Assessment of the Teachers' Attitude towards ICT and Learners' Academic Achievement in Geography in Nyamira County, Kenya

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Abstract: The study looked at the influence of teachers' attitudes towards information communication technology (ICT), on learners' academic achievement in geography in public secondary schools in Nyamira county, Kenya. The major aim was to assess the teachers' attitudes towards ICT usage. The study used three questionnaires and one interview schedule to collect data from 190 public secondary schools and 6 education quality assurance officers. The data was collected and coded by using statistical package for social sciences (SPSS) for analysis, use of mixed method approach was used, where descriptive and inferential statistics were analyzed and presented in form of tables. The main issues faced by teachers might have contributed to the limited use of ICT in teaching and learning process, hence affecting learners' academic achievements in geography. Teachers' attitudes will be solved when; pre –training, workshops for capacity building and in-service courses for ICT will be enhanced in all learning institutions. The study therefore recommends that teachers get trained for the implementation of ICT in teaching and learning to be enhanced and improvement of infrastructure.

Keywords: Attitude, Teacher, Usage, Influence, Assessment, Learners, Academic, Achievement

1. Introduction

The term Information and communication technology (ICT) is used to explain the diverse set of technological tools and resources that are used to transmit, store. create, share and exchange information in many sectors of the economy where education is one of them. For example, computers, internet, and live broadcasting technologies can also be used to improve learners' academic achievement of geography when well used during instructions. Kanjam (2020) observes that the role of visionary leadership is to develop the schools and infrastructure in technology in order to enhance ICT implementation.

ICT has been used by many countries in the world in their learning institutions where it has shown its importance in the concerned institutions. According to Brysch (2014) ICT has been used in several institutions where it has enabled learning to be easy by getting relevant learning materials through the internet. Wanjala (2016) states that competency of technical personnel in learning institutions, which is done through pre-service, capacity building and in-service training, in this respect developed countries worldwide have given out large amount of money to finance Education in the world.

Harte (2017) observes that the usage of ICT in North America has greatly improved in the accessibility of resource materials found in the internet which is an educational platform, enrollment is easily done even when a student is far from the institution of learning learners

can be able to access their homework and get results and any other information as pertains their learning progress. Zhao (2016) and Ayas (2015) assert that Britain is also another country in Europe where ICT usage in teaching and learning has been highly encouraged. Almost 75% of middle learning institutions in the country use ICT in instruction as observed by Ghavifekr, Mohd Saller, Shaharom, Abd- Rahim & Sengyue (2016).

According to Scherer (2019), in his studies other countries in Europe have taken the same trend such as Germany, Switzerland and Sweden just to mention a few who have encouraged its citizens that all the work done is supported using ICT. These countries spend almost half (50%) of their Education budget in ICT implementation in their institutions of learning as recommended by Varghese (2015). Syned & Jihye (2016) give an account on ICT usage in Asia where they state that South Korea is one of the countries in Asia which has embraced the usage of ICT in all fields of operations, that is in schools, hospitals, manufacturing, transport & communication, and other fields. ICT usage in South Korea has shown a big trend of technological advancement in all their fields. In education it has turned the teaching pedagogies to be student centered in their learning process moving away from the common teacher centered pedagogies. As stated bu Alharbi & Lally (2017), most of the south American countries have encouraged the use of ICT in teaching and learning because of its positive effects in their educational system where they have tried to make the implementation of ICT in their economic sector a success, as it was asserted by sang and Tandeur (2020). Heine & Carl (2015) and morgan (2014) give a detailed account on how ICT implementation is being carried out in Australia ,Casinadar (2016) and Casinadar (2015), they have given an account on how the   continent has not been left behind in the quest for the use of ICT in instruction because 45% of the schools and colleges according to Saido, Siraj, Nordin &Amedy (2018).

In Africa, Some countries have tried to embrace the usage of ICT in teaching and learning when giving instructions these countries include, South Africa (Alan & Felix 2021), Nigeria (Usman& Madudili 2020), Zambia (Cosmas& Kaiko 2021), Zimbabwe as being observed by Vincent & Madobi (2021), Tanzania (Mtebe & Raphael 2017) and Cameroon (Kanjam 2020), just to mention a few. These countries have tried to improve their educational standards by using ICT in teaching, but it has not reached a level of satisfaction when being used as a media of instruction according to Manik (2016) and Chilufya (2022).

Singh (2015) and Cener & Demirhan (2015) illustrate the importance of using ICT in teaching and learning. In Kenya where it is about 20% on its application in our learning institutions, much has not been addressed adequately in teaching and learning of geography on learners' academic achievement. This is why this study was carried out in Nyamira County, Kenya to fill the gap.

