Braun & Clarke, 2006, p.79) since the topic is understanding School management and effective use of smart classroom in teaching and learning process in Gicumbi district. Using thematic as methodology is suitable for achieving the objective of this study. In addition to that the results that are found used thematic method is very understandable to everybody (Braun, 2006). for ethical risks, some participants declared that they are not secure for sharing their information and researcher ensured them that information provided by them will be kept and remain confidential.

In the process of data analyses researcher used six phases of thematic analysis processes as described by (Braun & Clarke, 2006): first phase: familiarizing oneself with data: the

⁵ GS: Groupe Scolaire

⁶ DOS: Director in of Studies

⁷ SEO: Sector Education Officer

⁸ CPD: Continuous Professional Development

TEACHING AND LEARNING PROCESS

researcher transcribed data from media, interviews into written form. Read and re-read, then transcripts, listen to the recording while writing down notes.

Second phase: generating initial code: the researcher coded most important features systematically across the whole data set. Collate data each data to relevant code (Nowell et al., 2017). Third phase: searching for themes: the researcher arrange codes with their perspective themes, means that researcher gathers all data to their relevant themes. Fourth phase: reviewing themes: researcher checked if all themes are matching or working with extracted codes and entire data set. Then late generate thematic map. Fifth phase: defining and naming themes: researcher refine the details of each themes, make a clear definition and name of each theme. Sixth phase: producing reports: Research analyze select the appropriate extracts and make final report. Discussion of analysis should be related to research questions or literature

Findings

The researcher used pseudonyms in presenting the results to preserve the names of participants and school confidential. For example the teachers were given (T1, T2, T3.....) while authorities were given (A1, A2, A3.....). Remember that in Authorities, there are SEO, Head teacher and DOS. The following part of this study is divided into three sections: first is school leadership style in developing use of ICT in education. Second is the challenges that faced during the use of smart classroom in teaching and learning activities. Third is possible solutions to the challenges that hinder effective use of smart classroom in Rwandan secondary schools.

School leadership style in developing use of ICT in education

Teachers and authorities who participated in this study were asked to describe relationship between school leadership style and effective use of smart classroom. During interview some respondents explained that “some leaders at school use authoritative style that worsened communication between teachers and authorities and this cause tension among both side. So teachers do their own tasks and authorities do theirs because there is no collaboration” (T1, T5, T6, T10, T78, T11, T25).

Another interviewee also continued describing leadership style by explaining that “among our leaders there are some who use bureaucratic style, means that they always stay in the office, using computers and signing some officials’ documents, they do not even make movement around compound observing how situation is, even asking them help or to intervene in teaching and learning is not easy. They do not know if computers are working or if they were stolen” T3, T7, T17, T25, T30, T31, T2, T7, T8.

Leadership style can be among the factors that can contribute in effective use of smart classroom, other participant indicated that “another challenge is that there are leaders who manifest kind of nepotism and despotism among the teachers, for example one teacher can ask a computer to use but leader refuses to hand it to that teacher while others have access to those electronic devices at school”. T20, T24, T26, T5, T9, T15, 34, 35 and A1

Among the participants one tried to explain that “leadership style as an important factor that can enhance effective use of Smart classroom at school and explained that some of leaders use dictatorship, others laissez faire, this become barrier to the teachers to access school instructional materials and other equipment” (A1, A3).

Challenges that faced during the use of smart classroom in teaching and learning activities.

This section presented perspective of teachers and authorities while they are conducting teaching and learning in smart classroom. They were both asked in interview the challenges that they face. Extracted that was combine in one theme of challenges faced. The data analysis based on the challenges that was given by teachers and authorities, are grouped into four main challenges which are lack of extrinsic motivation, language barrier, inadequate professional training, big number of learners and insufficient instructional materials.

Lack of extrinsic motivation.

One teacher explained that *“challenge that she faces is that there is no motivation from government and school leaders, because sometimes teachers are obliged to bring their computers or borrow projectors to be used in classroom, because there is no computers at school or they are not sufficient. Some leaders do not let teachers, use computer lab fearing that they can be stolen by students”* T13.

Another respondent explained that *“at school, many computers remain in store at school. No one who is allowed to enter and use them frequently in teaching and learning activities. Because leaders they do not put their time to welcome teachers in using of smart classroom”* (T36).

For example one authority said *“that they work under fair because when one is stolen a computer is put in jail or be dismissed from job so they decide to keep them for the security and even ministry of education and other organs demotivate them because of those strict punishment”* T1

Language barrier

Among respondents one come up with challenge by saying that” Many devices and electronic tools that we use in smart classroom are in English. Teachers and learners are obliged to use English while they are in class. It became barrier to both side to teachers and students. And this affect poor academic performance of learners” T19.

Inadequate professional training.

