

**BASELINE SURVEY REPORT FOR ICT IN SECONDARY SCHOOLS IN SELECTED
PARTS OF KENYA**

DRAFT REPORT

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PREPARED FOR:

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SURVEY OF ICT IN KENYAN SCHOOLS

INTRODUCTION

This baseline survey was carried out covering 56 schools in 7 provinces out of 8 provinces in Kenya, in order to determine the current use and attitude towards ICTs in schools in the

provinces. The survey was conducted as part of Developing Partnership in Higher Education (DelPHE) which was funded by British Council.

The survey was conducted between June and November 2008 and was carried out in both primary and secondary schools in the provinces mentioned. However, majority of these were secondary with primary schools. Two technical training colleges were also included in the survey.

Sources of data

This survey obtained data from secondary as well as primary sources. Data was generated from a cross-section of head of departments, IT teachers, deputy principals and principals of two primary, fifty two secondary and two technical training colleges.

Sampling

Data was collected from 52 public secondary schools, 2 primary schools and 2 technical training colleges. The baseline survey did not involve any specific institutions but the institutions were picked at random with guiding principle being availability of computer(s) in the institution.

All the institutions were scattered in 7 provinces.

The Survey Process/Methodology

Researcher Assistants supported in data collection by visiting schools during the period beginning June to November 2008. Questionnaires were either sent in advance by email, administered on the spot or collected agreed date from the institution.

This survey employed a mix of both qualitative and quantitative techniques of data collection. The key deliverables of the study was;

- To establish an inventory of computers and applications in institution visited.
- Assess use of Internet.
- To assess the use of ICT equipment in the institutions (schools and colleges visited).
- Identify the sources of funding for computers.
- Assess the human capacity of the institutions.
- Assess the impact of computers on lives of users.

The questionnaire used for the exercise is enclosed in Appendix 1.

Assumptions

It is assumed that the average school population is 500. This might be higher but assumption is made because on average the school population falls within 400 – 1200 students. This assumption may change.

Survey Issues

Lack of information on what is happening in the IT in education sector is has made it difficult to use lessons learnt from such projects in planning and strategy formulation (Farrell, Glen and Shafika Isaacs. 2007).

Kenya's Ministry of Education's (MoE) ICT option Paper (2005) suggests that ICT integration concepts used in the TTC model can be adapted for secondary school teachers and students.

In addition, the Ministry of education has National ICT Strategy ICT for Education and Training (2006) which highlights the potential of ICT to help support implementation of Free Primary Education (FPE) and to address emerging challenges such as; overcrowded classrooms, high Pupil Teacher Ratios (PTRs) particularly in densely populated and semi-arid areas, shortage of teachers on certain subjects or areas, and relatively high cost of learning and teaching materials.

The National ICT Policy also recognizes the potentials of ICT in education by emphasizing integrating ICTs in teaching curriculum at all levels of education.

During this survey it was clear that majority of teachers were ill equipped to effectively integrate ICT in classroom. The main challenge for teachers interviewed was lack of adequate number of computers, educational applications, training, policy and strategy on how integration should be done.

Desired Outcome

- Understanding of the challenges and issues in ICT's in the schools teaching and learning environment
- Establish the impact of ICT's on schools and users.

Objective of the Survey

A number of Information and communications technology initiatives have been launched in the recent past to improve teaching and learning in the education sector by government, entrepreneurs and some through joint programs carried out by private and public sector consortia. Some of the initiatives have been successful whereas others have failed.

This research is expected to

- To document successes achieved in the implementation of information and communication technology initiatives in the education sector.
- To establish the impact of the information and communications technology initiatives in the teaching and learning environment.