 The usage of ICT in teaching and learning process globally is on the rise currently where most people work by use of ICT gadgets in Business and Crime, Trade and in other aspects of life. During the start of Corona virus period in March 2020, many people embraced ICT usage in all places of work. Therefore, this study looked at the usage of ICT in the teaching and learning on learners' academic achievement of geography in Nyamira County, Kenya as there are few studies that have been done on ICT usage in teaching and learning of geography on learners' academic achievement.

Scholars have done research in different parts of the world, including in Kenya on the usage of ICT in teaching and learning of other subjects, much has not been done in geography. Studies done in Nyamira county – Kenya, have not fully addressed the teaching and learning on learners' academic achievement in geography.

This study looked at the usage of ICT in the teaching and learning of geography on learners academic achievement in public secondary schools in Kenya, a case of Nyamira county. The study did an in-depth analysis to look at this gap which needs to be filled through this research for the problem to be solved by getting more information on the implementation of ICT in instruction.

2. Literature Review

According to Wario (2014), The term attitude is referred to as a perception a person has towards anything new that comes to one while performing his/her duties in the line of duty, teachers who have been trained to teach using several methods of teaching can have different perceptions when integrating ICT in their classroom situation (Esfijani &Zamani, 2020). Chauhan & Malik (2016) have discussed five central psychological challenges facing effective mobile learning. They have also been supported by Twinning & Henry (2014) who have emphasized on the enhancing of ICT in teaching of English in English schools in Britain. According to Dermici ,Gonzalez,&Bednarz (2018), these scholars have given an account on how ICT has been embraced in European countries, especially in Britain, Switzerland and Germany (Chang ,Irvine & Seow 2018), and how it is being carried out in schools from pre- primary to higher learning institutions as compared to other developing countries of the world where the strategies of teaching has not yet changed much due to most teachers resisting the

changing teaching trends in the evolving education in the world as being reminded by the sustainability of the millennium development goals No 4 on quality education (Ajamoghlyan ,2016).

According to Dolton & Gren (2015) teachers have refused to in cooperate ICT in instruction even though the result show slowness in attaining good results in the performance of geography, teachers should not resist to change and they have to accept to go for capacity building seminars, workshops and inservice courses in order for them to be ICT compliant in teaching and learning of geography and be complaint with New digital age. Most teachers fear to be replaced by the teaching machines as it is asserted by Skinner's learning theory (1958) in his book the teaching machines where he has embraced the need for integrating ICT in teaching and learning that can enable learners achieve their academic goals (Armitage 2017) .

According to Prasannakumar (2014) and Jackson (2017), learning by use of ICT has been achieved by 80% from lower class to university levels, here learners can do homework from anywhere, anytime also, the registration of courses and attending class is online. In general, USA in the integration of ICT index in education is followed by Turkey in Asia and south Korea.

Nicholas & Mugeni (2014) have given the importance and the way ICT is integrated in USA schools. Further, Ila (2016) indicates how institutions in south America, for example, Chile, Brazil, Panama and Paraguay have integrated ICT in their teaching and learning process from pre- primary to senior learning colleges. Patra (2014) has stated the importance and usage of ICT in teaching and learning process in Australian schools.

In Singapore, Malaysia and the United Kingdom, teaching accreditation requirements include training in ICT use. The use of ICTs are swiftly evolving technologies, even the most fluent teachers need to continuously upgrade their skills and keep abreast of the latest development and best practices as it is stated by Al-Harbi (2014).

According to Singh (2015), attitude can change the perspective of a teacher to adopt the new technologies in teaching. Mtebe and Raphael (2017), indicate the importance of adopting to new technologies in his journal decade of technology enhancement in learning at the university of Dar-es-salaam.

In Kenya, Amuko (2015) has given a brief history of the development of an ICT policy in Kenya at the crossroads. Robinson et al (2016), share the importance of using ICT in teaching and learning and how effectively it can enhance good understanding for the learners. Aralu

(2015) gives an account on how the country is trying to solve problems and prospects of using ICT for record keeping in tertiary institutions in Nigeria. This has further been supported by (Chuku & Abraham 2018). Girish & Kumar (2017) have asserted the use of ICT in learning and instruction. The authors have emphasized the importance of using ICT in teaching, even though many teachers resist change, seeing that they can be replaced by machines while teaching.

Geng (2014) gives a comprehensive report on how teachers do not want to go for pre-service, in-service and workshops and capacity building, where teachers can be trained on how teaching can be done by using ICT, hence a better method for instruction while teaching the learners for better results (Artvinil ,2017).

These scholars also have emphasized various competences that must be developed through the educational system for ICT integration to be successful as it was asserted by Chauhan& Malik (2016) where they talk of the five important skills before giving instruction, skills with application, integrations into existing curricula, curricular changes related to the use of ICT, changes in teacher role and under pinning educational theories. These should be addressed in pre-service teacher training and built on and enhanced in –service training as asserted by Majumdar (2015).

