Influence of Teacher Accessibility and Attitude towards Integration of Computers in Mathematics Instruction in Secondary Schools in Kenya

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***Abstract*: - The widespread use of computers in schools renders accessibility and preparedness in these technologies necessary. It is critical to understand whether mathematics teachers are accessible to computers and have the necessary attitudes regarding computer integration into their classrooms. The purpose of the study was to establish the influence of teacher accessibility and attitude towards integration of computers in mathematics instruction in secondary schools in Kenya. A descriptive survey design was adopted for this study. 147 mathematics teachers in 25 public secondary schools of Kakamega South were selected through urposive, stratified and simple random procedures. The instruments for data collection were the questionnaire and interview schedule. Reliability of the data collection instruments was determined by split –half method. The data collected was analyzed using descriptive statistics. The findings had implications on integration of computers in secondary school mathematics.**

Key words: **Integration, accessibility, attitude**

I. INTRODUCTION

Mathematics in Kenya is a core subject and a critical filter for career choices. However, student performance in the Kenya Certificate of Secondary Education examination (K.C.S.E) has been dismal over the years.

Table 1.1:K.C.S.E Mathematics Examination Results Analysis For 2002-2007

Year	Candidature	Mean score
2003	205,232	38.62
2004	221,295	37.20
2005	259,280	31.91
2006	238,684	38.08
2007	273,504	39.46

Source: KNEC Report, 2006 and 2008

The analysis of K.C.S.E mathematics examination results for 2002 to 2007 in Table 1.1, indicate that performance has constantly been below average of 50%. Besides, calculating mean of means (37.44) clearly indicates that the student performance in each successive year has not been improving.

According to Strengthening of Mathematics and Science (SMASE) Report of 2008, the poor results have been attributed to various causes ranging from poor teacher attitude and lack of adequate learning materials such that performance in the subject correlates to availability of these resources (SMASE, 2008).

Several initiatives by the Ministry of Education and other stakeholders include large scale capacity building seminars and workshops that are aimed at strengthening the teaching of mathematics and the sciences in Kenyan secondary schools. In 2003, Strengthening of Mathematics and Science in Secondary Education (SMASSE) programme was implemented nationwide with the hope of solving pedagogical issues that have contributed to poor performance in mathematics and science subjects over the years. The government has also allocated grants to public secondary schools for the purchase of basic resources like textbooks. The Ministry of Education also introduced the use of scientific calculators for instruction and examination of candidates at KCSE aimed at enhancing performance in the subject (Ministry of Education, 2005). All these initiatives are expected to yield outstanding results in the subject in terms of solving perennial problems inherent in the subject. However, the problem of poor performance continues to persist as clearly indicated by the Kenya National Examination Council report (KNEC report, 2008). The trend is adding another impediment in Kenya's efforts to realise Vision 2030. Hence need to look at other alternatives.

In recent years, the impact of the "information age" has shifted from occurring primarily within the arena of governments and multinational corporations into school curricula. Accompanying this expansion is a growing belief that computers are essential components of the educational and instructional systems. According to Polonoli (2001) and Goddard (2002), such public perception is warranted because the computer represents both an excellent curricula tool and revolutionary classroom approach that can help students to realise important gains in learning and understanding of mathematical concepts. African nations have began designing new policies and investing large sums of capital aimed at integrating computers into the classrooms. In Kenya, this initiative was published in Sessional Paper No.1 of 2005 where Information Communication Technology (ICT) in education is given prominence. A comprehensive national ICT strategy for education and training was launched in 2006.

A specific target was to equip secondary schools and other learning institutions with ICT and adapt their curriculum to meet challenges of information society.

The Ministry of Education in an endeavor to provide learners with access to ICT came up with vision and mission statements. The vision states: "ICT to be a universal tool in education and training." The mission states: "To integrate ICT in education and training to improve access, learning and administration" (Sessional Paper No. 1 of 2005). To achieve these, every educational institution, teacher, learner and respective community should be equipped with appropriate ICT infrastructure and skills needed to benefit from ICT knowledge- based economy. Teaching and learning should be transformed to incorporate new pedagogies that embrace ICT and that are appropriate for the 21st century.