Use of smart classroom is also challenged by inadequate professional development, one of the participant said that” *there is a problem of insufficient training about use of technology in teaching and learning process, trainings are few per example: there are teachers who are is in teaching and learning process who did not go in training in his life time. Training are not sufficient to the teachers, even new hired teachers do not get induction week which can give overview to the new teacher.* (A3, T2, T11, T27).

Big number of learners

Many teachers and authorities claim that around the countries, there are problem of big number of students but schools are few, teachers reported that *“overcrowded classroom are among the challenges that hinder effective use of smart classroom, for example you can find seventy students are under one teacher while one classroom in some schools can host 80 learners. Computer lab that has 45 computers is expected to host all the students at school. This is a challenges for effective implementation of smart class”* (A3, A4, T36, T33, T31, T27, T23, T11).

Insufficient instructional materials

Instructional materials are insufficient from the past years, this was challenge in education system in Rwanda, teachers explained that” *in Rwanda we have problem of having instructional materials like books, computer lab, and other materials. But accessing materials that are saved on internet is not easy because poor internet connection, some schools have internet connection while*

TEACHING AND LEARNING PROCESS

other do not. Implementation of smart classroom is not possible while we still have the issues of internet connection and even technological materials are scarce” T2, T14, T26, 23, T33, T21, 24.

Possible solutions to the challenges that hinder effective use of smart classroom in Rwandan secondary schools.

This section presents perspective of teachers and authorities on possible solution to the challenges that hinder effective use of smart classroom. Teachers, authorities during interview were asked to share their opinions and ideas about the problem. This is subdivided into four themes.

Provision of continuous professional development to both authorities and teachers.

Twenty teachers explained that one of the challenge that hinder effective use of smart classroom is insufficient training that are given to the teachers. *Teachers need training about technology and use of IT⁹. Many teachers did not get enough training about smart classroom, they do not know how to use this devices such projectors, interactive whiteboard and computers.* (T10).

Increase numbers of teachers and classrooms

Ten teachers and two authorities explained that government should increase number of classes and teachers as solution to overcrowded classroom. One of teachers said that *“Many schools have problem of insufficient building that can host big number of students who are enrolling studies. It is problem that become routine at schools for example you can find three children sitting on one chair. There is no space in class as one class host 50 students. Government should build new classes and also increase number of teachers.”* T15.

Evaluating leadership and management of schools.

School leadership and management is crucial for enhancing effective use of smart classroom as described above how leadership style can affect positively or negatively use of smart classroom. Many respondents explain that *“Leaders are also among the people who can delay effective use of smart classroom. Government and RED have to make monitoring and evaluation of school leadership and management. In addition they can even provide to the leaders professional development about leadership and management”.* A1 and T3, T5, T6, T7.

Strengthening use of technology

School authorities and teachers who participated in this study contributed to grant possible solution to different challenges. One teacher explained that *“the problem of scarcity of instructional materials also affect ineffective use of smart classroom. It can be easy for teachers to get instructional materials from internet and other offline materials that can come to supplement existence materials. For example Rwanda Education Board should put materials on internet not only REB but also schools and teachers”* (T28).

Discussion

This chapter explain the findings of study and the show the way they are relating with research questions and existing literature.

Government and Rwanda Education Board should motivated teachers and authorities in different means such providing rewards, increasing salaries and giving them scholarship, sending teachers to the seminars that related to smart classroom. Sharing information with other teachers where smart classroom is developed. Extrinsic

⁹ IT: Information Technology

TEACHING AND LEARNING PROCESS

motivation is motivation that one engage in by expecting income and physical outcome(Linnenbrink et al., 2002)

Teacher and authorities reported that giving teachers professional development can be strategy to increase teachers motivation and other employees(Gravani, 2012). Giving professional development to the teaching and administrative staff can be the best solution, to the challenges that hinder effective use of smart classroom.

Language barrier, in 2009, Rwanda education system was shifted from French to English as an instructional language. From that time many teachers and authorities faced language barriers till now, depending to finding from this study, majority of teachers and authorities indicated that they are not able to express themselves in English. This forced many teachers to start using local language in teaching and learning, many teachers are struggling in learning English but it is still problem because they do not know many vocabularies (Anyiendah, 2017). This was similar to majority participants in this study who explained that it is not easy to shift from French to English.

School management has to reformulate because some of head teachers accuse ministry of education and Rwanda Education Board to use tough punishment to the leaders who lost school materials especially computers and other technological tools. Some of punishment there are sending them in jail, firing sacking from job and forced resignation. Some leaders refuse to take this risks and decide to let those materials in stores. Finally, they should be partnership among those administrative structure in handling that problem of unfair collaboration between school management.

Conclusion

School management and effective use of smart classroom in learning and teaching process. Study clarified that in education system of Rwanda has some of the challenges as participants such as teachers, head teachers, director in charge of studies, sector education officer explained a lot. Some of the challenges related to language barrier, poor school leadership and management style, insufficient continuous professional development. Study confirmed that effective use of smart classroom still has a long journey which can take us to the achievement. Simply use of smart classroom is poor. Teachers are advised to use improvisation in teaching and learning and improve creativity and innovation that can be added to the training that Rwandan government is giving them.