Aralu (2015) discussing the use of ICT in different educational settings over the years invariably identifies as a barrier to success in the ability of teachers to understand why they should use ICT to help them teach better. Unfortunately, most teachers' professional development in ICT are heavy on "teaching the tools and lights on using the tools to teach (Clifford, Cope, Gillespie & French 2016).

Teacher anxiety over being replaced by technology or using their authority in the classroom as the learning process become more learner centered. An acknowledgement challenge to ICT adoption can be alleviated only if teachers have a keen understanding and appreciation of their changing role as stated by Kolowich (2014) and Benedict (2016). The researchers indicate the positive impacts on the usage of ICT in the teaching and learning process in essence when teachers are well trained in ICT integration.

Many studies have been done on the usage of ICT in teaching and learning of geography and other subjects all over the world, but much has not been done on how teachers attitude affects the academic achievement of geography learners in Nyamira county –Kenya. This study used likert scale to measure on attitude of teachers

regarding usage of ICT in instruction as asserted by Otieno (2022).

3. Methodology

3.1 Research Design

Descriptive research design and Ex- posto facto design was used to collect information about the assessment of teachers' usage of ICT on learners' academic achievement in geography in public secondary schools in Nyamira county. Descriptive analysis was done where the principals,geography teachers ,geography students and education quality officers responded to the items on the likert scale focusing on various ICT challenges that they face while integrating ICT in teaching and learning process.(Best & Kahn 2015).

3.2 Target Population

The study population comprised of Principals, geography teachers, geography students of the 190 public secondary schools in Nyamira County and five education officers from quality assurance offices.

3.3 Sample and sampling techniques

A sample of 57 secondary schools out of 190 (30%), was used for the study and five educational officers from quality assurance. The schools were stratified into four categories, National, Extra County, County and Sub-County. The required number of schools was chosen using random sampling techniques by taking 30% from each category. According to Kothari (2017) the goal is to have the same to resemble the entire population as much as possible. Proportionate sampling was used because all teachers and students of geography never had the same population and purposive sampling was used to all five educational officers because the number was small. Athopugh 498 of questionnaires were distributed only 494 were responded to and were collected for this study translating to 99.2% which was seen as excellent and could give reliable results (Etikan & Bala 2017).

4. Results and Discussion

The aim of this study was to examine teachers' attitude towards usage of ICT in teaching of geography in relation to learners academic achievement in public secondary schools in Nyamira county .Teachers attitude towards ICT usage in learners academic achievement is important in teaching when a schools aims to achieving the objectives of teaching and learning process in a school situation for the proper implementation of our curriculum under the Kenya institute of curriculum development as it has been recommended by Creswell & Clark (2017).

The respondents were requested to rank their degree of agreement on a five-point Likert scale. The outcomes of information are analyzed as shown in table 1 below.

Table 1: Responses on Teachers Attitude on Usage of ICT in Teaching of Geography

Statement	SD f	%	D f	%	N f	%	A f	%	SA f	%
Do you have sufficient knowledge in ICT?	10	11.50	42	67.80	12	13.80	16	18.40	7	8.05
Are you comfortable in using ICT?	7	8.05	54	62.10	9	10.34	11	12.64	6	6.90
Do you have sufficient training in ICT usage in teaching of geography?	6	6.90	52	59.80	11	12.64	8	9.20	10	11,50
Do you have difficulties in ICT usage?	6	6.90	11	12.64	10	11.50	51	58.62	9	10.34
Have you adapted to the new environment of using ICT in teaching of geography?	11	12.64	52	59.80	7	8.05	9	10.34	8	9.20
Do all learners comfortably use ICT gadgets in teaching geography?	5	5.75	14	16.10	12	13.80	46	52.90	10	11.50
Do the gadgets used in ICT in the teaching of geography comfortable?	10	11.50	49	56.32	8	9.20	10	11.50	9	10.34
Do all teachers in your department use ICT gadgets in teaching of geography?	9	10.34	50	57.50	7	8.05	11	12.64	10	11.50
Are you allowed to make any improvement on the gadget used?	11	12.64	41	47.13	10	11.50	12	13.80	13	14.94
Is the school management ready to assist in the ICT implementation in teaching of geography in your school?	11	12.64	51	58.62	5	5.75	10	11.50	2	2.30
Is there any challenge when using ICT in teaching?	7	8.05	11	12.64	10	11.50	50	57.47	9	10.34
In your school is there a conducive environment of usage of ICT in teaching of geography?	10	11.50	42	48.28	15	17.24	13	14.94	7	8.05
Is the usage of ICT in teaching of geography a success in your department?	3	3.45	16	18.40	11	12.64	46	52.87	11	12.64
Is the use of ICT learning a waste of time in your department?	50	57.47	12	13.80	14	16.10	6	6.90	5	5.75
Is the usage of ICT in learning waste a lot of your time?	12	13.80	30	34.50	21	24.14		17.24	8	9.195
Is ICT greatly enhanced your skills in teaching?	13	14.94	10	11.50	10	11.50	15	48.28	12	13.80
Can all departments embrace ICT usage in teaching their subjects?	11	12.64	14	16.10	12	13.80	42	45.60	10	11.50