Achievements so far include: equipping of over 450 secondary schools with computers and provision of Kenya shillings 213 million by the government to 142 secondary schools to purchase computers. The Minister for Education in a recent forum on ICT (International Conference on ICT Development, Education and Training e-learning in Africa, 2007) noted that 288 rural public secondary schools will be supplied with electricity. In addition, a unit has been established at the Kenya Institute of Education (K.I.E) to provide overall leadership in digital content, development and delivery. Resources are being mobilised to address digitalisation of the entire curriculum (Ministry of Education, 2006). However, e-content is now available and curriculum innovation centre was launched at K.I.E in March, 2010 for purposes of enhancing curriculum delivery (www.icwe.co.ke/elearn2010). All these reflect the seriousness with which the government treats inclusion of ICT in classroom instruction. While acknowledging the availability of e-content and recent launching of curriculum innovation centre at K.I.E, this shifts the challenge from e-content availability to finding out teacher preparedness to integrate computers in teaching.

According to Kenya ICT 4E situational analysis (2009) the following achievements have also been realised: M.O.E again disbursed Ksh. 1.5 million to 213 schools evenly distributed across the country to be used to acquire 25 new computers per school, 1 printer per school, educational software and sensitize ICT teacher on technical maintenance. Computers for Schools Kenya (CFSK) reported to have installed 18,000 computers in over 600 schools with 20 computers per school. ICT Trust Fund has provided 200 schools with 20 computers each. The NEPAD e-schools project provided 6 schools with 20 computers each. The Rural School Project has provided 4500 computers to a number of unidentified schools. Overall, the analysis indicated that 15,450 computers have been disbursed to 1300 secondary schools out of over 4000 schools. There is also evidence that some secondary schools with digital content are using computers in teaching specific subjects. While acknowledging the government effort, simply deploying computers to schools will not automatically lead to computer integration into teaching and learning. Effective integration will depend on a larger extent teacher attitude and whether they are able to access computers in their schools or not (UNESCO, Bangkok, 2003).

Despite the aforementioned efforts and the fact that ICT increases access to instructional material and several advantages to teaching, computers in many school are underused and as such the potential of computer technology is not being realised (Abrami,2001; Muir-Herzig,2004; Sutherland et al., 2004). Work conducted in the United Kingdom, Thailand, Greece, and Australia reveal the same (Pelgram, 2001; Demetriadis et al., 2003; Wilson, et al., 2003). There was therefore need to ascertain whether a similar situation holds for Kakamega South District schools. The current study aimed at investigating whether mathematics teachers attitudes and computer accessibility by teachers influenced their use of computers in mathematics instruction..

In developing nations like Kenya, the issue of access to and use of hardware and software is still a problem to address (Sanya, 2001; Adhola, 2004). Besides, individual differences in beliefs and attitudes among teachers are the key area of interest for researchers today (Dexter et al, 1999; Zhao et al, 2002). The researcher believes that teachers are the focus of interest because they have the primary contact with the students. Furthermore, they experience the barriers and supports to integration of technology first-hand. Therefore, questions exist as to whether or not classroom teachers throughout the world, and particularly in Kenya, have the attitudes needed to successfully and effectively implement the computer technology in ways that are meaningful to students. This is an issue that the present study sought to address.

Unfortunately, the implementation of information and communication technology into Kenyan secondary schools has not been guided by research (International Computer Science and ICT Conference, 2006). In particular, the ICT strategy adopted by the Kenyan government did not take into consideration teachers' reaction and attitudes to these new tools. This is because teachers' attitudes eventually influence their initial acceptance of computer technology as well as future behavior regarding computer usage (Ertmer, 2005). This suggests that computer technology integration should focus on the classroom teachers' attitude. The researcher was therefore interested in finding out the "preparedness" of the mathematics teachers to integrate computers in instruction. Given the critical role of mathematics teachers in enhancing learning across the curriculum, it was important to understand the contributions that they make in supporting or inhibiting the integration of computer technology in the classroom.

Although, more and more secondary schools are acquiring computers, there needs to be more than just transferring resources to schools if educational change is to be attained. The ability to use computer as a cognitive tool is a major milestone in the process of integrating computer in the teaching of mathematics. This depends on several factors, among them mathematics teachers' access to computers for

instruction and attitudes towards computer use in teaching. It is against this backdrop of access to computers and preparedness of teachers that the present study strived to investigate teacher access to computers and attitudes and how they influence integration of computers in mathematics instruction in secondary schools in the Kakamega South District.