Participating Schools

The list of schools that participated in the survey including the contact details is enclosed in Appendix 2. The 56 schools and colleges that participated are split as follows:

Institution By Category By Region				
Region-Province	College	Primary	Secondary	TOTAL
Central	0	0	3	3
Coast	0	0	5	5
Eastern	0	0	3	3
Nairobi	0	0	12	12
Nyanza	1	2	12	15
Rift-Valley	0	0	3	3
Western	1	0	14	15
TOTAL	2	2	52	56
%	3.6	3.6	92.9	100

The survey was not designed with specific distribution of schools and colleges in mind. The idea was to reach as many schools as possible with emphasis on schools and colleges with computer(s).

Usage of Computers

There is a wide range of use of computers in the schools and colleges surveyed. It is clear that administrative use and examination processing remains the most frequent followed by teaching of basic computer skills. This is because most schools feel that they are finance constrained and the little money they have they would rather spend on administrative support service.

It was also found that a few schools had purchased schools management software which used with varying success. Most felt unsupported with lack of training on sue of management software. The most common modules bought by schools were examination, timetabling and accounting modules.

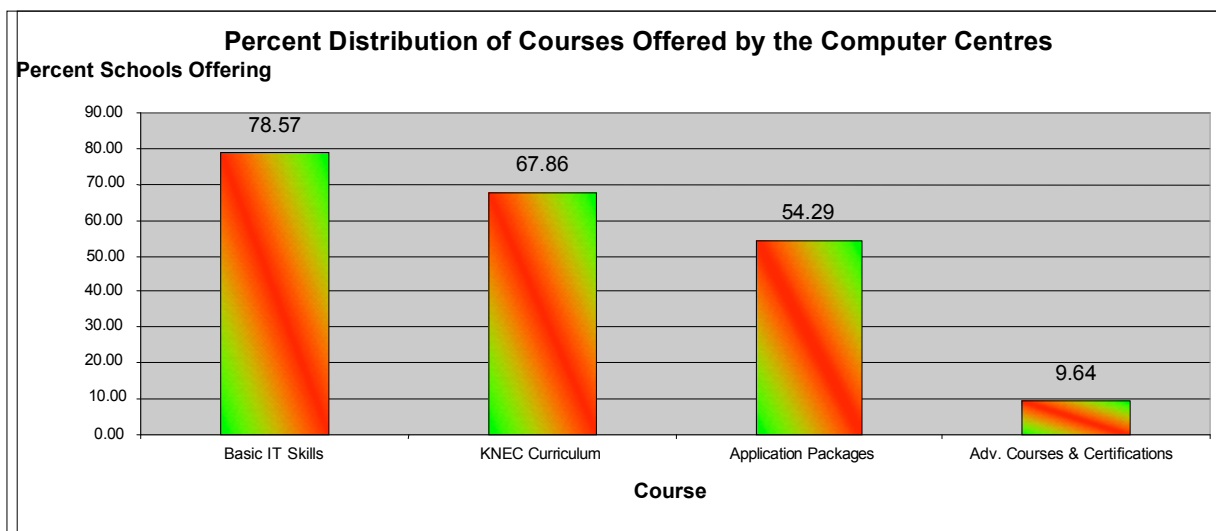
Use of computers for teaching and learning remains dismal with a 7.14% performance in the survey. This is a gap that needs to be filled. The schools that report some activity with e-learning are NEPAD e-schools.

All schools felt that they did not have adequate funding to purchase ICT equipment and would consider buying them for administrative purposes. School administrators recognized the need for the school administration. Most of these computers would be used for booking, letter typing and examination processing.

This can be seen from the table where school administration and examination processing rank highly in schools. The priority of most schools surveyed was to acquire computer for administration purposes before anything else.

Activity	Frequency (No. of Institutions)	Percent
School Administration	40	71.43
Teach Basic Skills	38	67.86
Examination Processing	29	51.79
Teach KNEC Syllabus	22	39.29
Internet Research	13	23.21
E-Learning Services	4	7.14

In terms of actual courses offered using the computers training on basic computer skills remains the most popular among secondary schools and technical training college followed by Kenya National Examination Council (KNEC) curriculum.