Source; Field Data 2023

Table 1 shows that 10(11.50%) of the respondents strongly disagreed with the statement that the teachers who teach geography have sufficient knowledge in ICT usage, 42 (48.30%) of the respondents disagreed that the teachers of geography have sufficient knowledge in ICT usage when giving instructions in class, 12(13.80%) of respondents were neutral on the sufficient knowledge of geography teachers in usage of ICT,16((18.40%) of the respondents agreed with the statement that most teachers have sufficient knowledge in ICT usage when teaching geography, while 7(8.05%) of respondents strongly agreed with the statement that the teachers of geography have sufficient knowledge in ICT usage when teaching in class. Sairi Jyti and Kaur (2017) indicated that teachers work better when they have good knowledge of ICT.

The findings showed that the majority (48.30 %) of the respondents reported that they strongly disagreed with the statement that the teachers who teach geography do not have sufficient knowledge in ICT usage when teaching geography in their respective schools in Nyamira county .This was attributed to the limited chances of teachers attaining training in ICT usage while in college (pre-service), in adequacy of attendance to workshops and capacity building seminars. This is in support of the findings that were put forward by Apple, Dadina, Dwyer, Hampton, Kitzie, Mafiri, Moore & Teodoro, (2014) confirming that proper training should be given to teachers during Inservice course.

The second statement, according to table 1, shows how comfortable teachers are in using ICT in teaching. Which

shows 7(8.05%) of the respondents strongly disagreeing with the statement that teachers are not comfortable in using ICT for teaching geography, 54(62.10%) of the respondents disagreed with the statement that the teachers teaching geography are not comfortable with usage of ICT when giving instructions, 9(10.34%) of the respondents were neutral on the statement,11(12.64%) of the respondents agreed that teachers who use ICT in teaching are not comfortable due to fear of using them while teaching, while 6(6.90%) of the respondents strongly agreed that the usage of ICT in teaching and learning is not comfortably used by the teachers in class while giving instruction. In the findings of these statements majority of the respondents were 62.10% while 6.90% were the minority. In conclusion, most respondents disagreed with the statement on teachers' usage of ICT in teaching. This, as Chirwa and Mubita, (2021), suggest, teachers may not be conversant with the use of educational technologies.

The table shows that 6.(6.90%) of the respondents do not strongly agree on the statement that the teachers have sufficient training in ICT usage in teaching and learning of geography, 52(59.80%) of the respondents disagreed with the statement, 11(12.64%) of the respondents were neutral they neither agreed nor disagreed with the statement ,8(9.20%) of the respondents agreed that the teachers who teach geography do not have sufficient training in teaching using ICT, while 10(11.50%) of the respondents strongly agreed that the teachers who handle geography in class when giving instructions have positive results, .The findings indicated that the majority of the respondents, 59.80%, agreed that the teachers lacked sufficient training in ICT usage in classroom instructions while teaching, 6.90% was the minority who strongly disagreed that the teachers do not have enough skills in handling of a geography lesson in class effectively Handling of ICT and its use may be a challenge to many teachers, whose exposure is limited (Hunter, 2015).

The fourth statement shows that 6(6.90%) of the respondents strongly disagreed with the statement, that do teachers have difficulties in usage of ICT during instructions of geography while teaching,11(12.64%)of the respondents disagreed with the statement,10(11.50%) of the respondents never decided or supported the statement 51(58.62%) of the respondents agreed that most teachers have difficulties in using of ICT gadgets while teaching geography in class while 9(10.34%) of the respondents strongly agreed with the statement on difficulties of using ICT in teaching .In the findings the majority of respondents at 58.62% agreed with the statement that teachers have difficulties when teaching using ICT while the minority, 6.90% ,0f the respondents strongly disagreed that teachers do not have any difficulties while using ICT in teaching of geography in

class. These sentiments are expressed by (Kim, 2020) who opine that as teachers get used to using ICT in the class, their teaching capacity will increase.