1.1 Statement of The Problem

Poor performance in national K.C.S.E mathematics examinations has persisted over the years with an average of less than 40% from 2002 to 2007 as indicated by the KNEC report, 2008 (Table 1.1). A similar trend is experienced in Kakamega South District. This is despite the efforts made by the government of Kenya to improve the situation. This has included initiatives such as in-servicing of mathematics teachers through "Strengthening of Mathematics and Science Education (SMASE) project and introduction of use of calculators in the teaching and learning of mathematics. Besides, the Ministry of Education has launched national ICT policy to integrate computers in classroom instruction. An effort has also been made to introduce computers in secondary school curricula including mathematics instruction in some schools (Kenya ICT 4E situational analysis, 2009). However, mathematics teachers are not accessible to computers in schools are widely used for teaching acquisition of computer literacy skills and computer studies as an examinable subject (Omari and Mosha, 1987). However, little effort has been made to help teachers of other subjects to access the computers in their classrooms (Otieno, 2003) and attitudes (Yuen and Ma, 2001) for integrating computers in teaching and learning. It is for this reason that researcher felt the need to find out the influence of teacher accessibility and attitude towards integration of computers in the teaching of mathematics in secondary schools in Kenya.

1.2 Purpose of The Study

The purpose of the study was to establish the influence of teacher accessibility and attitude towards integration of computers in mathematics instruction in secondary schools in Kakamega South District, Kenya. The main purpose was to find out if mathematics teachers in Kakamega South District are using computers and if not could their attitudes and lack of access be the cause.

II. METHODS AND MATERIALS

The study was conducted in the Kakamega South District in Kenya. The study adopted descriptive survey design. This design was deemed appropriate as it enabled the researcher to reach as many respondents as possible within a short time. The target population was 77 public secondary schools with a total of 228 mathematics teachers. The sampling frame was 25 schools with computers with a total of 147 mathematics teachers (43 female and 104 male) representing 32.5% of the total public secondary schools in the district. Purposive sampling was used in selecting schools with computers. Stratified sampling was then used to avoid gender disparity given that number of female teachers was only 43 against 104 males. Simple random sampling was then used to pick 30% (n=74) the mathematics teachers in each stratum to be interviewed. This was to ensure each respondent got equal opportunity to participate in the study. Data was collected using questionnaire and interview schedule. Split half method was used to test reliability of research instruments. Spearman Brown Formula coefficient of 0.858 was realized which was above recommended 0.8. The reliability of 0.858 was regarded as a reasonable reliability index for the research instrument. Data collected were analyzed using descriptive statistics such as frequencies, percentages and means. The results were presented using tables and figures.

III. RESULTS AND DISCUSSIONS

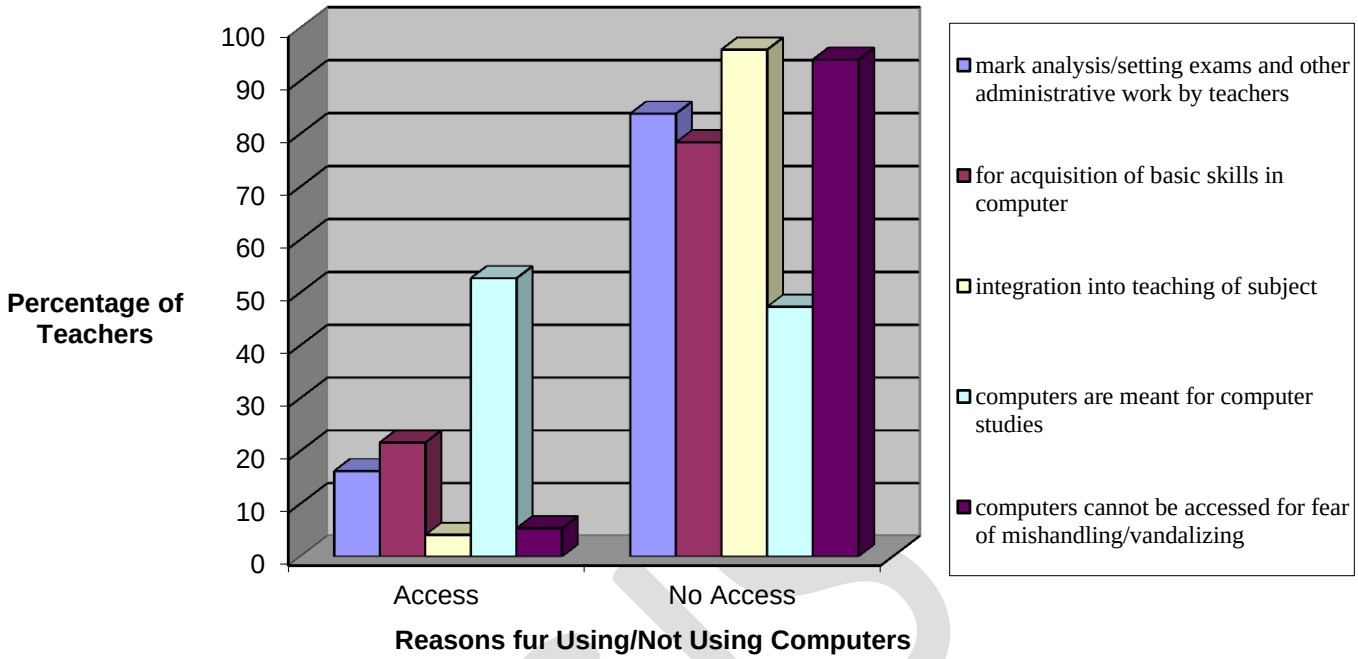
3.1 Degree of Accessibility and Usage of Computers by Mathematics Teachers

