

Students' Attitude Towards' Use of Information and Communication Technology (ICT) in Teaching and Learning in Public Secondary Schools: A Case of Kieni East Subcounty, Nyeri County-Kenya

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Abstract

The use of ICT creates a powerful learning environment and it transforms the learning and teaching process in which students deal with knowledge in an active, self-directed and constructive way (Volman & Van Eck, 2001). This study was conducted to investigate students' attitude towards use of Information Communication and Technology (ICT) in teaching and learning in public secondary schools in Kieni East Subcounty, Nyeri County, Kenya. The objectives of the study are to (i) establish E-readiness in teaching and learning (ii) explore attainment of computer skills and (iii) assess the extent to which students access ICTs in teaching and learning. The sample comprised of 14 female students and 28 male students. Questionnaires were administered to students. Findings indicated that 67% and 81% of the female and male students respectively had no access to internet. The study revealed that 80% of the female students can open and create a document while 57.1% of the male students preferred computer studies to other subjects. The level of students' attitude towards ICT in teaching and learning was positive despite the challenges in its integration in public secondary schools in Kieni-East Subcounty. The study recommends that schools buy enough computers and install network for use by the students.

Keywords: *Information Communication and Technology, powerful learning environment, teaching and learning, access to internet*

1.1 Background to the Study

The aim of education is for learners to invest in acquiring knowledge and skills that will assist them in improving their life prospects, as well as equip them to be able to institute expected reforms in society for support of humanity by contributing towards national growth and development for the good of society. Therefore, the pursuit of knowledge and skills must better serve individual growth and sustainable development not only of an individual but also the community one belongs to and society at large. Apparently, stakeholders involved in knowledge delivery and acquisition have a responsibility to ensure situations that keep abreast of knowledge development, research and training that guarantee modern skills in the labor market for purposive growth and development of individuals and society. Institutions of higher learning and training have a task of preparing teacher trainees with meaningful knowledge and skills, which they can use when imparting information to the

learners for sustainable growth and development. Education policymakers have been formalising ICT policies as part of educational renewal and reform for almost four decades. At the international level, policy for integrating ICT for development was first formulated in the Millennium Development Goals (MDGs) Target 8.F, which states that “in cooperation with the private sector, make available the benefits of new technologies, especially information and communications” (United Nations, 2000; 2012). Moreover, while not mentioned explicitly in the Education for All goals, it is arguable that ICT plays a pivotal role in achieving these goals, including broadening access, eliminating exclusion, and improving quality (UNESCO, 2000).

When used appropriately, ICT can help to strengthen the importance of education to increasingly networked society, raising quality of education by making learning and teaching an active process connected to real life (Zaman, Shamim & Clement, 2011). Further studies shows that the adoption and use of ICT in schools can promote collaborative, active and lifelong learning, increase students’ motivation, offer better access to information and shared working resources, deepen understanding, help student think and communicate creatively (Khan, Hasan & Clement, 2012). In Kenya, the government recognizes the positive effect of ICT in making the country a middle level economy has is envisaged in Kenya vision 2030. Effort to implement ICT in schools was first initiated by publishing sessional paper No.1 of 2005 where ICT was given prominence. The idea was to equip public secondary schools with ICT infrastructure and integrate it in existing school curriculum in order to meet the challenges of information society. The publication stated that in every school; teacher, student and communities around it should participate in acquiring ICT skills desirable to benefit from knowledge-based economy by year 2015. While many countries have reported over 41% adoption of ICT in classroom in public secondary schools, the proportion remains considerably low in Kenya.

Thuranira and Ndirangu(2014) carried out a study in Kieni East Sub and found that 72.1% of the students had an encounter with computers at home, 18.6% at school and 9.3% in the primary schools. The study realized that majority (97.7%) of the students can open and shut the computers Regarding the use email frequently 33.3% of the students used it very much, 38.1% used it much while 28.6% never used it at all. Regarding the social network 97.4% of the students were on the face book and 2.6% on the twitter. The study showed that 95.3% of the students browse the internet using the computer. The study looked at teachers’ preparedness but did not look at the gender differences on students’ attitude towards ICT. It is for this reason therefore that the researcher was prompted to carry out a research on students’ attitude towards’ use of information and communication technology in teaching and learning in public secondary schools in Kieni East Sub County, Nyeri County-Kenya.

1.2 Statement of the Problem

Learning and teaching in schools is to be transformed to embrace ICT skills appropriate for twenty first century (GOK, 2005). Despite its importance and strategies developed by government to implement ICT in schools, research conducted in many schools has established that most of them are not effectively adopting and using ICT to support learning, teaching and management as intended (Manduku, Kosgey, & Sang, 2012). Laaria, (2013) revealed that despite efforts made by various stakeholders and importance of the ICT in education sector, the National ICT policy on education of 2006 has not been effectively implemented as was intended. While it is shown that students have a positive attitude towards ICT in education and that they are more knowledgeable in the skills as compared to their professional teachers, it is not clear in what specific areas the girls and the boys are highly involved in. If students’ attitude towards’ use of information and communication technology in teaching and learning in public secondary schools is not addressed accordingly, opportunities that would have otherwise been available for both boys and girls to advance academically will be lost. This will in the long run

make it difficult to reduce gender disparities in Kenya. It is for this reason that the researcher was prompted to establish students' attitude towards' use of information and communication technology in teaching and learning in public secondary schools in Kieni East Sub County, Nyeri County-Kenya.