The fifth statement according to the findings shows that 11(12.64%)of the respondents strongly disagreed on the statement that the teachers adapted to the new environment of using ICT in teaching geography .52(59.80%) of the respondents disagreed that teachers have not adapted to the new environment of using ICT in instruction,7(8.05%) of the respondents were neutral on the statement they neither supported any side of the statement ,9(10.34%) of the respondents agreed with the statement of the adaptation of teachers to environmental change in use of ICT when giving instruction, while 8(9.20%) of respondents strongly agreed that teachers have adapted to the new environment when using ICT in teaching of geography. In Conclusion, the majority of respondents at 59.80% disagreed that teachers have not adapted to the new environment as regards to ICT usage while 9.29% of the respondents were the minority on the statement. In most cases teachers take a long time to adapt to the new environment in ICT usage because some of them fear they may be replaced by machines in teaching

The sixth statement according to table 1 it shows that 5(5.75%) of respondents strongly disagreed with the statement that all learners comfortably use ICT gadgets in teaching of geography,14(16.10%) of respondents disagreed with the statement on the usage of ICT with learners, 12(13.80%) of the respondents remaining neutral on the statement they neither supported nor agreed with the statement, 46(52.90%) of the respondents agreed that some students can comfortably use ICT gadgets in teaching of geography because they are exposed to their usage as they go for Holiday they take most of their time in cyber cafes training on the use of computers ,while 10(11.50%) of the respondents strongly agreed that learners have more knowledge on ICT usage as compared with some teachers and they can use it comfortably when need arises in class hence making some teachers to fear them .According to the findings the majority of respondents on the statement were at (52.90%) while the minority were at 5.75%,on the statement according to the study the learners of geography are more skilled in ICT usage than their teachers because they are ready to learn while on holiday they try to utilize their time in the cyber cafes where they got more knowledge in ICT usage Chege (2014) observes that cyber cafes have been instrumental in assisting teachers and students learn how to use ICT in teaching and learning processes.

According to the seventh statement on the table the following findings indicated that 10(11.50%) of the respondents strongly disagreed with the statement that do the gadgets used in ICT in teaching of geography

comfortable 49(56.32%) of the respondents disagreed that the gadgets used in ICT in teaching of geography is comfortable,8(9.20%) of respondents were neutral on the statement,10(11.50%) of the respondents agreed that the statement was true while 9(10.34%) of the respondents strongly agreed that the gadgets used by teachers in class while giving instruction in geography are comfortable. The findings show that the majority of the respondents at 56.32% disagreed with the statement while 9.20% of the respondents were the minority. In most cases the usage of the ICT gadgets in class for instruction in any subject is supposed to be motivated by the teachers concerned as expressed by Haddon (2018), who argues that there is need for teachers to show interest in teaching devises so that students can easily emulate.

In the eight statement from the table above 4.1on the Likert scale it is indicated that 9(10.34%) of respondents strongly disagreed with the statement that do all teachers in your department use ICT gadgets in teaching of geography ,50(57.50%) of the respondents disagreed on the statement, 7(8.05%) of the respondents were neutral on the statement ,11(12.64%) of the respondents strongly agreed with the statement while 10(11.50%) of the respondents agreed that the statement is true .According to the findings the majority of respondents were at 57.50% while the minority was at 8.05%

According to the statement on table 1 on the Likert scale on teachers attitude to usage of ICT it shows that 11(12.64%) of the respondents strongly disagreed on whether the teachers are allowed to make any improvement on the gadgets used ,41(47.13%) of the respondents disagreed that the teachers are not given any permission to do any improvement on the ICT gadgets at their disposal in their schools,10(11.50%) of the respondents were neutral to the statement ,12(13.80%) of the respondents agreed that the teachers were allowed to make improvement on the ICT gadgets in their school ICT center while 13(14.94%) of the respondents strongly agreed that the teachers were allowed to improve the gadgets at their disposal . According to the statement the majority of respondents, 47.13%, disagreed with the statement while the minority was at 11.50% were neutral of the statement. In this regard it indicates that teachers in all ways are not supposed to make any adjustment to the gadgets they only use them the way they are in their ICT centers.

According to the findings on the tenth statement,11(12.64%) of the respondents strongly disagreed with the statement that the school management is ready to assist in the ICT implementation in teaching of geography in their schools,59(67.80%) of the respondents disagreed with the statement ,5(5.75%) were neutral to the statement that was given by the respondents,10(11.50%) of the respondents agreed with the statement on the school management and its involvement on the implementation of ICT usage in schools while 2(2.30%) of the respondents strongly agreed with the statement that the schools management is involved in the implementation of ICT in teaching of geography in our learning institutions in Nyamira County Kenya. The findings shows that 68.80% of the respondents on the statement were the majority while 2.30% of the respondents were the minority, most schools in the county do not ready support the implementation of ICT usage due to inadequate financial assistance hence the ICT gadgets are very expensive to buy, store and maintain while in the school ICT center.