The researcher aimed at determining degree of access and usage of computers by mathematics teachers'. Teachers were therefore asked to give their professional opinions about their degree of access and usage of computers. Only a paltry 3.4% indicated that they used computers in teaching mathematics. Majority indicated that they used conventional resources, namely: chalkboard (100.0%), textbooks (98.4%), calculators (78.9%), models (50.0%) and charts (38.2%). Based on these findings, it is clear that computers in the selected schools were hardly used to support instructional processes. The findings indicated that traditional methods of teaching could be attributed to influence of attitudes and lack of access to computers. These results are consistent with findings of other studies by Hazzan (2000), NCES (2000) and Smeets (2005). They assert that teachers who grew up learning mathematics in traditional methods feel insecure in the integrated form of teaching. Teachers were also asked whether they had access to computers in their schools, most 85.7 % respondents said they did not access the computers in their schools while 14.3 % had access to the computers.

When asked to cite reasons for accessibility or non-accessibility of computers for purposes of teaching mathematics, the teachers' responses are as summarized as follows: Most (52.7%) of teachers did not access computers because computers were meant for computer studies, 21.6% of the teachers accessed computers to acquire basic computer skills, 16.2% used computers for marks analysis/exams setting while 5.4% were not allowed access by school administration for fear of mishandling or vandalizing and only 4.1% used computers for teaching mathematics.

To clearly illustrate the different reasons why mathematics teachers in the district were using computers and why in some schools the mathematics teachers did not have access to computers, the percentages were used to plot the bar graph as shown in Figure 1 be low.

Figure1: Reasons for Computer Access/No Access



From the findings in Figure 1, the results indicate that most (83.8%) do not use computers for examination analysis/examination setting, 78.4% do not use computers for computer literacy skill acquisition and 95.9% do not use computers for the teaching of mathematics. It is therefore deduced that, mathematics teachers in Kakamega South District are not using computers in the teaching and learning of mathematics. These may be due to lack of access to the computers in the school implying they are basically meant for computer studies. Furthermore, the results show that emphasis is laid on computer studies as other subject in the curriculum at the expense of other subjects in the curriculum. In addition, Figure 1 also indicates that 5.4% are not allowed to use computers due to fear of mishandling.

The researcher also strived to find out whether those teachers who had access to computers in their schools used the computers for mathematics instruction. Out of the total 31 mathematics teachers who said they were allowed access to computers in their school, 96.6% did not use them for teaching and learning mathematics. Only 3.4% used them for instructional purposes. It therefore became necessary to find out respondents opinions on the factors hindering usage of computers in mathematics instruction. The majority (78.4%) lacked computer technical skills, 75.7 % alluded to inadequate computers/software in the schools, 14.9% lack of integrated mathematics curriculum, 20.3% resistance from teachers, 24.3% cost of computers whereas others included lack of electricity, heavy workload, exam-oriented reasons, overcrowded classes, lack of support from government/heads of schools and other stakeholders accounted for 25.7%.