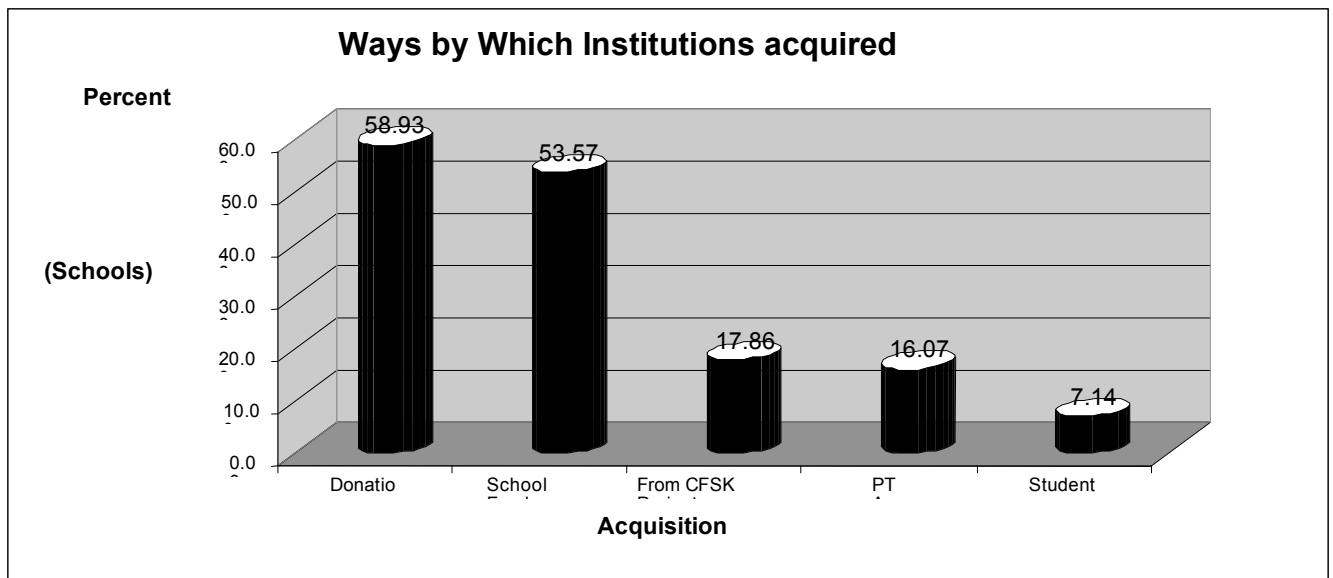


Literacy and Policy

Most schools have computer literacy courses offered to students and staff. However, though the schools indicate that they have computer literacy policy for all students, the student to computer ration as shown elsewhere in this report does not favor this policy.

Investigation Parameter		Frequency (No. of Schools)	Percent	Cum Percent	
Does School Have Literacy Courses at All?	Yes	44	78.6%	78.6%	
	No	12	21.4%	100.0%	
	Total	56	100.0%	100.0%	
Does School Have Policy of Computer Literacy for Students?	Yes	40	71.4%	71.4%	
	No	16	28.6%	100.0%	
	Total	56	100.0%	100.0%	

At the same time, most schools acquire computers either through donation or school fund. Most donations are from government funds or from Non Governmental Organizations (NGO). It is impressive that Computers for Schools Kenya (CFSK) has made its own distinction by contributing computers to 17.96% schools surveyed. School funds are normally internally generated incomes by the school or levies introduced by schools' management for buying computers. Parent Teachers Associations also contribute a significantly to 16.07% schools.









Computer Ownership

The empirical data collected in this survey show that the range of number of computers owned by schools varies widely from one school to another. In this survey 17.9% of schools (10) had less than 5 computers. 46.4% of schools had 20 or less schools while 62.5% had 130 or fewer computers. Given an average secondary school population of 500 students, this gives a very low student to computer ratio.

Most schools felt that they did not have adequate funding to purchase ICT equipment and would consider buying them for administrative purposes.