In the eleventh statement the following findings were made from the statement 7(8.05%) of the respondents strongly disagreed with the statement that there are challenges when using ICT in teaching of geography ,11(12.64%) of the respondents disagreed that there were no challenges in any school for usage of ICT in teaching and learning of geography,10(11.50%) of the respondents never took sides on the statement they remained neutral on the statement on table 1 above ,50(57.47%) of the respondents agreed that the statement on challenges that face the usage of ICT in teaching and learning of geography in class when giving instructions while 9(10.34%) of respondents strongly agreed that the usage of ICT is faced with a lot of challenges in schools in Nyamira County during its time for implementation . According to the study majority of respondents were at 57.47% agreed with the statement while the minority was at 8.05% who disagreed with the statement.

In the twelve statement the study findings showed that 10(11.51%) of the respondents strongly disagreed with the statement that there is a conducive environment of usage of ICT in teaching of geography ,42(48.28%) of the respondents disagreed with the statement ,15(17.24%) of the respondents were neutral on the statement , 13(14.94%) of the respondents agreed that the statement was true while 7(8.05%) of the respondents strongly agreed that the statement was true that schools have a conducive environment on the usage of ICT in teaching of geography. According to the above findings 48.28% are the majority of the respondents while 8.05% of the respondents are the minority. The schools should have a good and conducive environment where they can implement and achieve a good progress on the ICT usage in teaching process because its cumbersome. Apple et al, (2014) suggest that teachers have to be patient with the learning of technology, but they also have to get ready to learn as they do the interaction with it.

In the thirteen statement the findings shows that 3(3.45%) of the respondents strongly disagreed with the statement

that the usage of ICT in teaching of geography is a success in your department, 16(18.40%) of the respondents also disagreed with the statement on the success of teaching in geography department when ICT is used for instruction , 11(12.64%) of respondents on the statement were neutral they never supported any side ,46(52.87%) of the respondents agreed that the use of ICT in geography department is a success because where it has been applied successfully it has greatly improved performance in the subject while 11(12.64%) of the respondents strongly agreed that the teaching of geography using ICT is a success in the department. According to the study the majority of respondents at 52.87% agreed that the usage of ICT in geography department can make it a success while 3.45% were the minority who strongly disagreed with the statement on the improvement and success of geography department in their schools

According to the fourteen statement the following findings of the study it shows that 50(57.47%) of the respondents strongly agreed that the usage of ICT in teaching of geography is a waste of time ,12(13.80%),of the respondents disagreed that the usage of ICT in teaching is a waste of time ,14(16.10%) of the respondents were neutral on the statement on the wastage of time while using ICT ,6(6.90%) of the respondents agreed with the statement that ICT is a waste of time while 5(5.75%) of the respondents strongly agreed that the usage of ICT in teaching of geography is a waste of time .According to the findings majority of respondents were at 57.47% strongly disagreed that the usage of ICT is not a waste of time in teaching geography while 5.75% of the respondents were the minority who stated that it is a waste of time to use ICT in teaching of geography.

On the fifteen statement according to the study the findings shows that 12(13.80%) of the respondents strongly disagreed that use of ICT waste a lot of time when being used to give instructions,30(34.50%) of the respondents disagreed with the statement, 21(24.14%) of the statement were neutral on the statement showing there are not decided on the usage,15(17.24%)of the respondents agreed that the usage of ICT waste a lot of time during learning of geography while 8(9.20%) of the respondents strongly agreed on the statement that a lot of time can be wasted during teaching by use of ICT gadgets. The findings show that the majority of respondents34.50%, disagreed with the statement while 9.20% of the respondents strongly agreed that it's a waste of time when used to give instruction in class while teaching geography.

According to the sixteen statement on the Likert scale the findings of the study showed that 13(14.94%) of the respondents strongly disagreed that the usage of ICT

greatly enhances your skills in teaching geography, 10(11.50%) of the respondents disagreed with the statement on enhancing skills by use of ICT in teaching of geography, 10(11.50%) of the respondents were neutral on the statement ,42(48.28%) of respondents agreed that the usage of ICT in teaching greatly enhances a teachers skills in handling a subject in in class while 12(13.80%) of respondents strongly agreed that the statement was correct on enhancement of a teachers skills when ICT is in collaborated during instruction .The study findings shows that the majority of the respondents were 48.28% who were in agreement with the statement while the minority of respondents were at 11.50% who stated that they never agreed with the statement. In essence, when ICT is being used in teaching most teachers improve their skills of teaching in class and can sincerely improve performance of geography as a subject.

The final statement on the Likert scale ,according to the findings the study shows that 11(12.64%) of the respondents strongly disagreed with the statement that can all departments embrace ICT usage in teaching their subjects,14(16.10%) of the respondents shows that the statement was disagreed by the respondents,12(13.80%) of the respondents were neutral never supported the statement on ICT usage ,40(45.60%) of the respondents agreed that the usage of ICT in teaching can be embraced to all subjects taught in a school for better and improved performance while 10(11.50%) of the respondents strongly agreed with the statement on the transfer of ICT usage to all department in schools .From the above indicator the study shows that the majority of respondents at 45.60% agreed with the statement while the minority of 11.50% of the respondents also agreed with the statement on the usage of ICT to all departments in the schools for better results.