Further analysis on factors hindering usage of computers in the teaching of mathematics clearly indicated that majority (78.4%) lacked computer technical skills, 75.7% alluded to inadequate computers/software in the schools, 14.9% lack of integrated mathematics curriculum, 20.3% resistance from teachers, 24.3% cost of computers whereas others included lack of electricity, heavy workload, exam-oriented reasons, overcrowded classes, lack of support from government/heads of schools and other stakeholders accounted for 25.7%. Based on the findings above, it is clear that while teachers lacked access to computers and related software they also lacked the appropriate computer skills to use computers in mathematics instruction. The results also indicated that teacher's attitude had an influence on computer use in their classrooms. Further analysis established that there were other factors hindering use of computers in teaching namely; lack of electricity, lack of integrated mathematics curriculum, frequent power blackouts in areas prone to heavy rains, heavy workload, exam-oriented reasons where emphasis is laid on mean score, overcrowded classes which hinders effective instruction using computers, lack of grants of funds to sustain the project, cost of computers, cost of maintenance, lack of support from the heads of schools, government and other stakeholders.

Rigidity/resistance of teachers' fetched (16.2%). Resistance may be due to the fact that teachers prefer traditional methods that are familiar and known to produce results than fumble

with 'unknown technology.' The results are similar to findings of Hazzan (2000) and NCES (2000). They assert that teachers who grew up learning mathematics in traditional methods feel insecure in the integrated form of teaching. Other barriers cited included: cost of maintenance (4.1%), lack of electricity (1.4%) and lack of integrated syllabus (1.4%). Sanya (2001) and Adhola (2004) argue that availability of electricity is limited mainly to urban. One of the biggest barriers hindering use of computers in general is lack of electricity. Figures from the M.O.E (National ICT Policy,2006) indicate that 75% of public secondary schools in Kenya are situated in rural areas and it therefore implies that most secondary schools lack electricity that will enable mathematics teachers integrate computers in mathematics curriculum. However, the government recognizes this constrain to ICT growth. The launch of Rural Electricity Authority (REA) serves as a good step in ensuring that electricity is widely available in rural Kenya. The findings above are consistent with Mueller et al (2007) who identified both environmental factors like limited access, technical problems and individual characteristics like skills and attitudes as potential barriers to successful integration of computer technology. Similar studies by Ndiku (2003) and Fulton et al (2002) identified insufficient number of computers as one of the factors hindering use of computers by teachers.

3.2 Teachers' Attitudes Toward The Use of Computers in Mathematics Instruction

The researcher wanted to find out teachers' attitude towards use of computers in mathematics instruction. To respond to this, the mathematics teachers were first of all asked to give their professional opinions about use of computers in teaching and learning mathematics using the Likert Scale. To analyse data on teachers' attitudes, the Likert Scale was scored as follows: Strongly Agree (SA); 5,Agree (A);4,Nuetral (N);3,Disagree (D);2 and Strongly Disagree (SD): 1 for positive statements while for negative statements the scoring procedure was reversed. For purposes of analysis of data generated from the Likert scale, the options provided as "Strongly Agree (SA)" and "Agree A)" was merged to mean "Agree (A)" with 4 points and "Strongly Disagree (SD)" and "Disagree (D)" were merged to mean "Disagree (D)" with 2 points (Donald and Pamela, 2006). They argue that to ensure consistent results, the highest and lowest score are selected. The middle is excluded from subsequent analysis. The two extremes are the 2 criterion groups by which individual items are evaluated. On the interpretation, a mean score of above 3 denoted a positive attitude. A mean score of 3 denoted neutral perception while a mean score of below 3 denoted negative attitude. The mean is the average of a set of scores. The mean of mathematics teacher attitude towards use of computers was calculated by finding the summation of frequency in each column multiplied by its corresponding score. The products were then summed and divided by the total frequency. The results were outlined in Table 3.1.