1.3 Purpose of the Study

The purpose of the study was to establish students' attitude towards' use of Information and Communication Technology in teaching and learning in public secondary schools in Kieni East Sub County, Nyeri County-Kenya.

1.4 Objectives of the Study

The objectives of this study were to:

- i) Establish e-readiness in teaching and learning
- ii) Explore attainment of computer skills and
- iii) Assess the extent to which students access ICTs in teaching and learning.

1.5 Justification of the study

The findings of the study may be useful in: Establishing e-readiness in teaching and learning, Exploring attainment of computer skills and assessing the extent to which students access ICTs.

In particular the key beneficiaries of the study are the children in schools who may be sensitized to have a better understanding of the impact of ICT in their academic work. The findings and recommendations of this study are expected to provide a process or framework which should assist school managers in making decisions on how to adopt and use ICT in schools. The planners and policy makers are expected to use the findings of this study as a base for revising the current ICT policy in order to overcome the challenges hindering smooth adoption and use of ICT in schools in Kenya. As a result all children will be in a position to compete favourably as they undertake courses in higher institutions of learning and career choices later in life. Other beneficiaries will include the researchers, schools, various ministries, the community and Kenya Government as a whole. The finding of the study will assist other researchers in other universities as they further their research.

2.0 Methodology

2.1 Research Design

The research design adopted in this study was descriptive survey. This method was relevant to the study because it involved frequency of answers to the same questions by different respondents. Both qualitative and quantitative techniques were used. This study sought to establish students' attitude towards' use of Information and Communication Technology in teaching and learning in public secondary schools. The researcher used questionnaires to collect data. By qualitative techniques, the researcher included open ended items where the respondents were given an opportunity to express their views. Data was categorized; themes established, coded and entered. By use of this design the researchers intended to report the status of students' attitude towards' use of Information and Communication Technology as it were.

2.2 Research Instruments

The research study used triangulation methodology in data collection. Questionnaires, document analysis and researcher's own observation were used. Questionnaires were administered to 28 male and 14 female sciences and mathematics teachers. Observations were made where information recorded were the researchers own observation, without interviewing the respondents. The information was related to what was happening during the material day of the study and was not related to the past behaviours or future intentions.

2.3 Data Collection Procedure

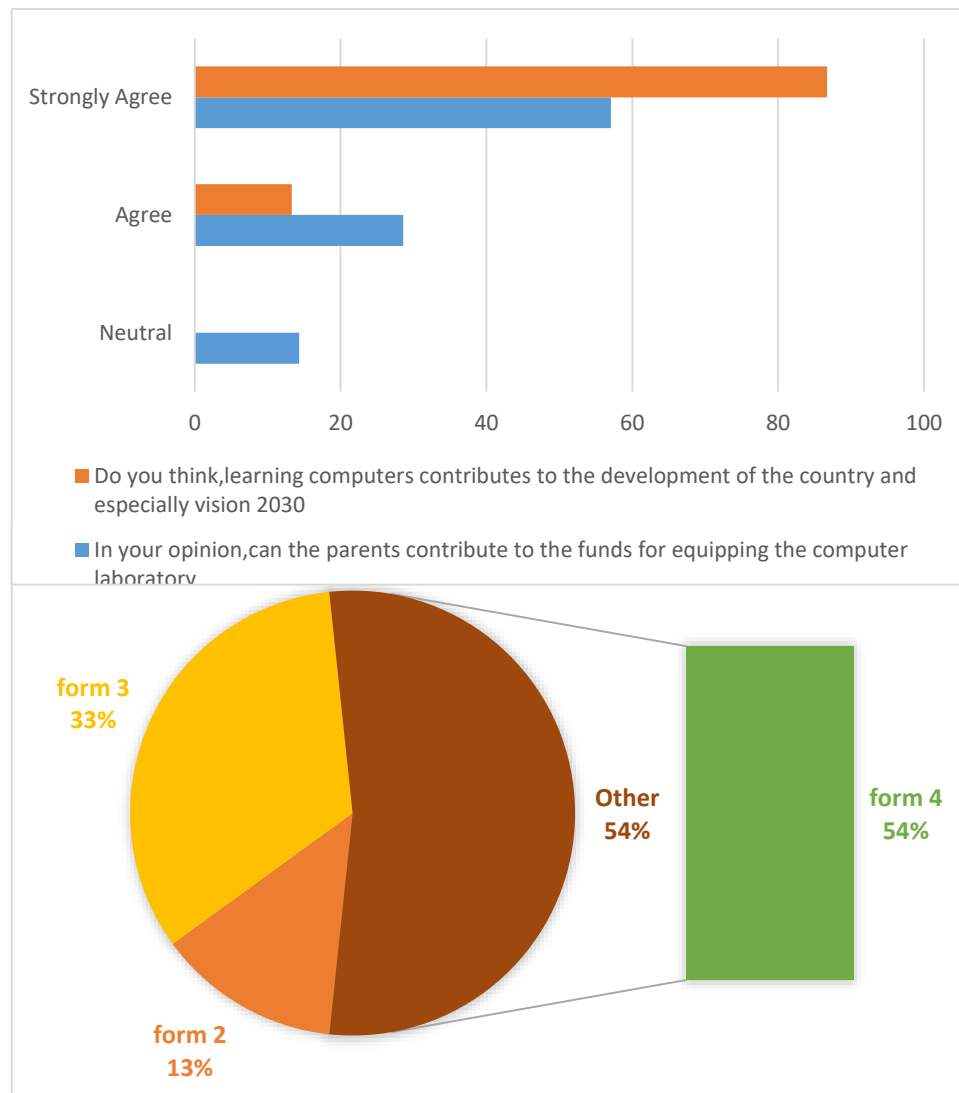
The study used primary data. Quantitative and qualitative methods were employed in data collection. Quantitative method has the advantage of getting responses of the same questions from a large number of people. Their responses can then be quantified and conclusions drawn from them. Qualitative method enables the researcher to collect data in the actual context in which the actual phenomenon occurs. Questionnaires were issued to the students and collected on the same day. Upon completing the exercise, the researcher filed the instruments. The researcher then processed the instruments for analysis by eliminating unusable data where the respondents gave the same data to two or more questions and ambiguous answers were interpreted.