When dealing with the county and sub- county quality and standards officer in their interviewing schedule on item four where the respondents were asked to indicate the role they play in the ministry as regards to ICT usage in the schools they gave. The following findings that their major work was to give guidance to the principals and teachers on how to improve the educational standards of the county where they encouraged the usage of ICT in instruction that enhances the process of instruction of geography to make it learner centered in most schools.

Also, in item seven they were asked the problems they experienced by the schools under their jurisdiction on ICT sourcing, the respondents stated that schools have challenges of costs of gadgets, inadequate training of ICT personnel, cost of maintaining of ICT gadgets, lack of enough infrastructure and inadequate funds from free secondary education allocated for the purchase of ICT gadgets. Institutions of learning should provide sufficient

resources to buy different educational technologies (Sairi, Jyti and Kaur, 2017).

In the questionnaire of geography teachers item nine specifically wanted to know whether there is any experience in the usage of ICT by geography teachers when giving instruction ,the following findings were revealed that 10(17.54%) of respondents said yes while 77(82.46%) of the respondents stated No so in conclusion the findings showed that 82.46% were the majority who stated No and 17.54% of the respondents were the minority showing that most of the teachers do not have enough knowledge in the usage of ICT in giving instructions in geography because they never underwent through pre-service training while in college ,they have never had an ICT capacity building workshop or they have never been taken for an in –service course as regards to ICT usage in learning and teaching of standards of geography in their classrooms.

On item eleven on the teachers of geography questionnaire the respondents gave the following responses as pertains how often ICT is used in learning and teaching. The following findings were indicated 2(2.30%) of the respondents showed that the usage of ICT gadgets in teaching of geography in class, some of the respondents occasionally use of ICT in teaching showed that 5(5.75%) of the respondents said the use of ICT in instruction is occasional, the use of ICT in schools was rarely done as shown by the respondents at 15(17.24%), the next group of respondents was at 50(57.50%) which showed that the gadgets are hardly used in class while giving instructions, while 17(19.54%) of the respondents indicated that ICT was never used during instruction in geography in their class. The findings of the item showed that 57.50% was the majority who stated that ICT gadgets are hardly used in class during instruction of geography while 2.30% of the respondents showed that the usage of ICT in instruction is daily used in class. In conclusion, ICT is hardly used in class by teachers when teaching geography (Apple et al., 2014). In item twelve in the geography students' questionnaire the following summary of the table 2 is given below on the usage of ICT and its application.

Table 2: Usage of ICT and its application

Application	Duration							
	Daily		Weekly		Monthly		Never	
	f	%	F	%	f	%	f	%
Internet	2	2.30	5	5.74	15	17.24	65	74.72
Projector	2	2.30	6	6.90	12	13.80	77	88.51
Slides	3	3.45	7	8.05	12	13.80	65	74.72
Presentation software	3	3.45	4	4.60	13	14.95	65	74.72

Source; Field Data 2023

Table 2 above shows that 2(2.30%) of the respondents agreed that the application of ICT in teaching and learning of geography using internet daily,5(5.74%) of the respondents shows that the application of ICT in teaching and learning of geography is done weekly. 15(17.24%) of the respondents agreed that the usage of ICT monthly in teaching and learning of geography is applied while 65(74.72%) of the respondents stated that the usage of ICT in teaching and learning of geography has never been applied in their classroom. The findings indicate that in these items that 74.72% is the majority of the respondents who disagreed that ICT is never used in a geography class while teaching, while 2.30% of the respondents were the minority who stated that the usage of ICT is used daily in classroom during instruction of geography .

The second application according to the respondents is that the findings showed that 2(2.30%) of the respondents agreed that projectors are used in class while teaching geography daily, 6(6.90%) of the respondents indicated that projectors are used in teaching and learning of geography weekly in class, 12(13.80%) of the respondents agreed that the use of projectors in teaching is done monthly while 77(88.51%) of the respondents stated that the use of projectors in teaching and learning in class instruction is never done. In conclusion the majority of respondents, 88.51%, disagreed with the statement that projectors are used in class during instructions of geography, while 2.30% of the respondents were the minority who agreed with the statement that projectors are used daily in class in giving instructions in geography

while teaching.

The application of slides when teaching geography had the following responses as their findings 3(3.45%) of the respondents agreed that slides are used in class while teaching of geography daily,7(8.05%) of the respondents showed that the use of slides in class is done weekly,12(13.80%) of the respondents indicated that the use of slides while teaching geography is done monthly in class ,65(74.72%) of the respondents stated that slides were never used in teaching of geography . In conclusion, the majority of respondents at 74.72% never agreed with the statement that slides are used daily in class while teaching geography in class, the minority of respondents at 3.45% agreed that the usage of slides is done, so the findings indicate that most teachers do not use slides while teaching geography in class.