Table 3.1: Teachers' Attitudes towards Use of Computers in Mathematics Instruction

No.	Statement	A	U	D	Mean	Attitude
1	Computers will make mathematics teaching enjoyable	137 93.2%	6 4.1%	4 2.7%	3.905	Positive
2	I would avoid use of computers in teaching Mathematics as much as possible	13 8.8%	10 6.8%	124 84.4%	3.755	Positive
3	Mathematics teaching will be easier if computer is used to solve problems	116 78.9%	10 6.8%	21 14.3%	3.646	Positive
4	I have a low opinion of integrating computers in mathematics	14 9.5%	8 5.4%	125 85.1%	3.755	Positive
5	Use of computers will cause students to loose basic computational skills	65 44.2%	15 10.2%	67 45.6%	3.034	Positive
6	Computer will help me approach same topic in many different ways	130 88.5%	3 2.0%	14 9.5%	3.789	Positive
7	I don't think I would ever need a computer in my classroom	14 9.5%	7 4.8%	126 85.7%	3.762	Positive
8	With computer it is possible to do more practical teaching	122 83.0%	9 6.1%	16 10.9%	3.721	Positive
9	I fear computer may take over my job	22 15.0%	10 6.8%	115 78.2%	3.633	Positive
10	Teaching using a computer is hard, involving and challenging	34 23.1%	15 10.2%	98 66.7%	3.435	Positive
11	Teaching mathematics using computers is time consuming hence affects syllabus coverage	37 25.2%	26 17.7%	84 57.1%	3.306	Positive
12	Using computers to teach mathematics do not scare me at all.	121 82.3%	5 3.4%	21 14.3%	3.966	Positive
13	I have no intention of using computers in teaching Mathematics in the near future.	21 14.3%	8 5.4%	118 80.3%	3.660	Positive
14	Using a computer will enable to teach better.	118 80.3%	14 9.5%	15 10.2%	3.701	Positive
15	Use of computers is not absolutely necessary for teaching Mathematics	39 26.5%	13 8.9%	95 64.6%	3.354	Positive

The results in Table 3.1 revealed that the attitude of the mathematics teachers was above the mean of 3. This implied that majority of the mathematics teachers had a positive attitude towards use of computers in mathematics instruction with a mean of means of 3.628. However, despite the positive attitude one question fetched the lowest mean of 3.034 where those who agreed (44.2%) were almost similar with those who disagreed (45.6%). This implies that the teachers were undecided on whether use of computers would cause students to loose basic computational skills. This may have been due to lack of skills and knowledge on the potential of computers in mathematics instruction. These results are consistent with other similar studies by Koohang (1989), Selwyn (1997), Dexter et al (1999), Baylor and Ritchie (2002), Otieno (2003). They assert that teachers who easily accept and incorporate new ideas, changes and reforms into their practices are more likely to integrate computer applications in their teaching practice successfully. Wonzney et al (2006) assert that teachers' personal characteristics like attitude have shown to predict computer integration in mathematics instruction. Similarly, ISTE (2002), Demetriadis et al (2003) and Angeli and Valanides (2005) argue that teachers who feel computers are appropriate tools for promoting students learning also engage their learners in use of computers more than teachers who do not feel computers are appropriate tools for student learning. The results in Table 4 are an indication that mathematics teachers in Kakamega South District see computer as a tool that can enhance teaching and learning process.

Having found out that the mathematics teachers' attitude towards computer technology use was positive, it was necessary to find out how frequently they used computers. In this study, teachers' frequency of computer use is summarized as indicated: Most (59.2%) of the teachers do not use computers, 17.7% use computers once a week, 12.9% of the teachers use computers more than once a week and a paltry 10.2% uses computers every day. From the results in Table 4, majority of the mathematics teachers do not use computers in their day to day activities. It therefore follows that they do not use them in their classrooms. As noted in the literature these findings coincide with previous correlation studies which have long forecasted that the use of computers in teaching and learning of mathematics would very much depend on how well teachers integrate them in everyday activities (Loyd and Loyd, 1985; Kluever et al., 1994; Yuen and Ma, 2001; Hsiung, 2001). Similar studies have shown a correlation between frequency of computer use and teachers attitudes towards use of computers in their mathematics classrooms (Hawkins and Oblinger, 2006). However, it can also be concluded that although the mathematics teachers in Kakamega South District have not embraced the use of computers in the classrooms, there is pervasive use of computers in their daily and personal lives. Inevitably such developments need to be reflected in our schools.

According to Office of Technology Assessment (1995), lack of standard of integration is a factor that influences use in classrooms. Although computers are in schools and teachers are being encouraged to integrate computers with mathematics, there is no universal definition of what integration of technology with mathematics means or what an integrated curriculum looks like. However, the recent launch of e-content by K.I.E and launching of curriculum innovation centre at K.I.E for purposes of enhancing content delivery may shift this challenge to training of teachers in use of computers, computer integration across the other subjects and infrastructure development in the schools.