The schools with old P1 and P2 computers received these computers more than 5 years ago and have managed to keep them working though they run on MSDOS.

Range of computers in schools

Range Number of Computers	Frequency (No. of Institutions)	Percent	Cummulative Percent	
< 5	10	17.90%	17.90%	
5 - 10	11	19.60%	91.10%	
11 - 20	16	28.60%	46.40%	
21-30	9	16.10%	62.50%	
31-50	5	8.90%	71.40%	
Over 50	5	8.90%	100.00%	
Total	56	100.00%	100	

The average number of computers in the 56 schools surveyed is 21.23 computers per school. This gives an average of 1PC to 21.5 students. This means that many students do not have good contact with computers in their schools.

Summary Statistics : Computer Possession

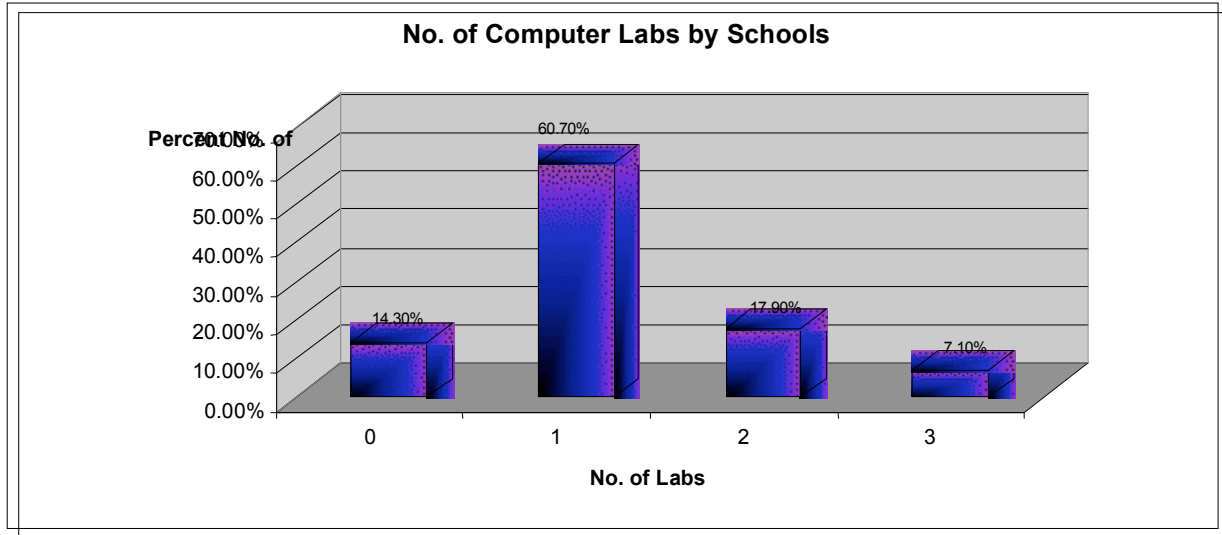
School Observed	Total PCs	Mean
56	1189	21.2321

General Picture of PC Possession by Type by Number of Institutions

Out of the 56 schools surveyed, 36 had P4s. it was surprising to find 4 schools with P1 computers and 16 schools with P2 computers. Out of the 36 schools with P4s, a total of 18 schools had between 1 and 10 P4s.

In the absence of policy on the type of computers that should be in schools, some schools find themselves with very old computers as donations.

No. Of PCs In Institution	Number of Schools with Shown Number of PCs					Mean Percent
	P1	P2	P3	P4	Other	
0	52	48	27	22	54	72.50
1 - 5	2	8	5	9		8.57
6 - 10	1	4	14	9	1	10.36
11 - 20		3	6	7		5.71
21 - 30	1	1	2	7		3.93
31 - 50			1	2		1.07
Over 50				2		0.71



Out of the schools surveyed, majority (60.7%) had only 1 computer lab, 17.8% had 2 computer laboratories. However, 14.7% had no computer laboratories imply they depended on offices as computer rooms.