The use and presentation of software in teaching had the following findings 3(3.45%) of the respondents agreed that teaching geography is done by use of software daily,4(4.60%) of respondents showed that the usage of software in class is done weekly ,13(14.95%) of respondents showed that the usage that the usage of software in class is done monthly while 65(74.72%) of the respondents stated that software is never used in class when teaching geography. Our findings indicate that the majority of respondents, at 74.72%, disagreed with the usage of software presentation never used in class while 3.45% of the respondents agreed that software presentation is done daily in class.

In the usage of ICT in teaching and learning of geography according to the interviewing schedules of standards quality and assurance officers (SQUAZO) they respondent that when teaching by use of ICT there are several benefits they are accrued from its usage while giving instruction ,ICT usage makes learners have a good attitude to the subject because it enhances learning to be learner centered, according to SQUAZO ICT makes learners improve their performance and they can attain better skills and even upload summarized notes from internet for use and see the models of physical geography and how they work by use of ICT. In the other statement they respondent on the future of ICT in teaching and learning by giving their suggestions ,they suggested that more ICT gadgets to be bought to the schools, more ICT infrastructure to be constructed in schools so that can be used in the teaching and learning of geography and other subjects also the ICT rooms can be used to store the already purchased subjects ,more ICT personnel to be trained to assist in preparation of ICT lessons in schools and they advise administrators on the importance of integrating ICT in teaching and learning in their schools so that the performance of all subjects in their schools.

In the findings on the experience of teachers usage of ICT in teaching and learning of geography the study indicated that most teachers 72(82.76%) of the respondents disagreed that teachers do not have enough experience in usage of ICT in teaching while 15(17.24%) of respondents agreed that teachers have enough experience in the usage of ICT in teaching ,in these the findings was concluded that majority of teachers do not have enough experience in the usage of ICT in teaching ,second the usage of ICT by teaching while teaching in class has been shown as below by the respondents ,2(2.30%) of the respondents showed that usage of ICT in class by teachers was used daily 5(5.75%) of the respondents showed that the usage of ICT while teaching is done occasionally ,15(17.24%) of the respondents shows that teachers use ICT gadgets to teach in class rarely ,60(68.96%) of respondents hardly teachers use ICT gadgets in class while teaching ,while 5(5.75%) of the respondents never uses ICT in teaching while in class . In conclusion the usage of ICT in teaching of geography according to the teachers of geography is that 68.96% hardly uses ICT in class, these is supported by in his book.

Thirdly the schools will do a lot of research and budgeting for ICT gadgets for learners can fully exploit their potentials in ICT usage in the learning process in any learning institutions in our county and Kenya at large.

In response to the students of geography questionnaire the learners gave the following findings, 3(o.86%) of respondents showed that teachers never used ICT in teaching and learning of geography on daily basis, 5(1.44%) of the learners stated that teachers use ICT in teaching weekly, 10(2.87%) of respondents stated that their teachers use ICT once a month in class while 330(94.83%) of respondents never uses ICT in class while teaching. In conclusion from the above findings, learners were never instructed by use of ICT by their teachers as majority of respondents stated while the minority of respondents agreed that their teachers use ICT daily in class at 0.86 % when giving instructions in teaching and learning of geography. Some teachers, even when they have the technology around, are reluctant to use it. (Sairi, Jyti and Kaur, 2017).

The budgeting of our public secondary schools is neither realistic nor non-realistic because the schools budgeting is more based on the priorities of the schools. In conclusion is that most of our schools are not ready to budget for ICT usage in our schools due to the principal's priorities.

5. Conclusion and Recommendations

5.1 Conclusion

The following conclusions were drawn from the findings

in this study:

1. The researcher found out that teacher attitude towards the use of ICT gadgets in teaching of geography in relation to learners' academic achievement has appositive and statistical effects on teaching and learning of geography.
2. This gives an implication that teacher' attitudes towards ICT usage when well-articulated can improve and work positively in our public secondary schools in Nyamira County –Kenya.
3. The budgeting of our public secondary schools on ICT purchasing is neither realistic nor non-realistic because the school budgeting is more based on priorities of the school principal and Board of management are not ready to budget for ICT usage.

5.2 Recommendations

The study made the following recommendations.

1. There is need for the school management to consistently support geography teachers to in service courses on ICT in learning and teaching and sponsor their teachers to seminars and ICT workshops for capacity building in order to get good results in the subject.
2. There is a need to train ICT personnel in our schools so that they can assist in preparation and innovation of ICT lessons in classroom for better understanding of geography.
3. There is need for the management to include ICT in geography teaching and learning to improve its performance and increase its enrolment at KCSE level.

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