2.4 Data Analysis

In this study qualitative data was derived from open-ended questions in the questionnaires and was meant to supplement quantitative data availed by the questionnaire. The researcher perused the collected data and identified information that was related to the research questions and objectives and came up with themes. Different cards were used to record different themes. Related topics to the research questions were categorized and a coding system developed based on collected data. The frequency with which an idea or description appeared was used to interpret the importance. To facilitate quantitative analysis, questionnaires were precoded. A code book was prepared to enable the data to be entered into the computer. For objective items data was first organized in terms of percentages according to the categories on the likert rating scale type responses. The data was tabulated on the basis of how many strongly agreed (5points), agreed (4points), neutral (3points), disagreed (2points) and strongly disagreed (1point) and presented as percentages of the total number of responses. The researcher allocated 1 to no and 2 to yes. Summated scales consisted of a number of statements which expressed either favourable or unfavourable attitude towards the given object to which the respondent was asked to react. The overall scores represented the respondent's position towards an issue. Missing data represented unanswered questions. The researcher used statistical techniques which included frequencies and percentages, cumulative frequency percentage and cumulative frequency, means and standard deviation and modal responses. The findings were graphically represented in pie charts, bar graphs, frequency polygons, cumulative frequency curves, line graphs, area and scatter for ease of interpretation.

2.5 Ethical Considerations

All the participants were briefed on the importance of the research and were requested to participate voluntarily. The researcher assured the study participants confidentiality that all the information given would be treated with strict confidence and only used for the purpose of this study. The participants were reminded not to write their names or the names of their schools on the questionnaires to ensure anonymity. All data was recorded and stored in paper and electronic form. The researcher acknowledged the work of other authors to avoid plagiarism and fraud.



3.0 Results And Discussions

3.1 Establishing E-Readiness in Teaching and Learning

3.1.1 Female Respondents' Responses

The study found that majority (53%), of the female respondents who participated in this study were in form four, 33% in form three while 13% in form two(Figure 1).

Figure 1: Female respondents

Students' opinion on parents contributing to the funds for equipping the computer laboratory was investigated. Data showed that 85.7% of the female students agreed while 14.3% were neutral.

All the students agreed that learning computers contributes to the development of the country and especially vision 2030(Figure 2).

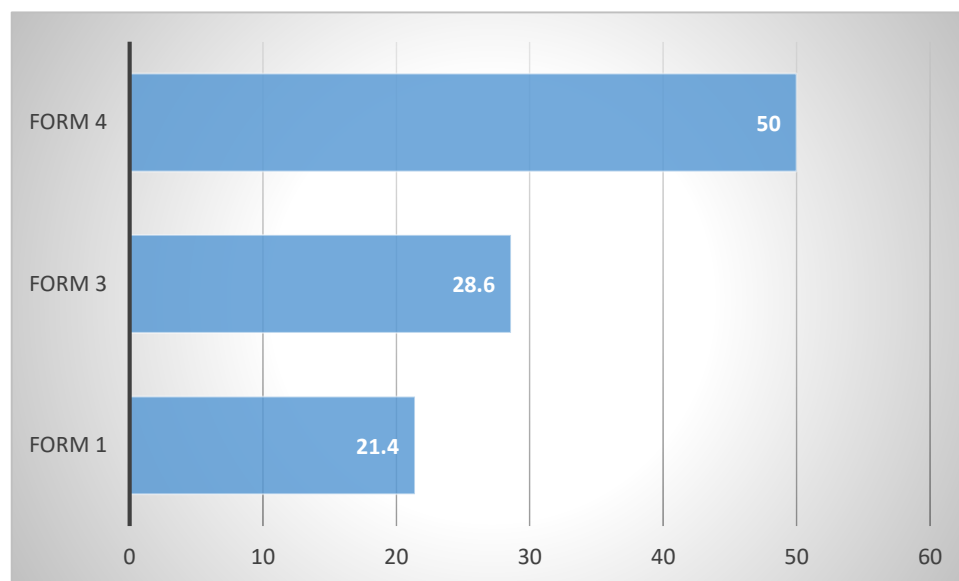
Figure 2: Female respondents' responses funding the computer laboratory and vision 2030

3.1.2 Male Respondents Responses

Figure 3 indicates the male respondents who participated in this study were in form four (50%), form three (28.6%) and form one (21.4%).