Number of PCs Connected to the Internet

Majority of schools (58.9%) surveyed do not have Internet connected to the computer(s). The 42.9% schools who reported having internet have Internet connected from 1 Pc to over 50 PCs. Only one school with over 50 computers has internet connection to all computers. This is a national school with excellent facilities.




With the poor internet connection, it is impossible to properly use the computers for research, e-learning and collaboration with other schools.

Number of PCs Connected to Internet	Frequency (No. of Institutions)	Percent	Cumulative Percent
0	33	58.90%	58.90%
1 - 4	7	12.50%	71.40%
5 - 10	4	7.10%	78.20%
11 - 20	4	7.10%	78.60%
21 - 30	5	8.90%	87.50%
31 - 50	2	3.60%	91.10%
Over 50	1	1.80%	100.00%
Total	56	100.00%	100.00%

Despite the fact that only 42.9% of schools have Internet, 50% reported having email address which means some schools use other sources for internet access.

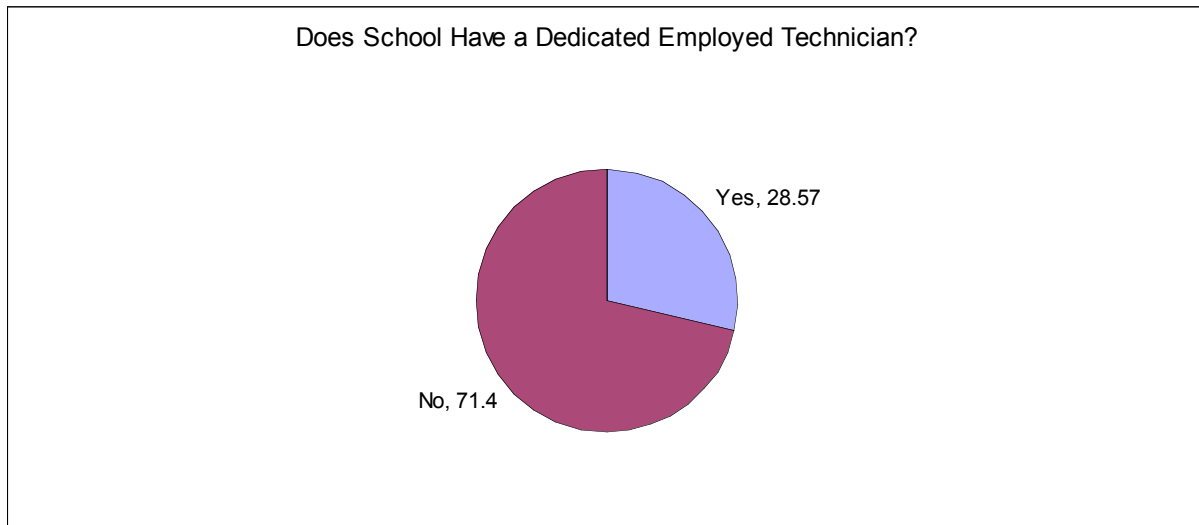
School eMail and Internet Connectivity Inspection

Does School Have email Address?	Yes	Frequency	Percent	Cum Percent
	Yes	28	50.0%	50.0%

	No	28	50.0%	100.0%	
	Total	56	100.0%	100	
Does School Have Internet Access?	Yes	24	42.9%	42.9%	
	No	32	57.1%	100.0%	
	Total	56	100.0%	100	

Computer Maintenance Status

Computer maintenance is a major challenge even to large organizations. 71.4% of schools interviewed reported they do not have dedicated technicians to service their computers.