Having identified the difficulties experienced by the mathematics teachers, respondents were further asked to say if they were willing to use computers in mathematics instruction. The findings also showed that out of the 74 teachers interviewed, most (95.9%) were willing to use computers in instruction with very few (4.1%) not willing to use computers in instruction. Furthermore, teachers were asked to say why they were willing to use computers in mathematics instruction. Their responses were summarized in Table 3.2.

Table 3.2: Reasons Why Teachers Are Willing To Adopt Computers In Mathematics Instruction

Reasons for willingness to use computers	**No. of teachers**	**%**
Method that will enhance teaching/learning mathematics e.g. teaching easier/efficient/effective and learner- centred approaches	60	81.1
Adopting new and modern pedagogy a must since it is more effective than traditional methods	17	23.0
Change students attitude towards mathematics	1	1.4

The findings in Table 3.2 indicate that most mathematics teachers (81.1%) believe the use of computers in teaching mathematics enhance performance in mathematics instruction. Responses cited included; teaching easier/effective/efficient, while learning interesting, learner friendly/enjoyable/simplify abstract concepts/cater for individualized instruction/provides hands on experiences vary stimuli and faster computation.

For those teachers who were not willing to adopt the use of computers in instruction their responses were as follows: computer use was considered extra workload, feared that learners will not think and they may lose basic computational skills (4.1 %). Teachers were further asked to give an opinion on whether their colleagues' mathematics teachers were willing to adopt use of computers in their classrooms. From the results, out of the 74 teachers interviewed, most (86.5%) teachers alluded to the fact that their colleagues were willing to use computers in mathematics instruction but (13.5%) said that their colleagues were not willing. They gave reasons to

support their arguments. Their responses are summarized in Table 3.3.

Table 3.3: Opinion On Reasons For Not Willing To Use Computers By Colleagues' Mathematics Teachers

Statement	No. of teachers	%
Lack of availability hinders them	1	1.3
Teachers lack skills and should be trained (both pre-service & in-service)	7	9.5
Rigidity/human beings fear change	2	2.7
Total	10	13.5

From the findings in Table 3.3, teachers lacked skills and should be trained (13.5%) and rigidity or fear of change among the teachers (5.4%) and lack of availability (1.3%). Based on this information, it is clear that teachers' attitude and computer skills including availability of computers in classrooms can affect their use of computers in their classrooms. These results are consistent with other similar studies by Koohang (1989) and Selwyn (1997) who assert that teacher attitude and skills on use of computers are major factors related to initial acceptance of computer technology and it is use. Similarly, Loyd and Loyd (1985) and Yuen and Ma (2001) assert that teacher attitude towards computer is central to successful use of computers in classroom instruction. Besides, Baylor and Ritchie (2002) argue that regardless of the amount of technology and it is sophistication, technology will not be used unless the teachers have the skills, knowledge and attitudes necessary to use computers in classroom instruction. Based on the findings, it is clear that lack of computer skills in use of computers in teaching, teacher attitude and computer access determines mathematics teachers' use of computers in Kakamega South District schools.

IV. CONCLUSIONS

4.1 Computer accessibility and usage by mathematics teachers

The study established that the computers in the schools are inadequate. Most mathematics teachers do not access computers in their schools. Most mathematics teachers in the district do not use computers in the teaching and learning of mathematics.

4.2 Attitudes of teachers towards use of computers in mathematics instruction

The study established that mathematics teachers in Kakamega South District have a positive attitude towards use of computers in their teaching practice.

V. RECOMMENDATIONS

From the findings outlined, the following recommendations are reached:

a) Head teachers to be supported by government in order to provide adequate computers and relevant K.C.S.E mathematics software in their institutions.

b) The government and other stakeholders like NGOs through the Ministry of Education should provide grants to schools to subsidize in the purchase of the computers and accompanying software to ensure all teachers are accessible to computers.

c) Other stakeholders like religious organizations, Community Based Organizations (C.B.Os) and Non-governmental Organizations (N.G.Os) may help fund the computer projects in the schools for example purchasing computers and providing necessary infrastructure in the schools.

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