Figure 3: Male respondents

The study sought to establish the opinion of the male students as far as parents contribution to the funds for equipping the computer laboratory were concerned(Figure 4) .The responses showed that 57.2% agreed while 21.4% disagreed. Majority(92.8%) of the male students agreed that learning computers contributes to the development of the country and especially vision 2030.The results indicates that the students are highly



optimistic that ICT will result to the attainment of vision 2030.

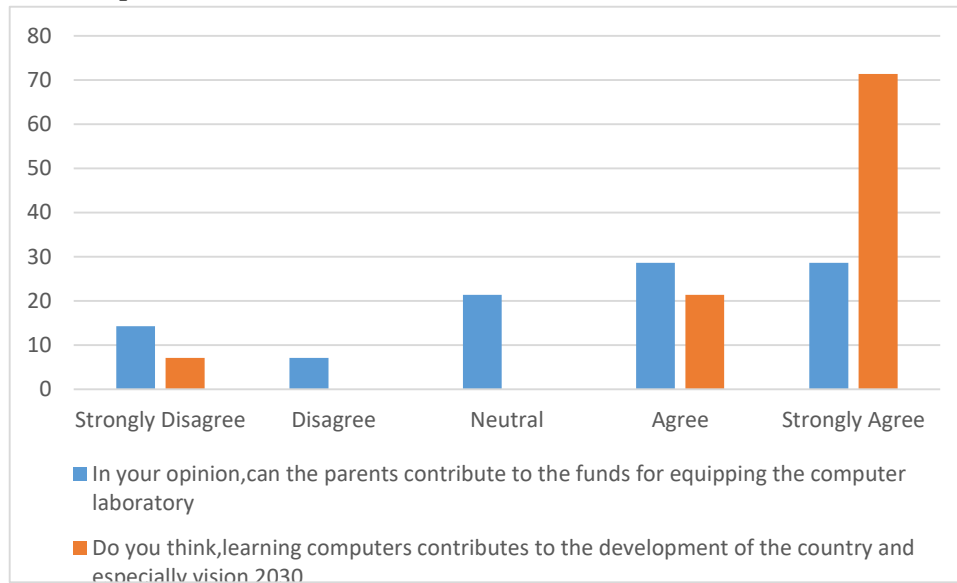


Figure 4: Male respondent's responses funding the computer laboratory and vision 2030

3.2 Explore Attainment of Computer Skills

3.2.1 Female Respondents' Responses

The study found that all the students would freely open and shut the computers and 93% could create a document and save in the computer (Figure 5).