Rwanda education board and ministry of education should collaborate hands in hands to make the programme clear and set rule and regulation that guide the use of smart classroom. Instead of keeping the machines and others materials in store, because they are afraid of losing them and face sanctions from higher authorities. Provision of enough training about use of smart classroom is necessary to the teachers while authorities should be given both training on school management and on smart classroom.

References

Anyiendah, M. S. (2017). Challenges Faced by Teachers When Teaching English in Public Primary Schools in Kenya. *Frontiers in Education*, 2(May 2017), 3–6. <https://doi.org/10.3389/feduc.2017.00013>

- Bennett, D. (2013). School Leadership. *School Leadership*, 1, 1–12. <https://doi.org/10.4324/9781315042411>
- Bergin, D. A. (1992). Leisure Activity, Motivation, and Academic Achievement in High School Students. *Journal of Leisure Research*, 24(3), 225–239. <https://doi.org/10.1080/00222216.1992.11969890>
- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? *Qualitative Health Research*, 26(13), 1802–1811. <https://doi.org/10.1177/1049732316654870>
- Braun, V. (2006). Using thematic analysis in psychology. 3, 77–101.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Darojat, Ojat & Basuki, H. ardjojo. (2014). Improving Curriculum through the Systems Model for Distance Education. *Teaching and Learning in 21st Century*, 2012, 251–262.
- DAVIS, N., & TEARLE, P. (1999). the Research and Development of an International Core Curriculum for Infomation and Communications Technology in Teacher Training. 1, 1–32. <papers3://publication/uuid/A0A266F4-18E4-41C4-B1F6-EDFB58C6E8CE>
- Duan, N., Bhaumik, D. K., Palinkas, L. A., & Hoagwood, K. (2015). Optimal Design and Purposeful Sampling: Complementary Methodologies for Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 524–532. <https://doi.org/10.1007/s10488-014-0596-7>
- Fang, Z., Liu, Y., Liu, S., & Chen, H. (2012). Functional model for zero-sum game and its matrix solution concerning uncertain information. *Conference Proceedings - IEEE International Conference on Systems, Man and Cybernetics*, March, 17–23. <https://doi.org/10.1109/ICSMC.2012.6377670>
- Ganaie & Bano, M. (2016). Smart Classroom Learning Environment And Performance of First Grade Students – A Study. 4(2), 4937–4941.
- Government of Rwanda. (2011). National ICT Strategy and Plan NICI 2011- 2015. 85.
- Gravani, M. N. (2012). Adult learning principles in designing learning activities for teacher development. *International Journal of Lifelong Education*, 31(4), 419–432. <https://doi.org/10.1080/02601370.2012.663804>
- Hemant, P., & Sharma, L. (2016). Effectiveness of EDUCOMP smart classroom teaching on achievement in mathematics at elementary level. 2(6), 683–687.
- Khan, M. F., Ahmad, S., & Ali, I. (2011). The impact of school management trainings and principals attitude on students learning outcomes. *African Journal of Business Management*, 5(7), 2668–2678. <https://doi.org/10.5897/AJBM10.913>
- Leadership for learning : A headteacher ' s professional companion. (2019). May.
- Linnenbrink, Elizabeth, A., Pintrich, & Paul, R. (2002). Motivation as an enabler for academic success adaptive self-efficacy beliefs as enablers of success. *School Psychology Review*, 31(3), 02796015. <http://prof.usb.ve/jjramirez/PREGRADO/CCP114/CCP114 Motivacion Linnenbrink y Pintrich.pdf>

- Mathis, W. J. (2016). R - b o f e p. 3–5.
- Ndihokubwayo, K., & Habiyaremye, H. T. (2018). Why did Rwanda shift from knowledge to competence based curriculum? Syllabuses and textbooks point of view. *African Research Review*, 12(3), 38. <https://doi.org/10.4314/afrrrev.v12i3.4>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16(1). <https://doi.org/10.1177/1609406917733847>
- Reza, S., & Umar, S. (2019). Review Article of Ashley , C . and S . Maxwell (2001). “ Rethinking rural development .” *Development policy review* 19 (4): 395-425 . 19(August 2015).
- Sackney, L., & Walker, K. (2006). Canadian perspectives on beginning principals: Their role in building capacity for learning communities. *Journal of Educational Administration*, 44(4), 341–358. <https://doi.org/10.1108/09578230610676578>
- Sandhya, G., Singh, D. P., & Saini, S. (2018). IMPACT OF SMART CLASS ROOM LEARNING ENVIRONMENT ON ACADEMIC ACHIVEMENT OF THE STUDENTS. 05(47956), 119–
- Yusuf, M. O. (2005). Information and communication technology and education: Analysing the Nigerian national policy for information technology. *International Education Journal*, 6(3), 316–321.