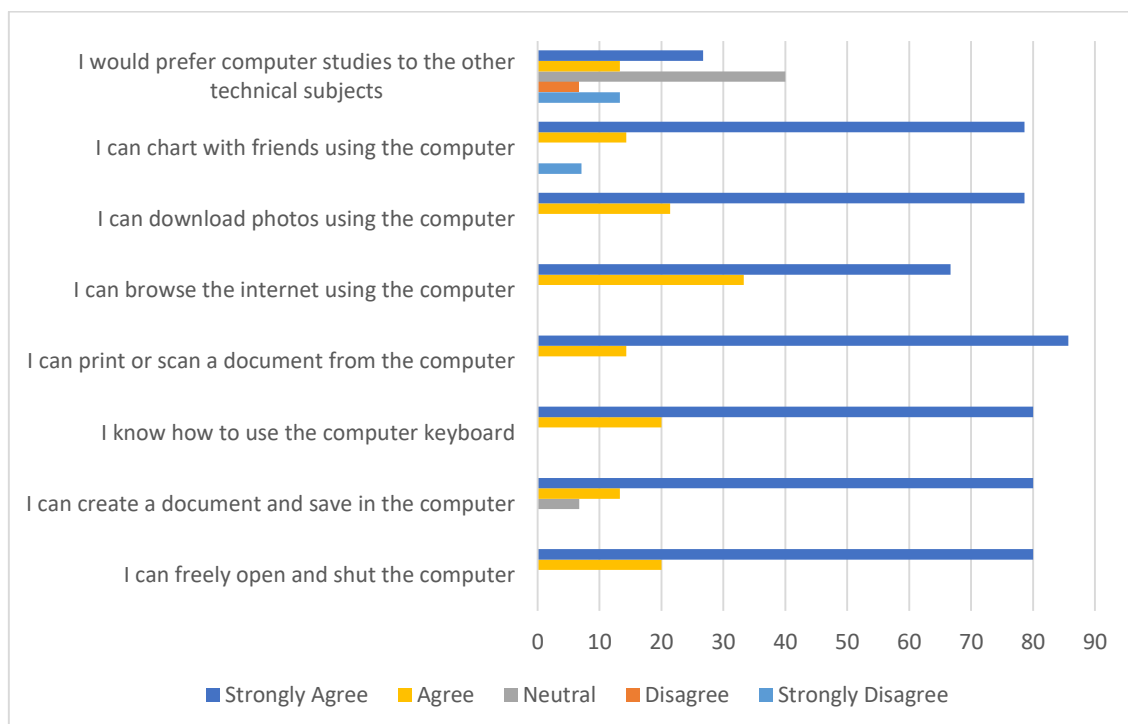


Figure 5: Responses of female respondents on attainment of computer skills

The study further showed that all the female students would use the computer keyboard while 93% would print and scan documents from a computer. Results indicated that all the students would browse the internet using the computer and 93.3% would download photos using the computers. Charting with friends using the computer indicated that 83% agreed while 7% strongly disagreed. The researcher wanted to know if the students preferred computer studies to other technical subjects. The responses were that 40% agreed while 20% disagreed. The study was set to investigate if the students used the email frequently. Results indicated that 47% used it very much while 33% did not use it at all. The study further showed that 86.7% of the female students used the social network (Figure 6).

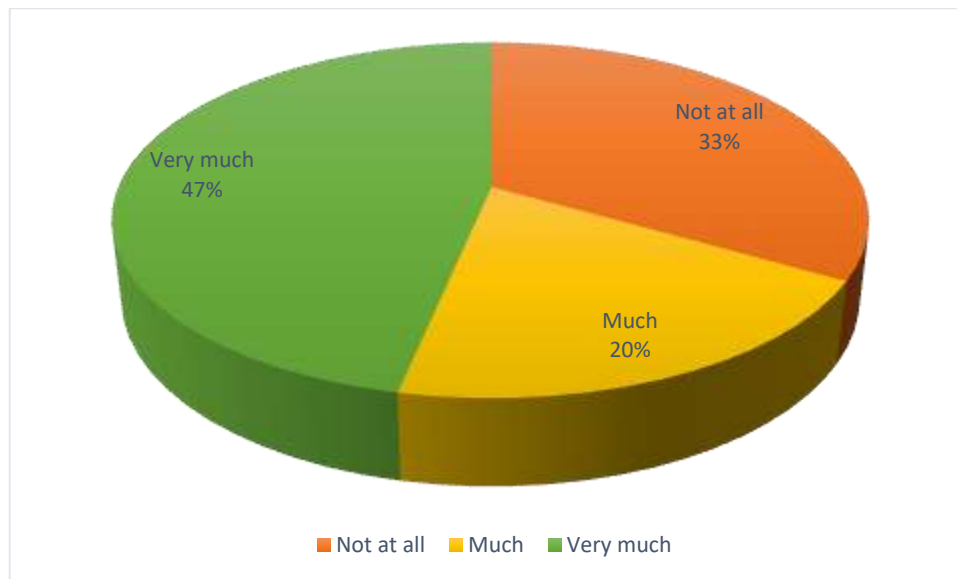


Figure 6: Responses of female respondents on Email

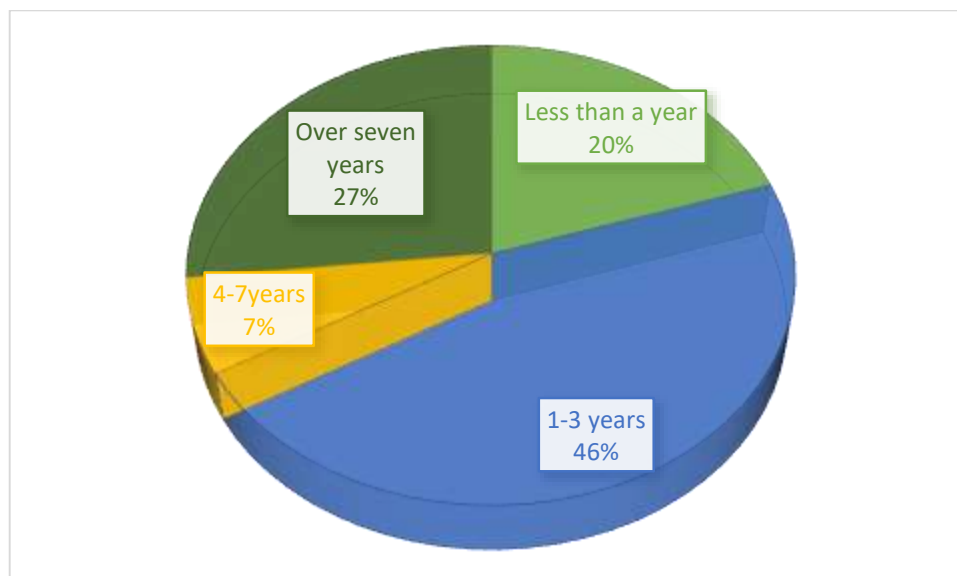


Figure 7: Responses on access to computers and other technologies by the female respondents

Regarding access to the computers and related technologies, then results indicated that 20% had it in less than an year, 47% in one to three years and 27% over seven years (Figure 7). When students were asked where they

first encountered with the computers, the findings showed that majority (66.7%) had it at home, 26.7% in secondary school while 6.7% in primary schools (Figure 8).

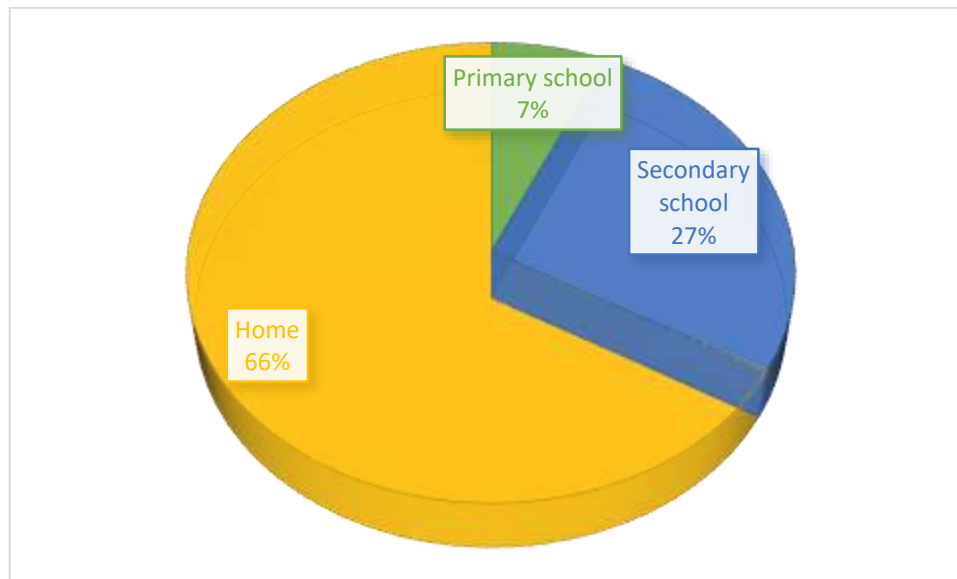


Figure 8 : Encounter with computers by female respondents

3.2.2 Male Respondents Responses

Data revealed that 96.4% of the students would freely open and shut the computers (Figure 9). Further 96.4% of the students agreed that they could create a document and save in the computer while 3.6% would not. Regarding the use of the computer key board, 96.4% agreed while 3.6% strongly disagreed. According to the study 92% of the male students can print and scan a document from the computer, 92.9% can browse the internet using the computer and 96.4% can download photos using the computer.

Regarding chatting with friends, the findings of the study indicated that 94.4% agreed while 3.6% disagreed. Majority (60.4%) agreed that they preferred computer studies to other technical subjects while 14.3% disagreed. According to the findings the learners have adequate skills which if well utilized will result to development of the individual, society and the nation in the long run. Results indicated that 12% of the male students used email very much while 56% used it much (Figure 10). The study found that 32% did not use it at all. The results showed that 85.7% of the students were on the social network. The study further sought to know for how long the male students had access to the computers and related technology usage. The findings indicated that 35.7% were in less than an year, 28.6% in one to three years, 14.3% in four to seven years and 21.4% in more than seven years (Figure 11). Further the researcher wanted to know where the students had the first encounter with computers. Figure 12 shows the findings of the study which indicated that the majority 75% had it at home, 21.4% in secondary school while 3.6% in primary school.

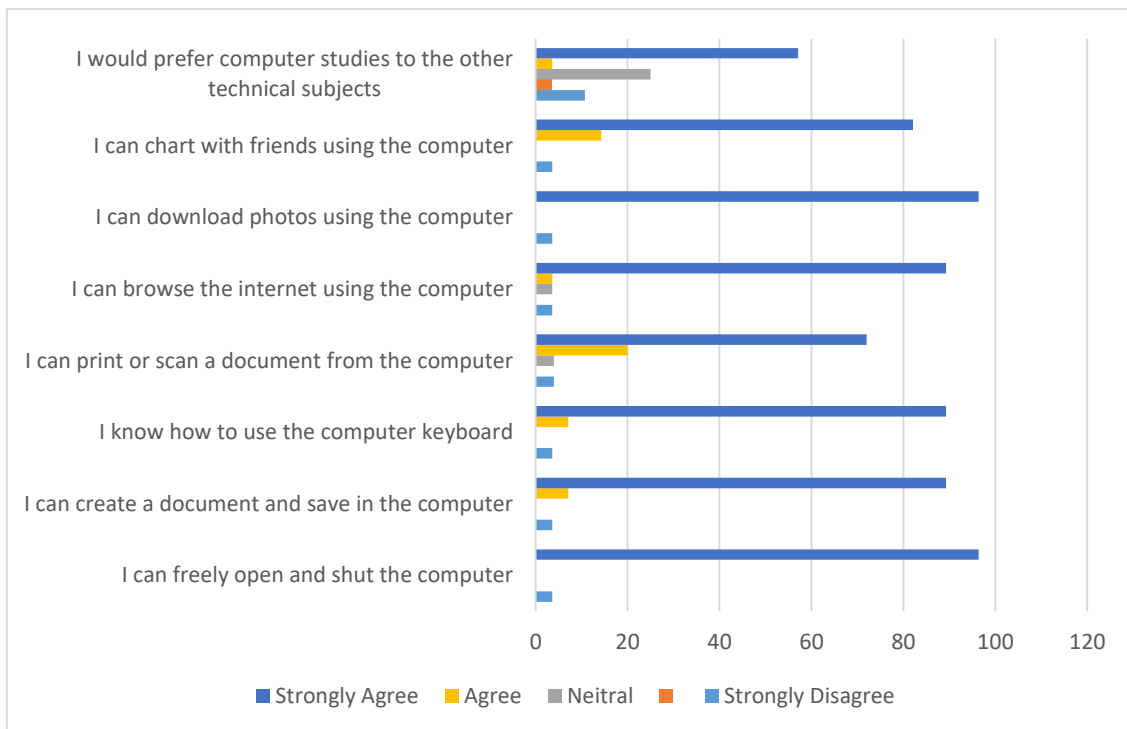


Figure 9:Attainment of computer skills by male respondents

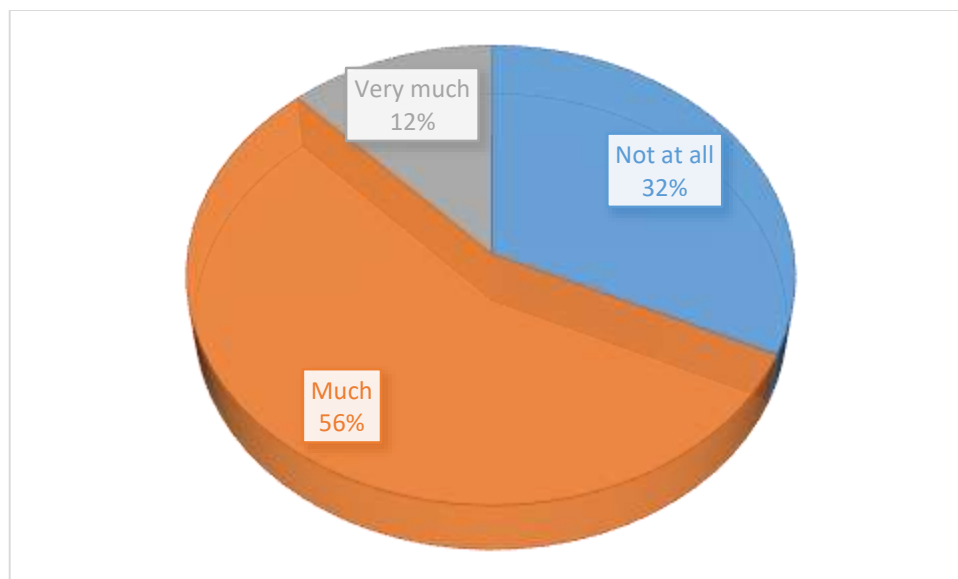


Figure 10:Male respondents regarding E-mail

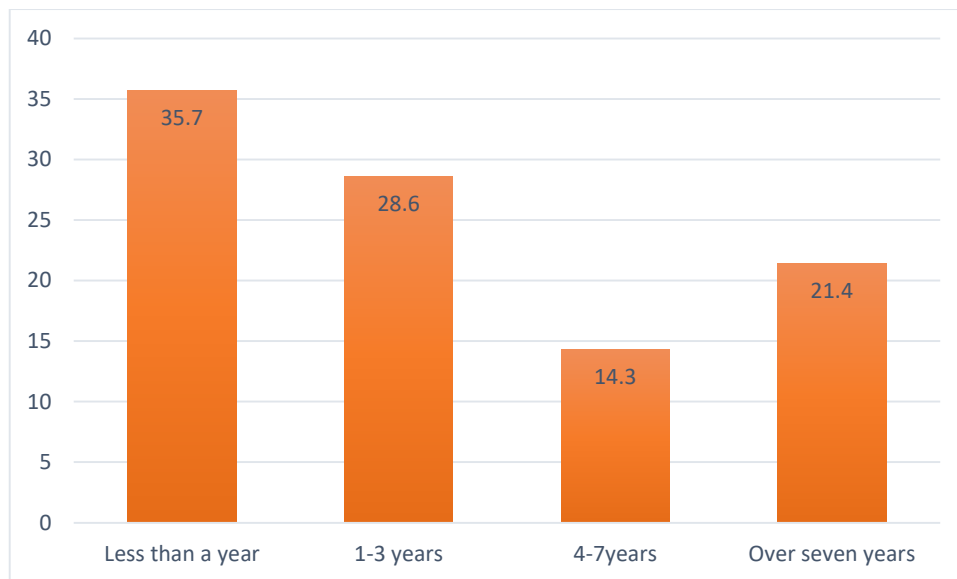


Figure 11 :Male respondents encounter with computers

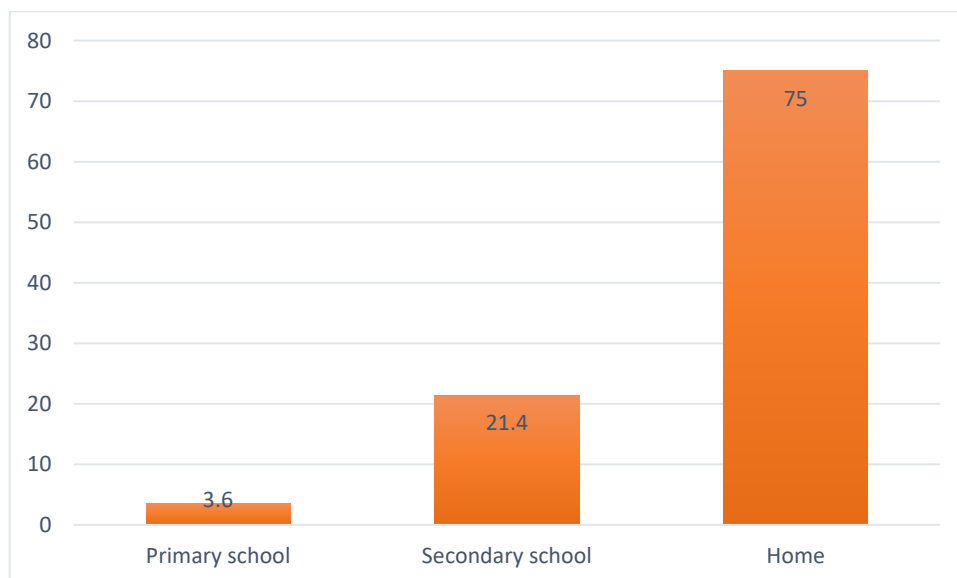


Figure 12:Male respondents responses on encounter with computers

3.3 Assessing the Extent to Which Students Access ICTs

3.3.1 Female Respondents' Responses

Data revealed that 92% of the students were good at word processing while 78.5% were good at the spread sheets. The study showed that 78.6% of the female students were good at power point presentations and 64.2% at e-mailing. Majority of the students (64.3%) of the female students were excellent in internet browsing, 21.4% were good and 7.1% were poor(Figure 13).

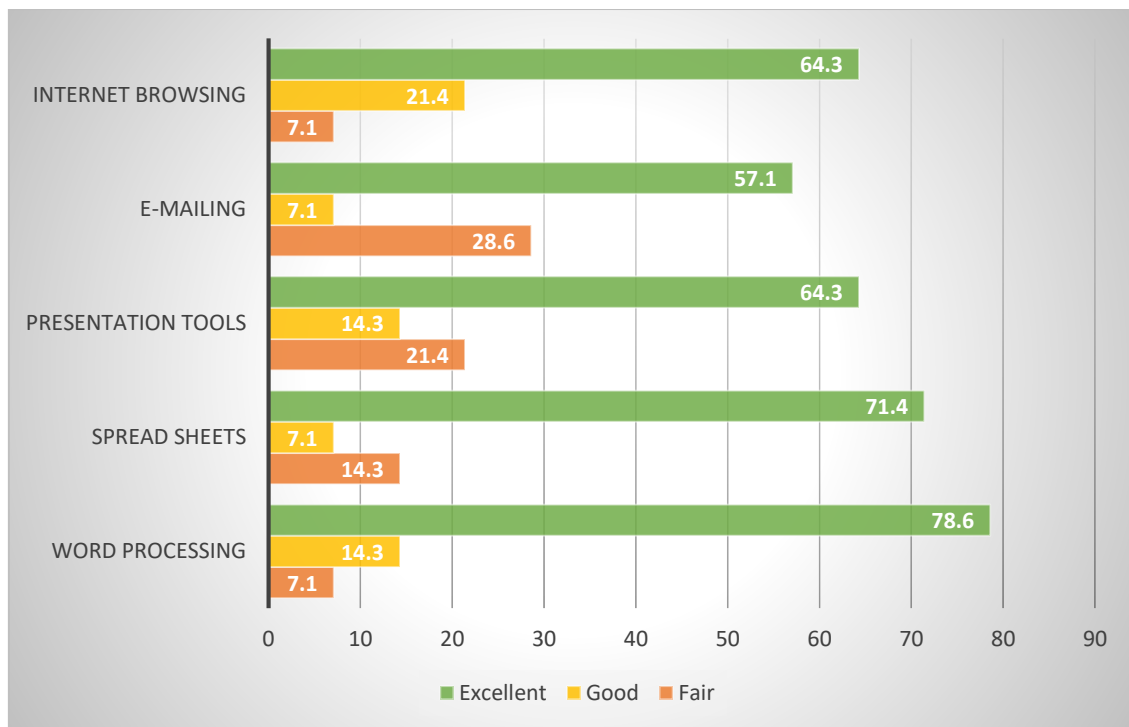


Figure 13:Female respondents response in assessing ICT

3.2.2 Male Respondents Responses

In establishing how knowledgeable the students were in word processing (e.g. MS Word), the study found that 80% were good. Further findings indicated that as far as the spread sheets were concerned 33.3% of the male students were good and excellent while 16.7% were poor. Results indicated that 72% of the students would present their work on power point while 4% would do it. Regarding emailing 32% were good while 48% were excellent and 20% fair. On the other hand the results clearly indicated that 84% were excellent at internet browsing and 16% were good.

Figure 14: Male respondents response in assessing ICT

4.0 Conclusion

The findings of the study indicated that the students are highly skilled in Information Communication Technology skills. The study realized that the students are very good in the following key areas namely: opening and shutting down the computers, social network, printing and scanning, word processing and internet browsing. However there is need to provide the students with enough computers at all levels of the teaching and learning process. When students access the computers then majority of them will be in a position to sharpen their skills and be able to meet the needs of the society and result to the realization of vision 2030.

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