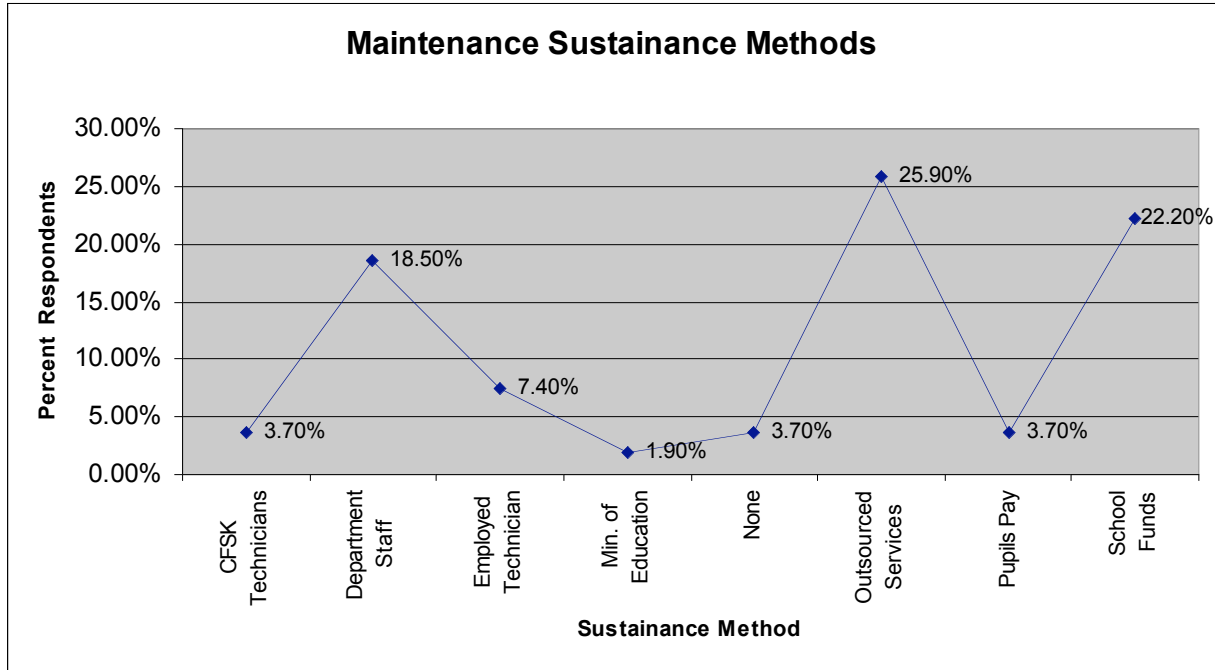


Teacher Availability for Computer Centre

Teachers play a dual role of teaching and support in most instances. The importance of having well trained teachers is therefore important.

From the analysis below, it is clear that many schools, have put in effort to promote computer literacy among teaching staff. Most the trained teachers are trained in basic computer courses and are useful for basic first line support functions. The analysis shows that 100% of teachers deployed to computer in the schools have received some basic training in computing.

Check Parameter	Frequency (Number Teachers)	of Frequency (Number of Schools)	Percent	Cum Percent
Total Number of Teachers in Computer Centre	0	5	8.9%	8.9%
	1	21	37.5%	46.4%
	2	17	30.4%	76.8%
	3	9	16.1%	92.9%
	4	1	1.8%	94.6%
	5	1	1.8%	96.4%
	9	1	1.8%	98.2%
	19	1	1.8%	100.0%
	Total	56		100.0%
No of Trained Teachers in Centre	0	10	17.9%	17.9%
	1	19	33.9%	51.8%
	2	16	28.6%	80.4%
	3	5	8.9%	89.3%
	4	2	3.6%	92.9%
	5	2	3.6%	96.4%
	20	1	1.8%	98.2%
	30	1	1.8%	100.0%
	Total	56		100.0%



Majority of schools (25.9%) use outsourced maintenance services while 3.7% use CFSK supports. Departmental support (trained teachers) is also very important and 18.5% reported using internal capacity for support. Funds for support are obtained from Ministry of Education and School funds.

Computer Integration in Learning and Teaching

Do Teachers Integrate Computers with Teaching?	Frequency	Percent
Yes	4	7.14%
No	52	92.86%
Total	56	100.0%

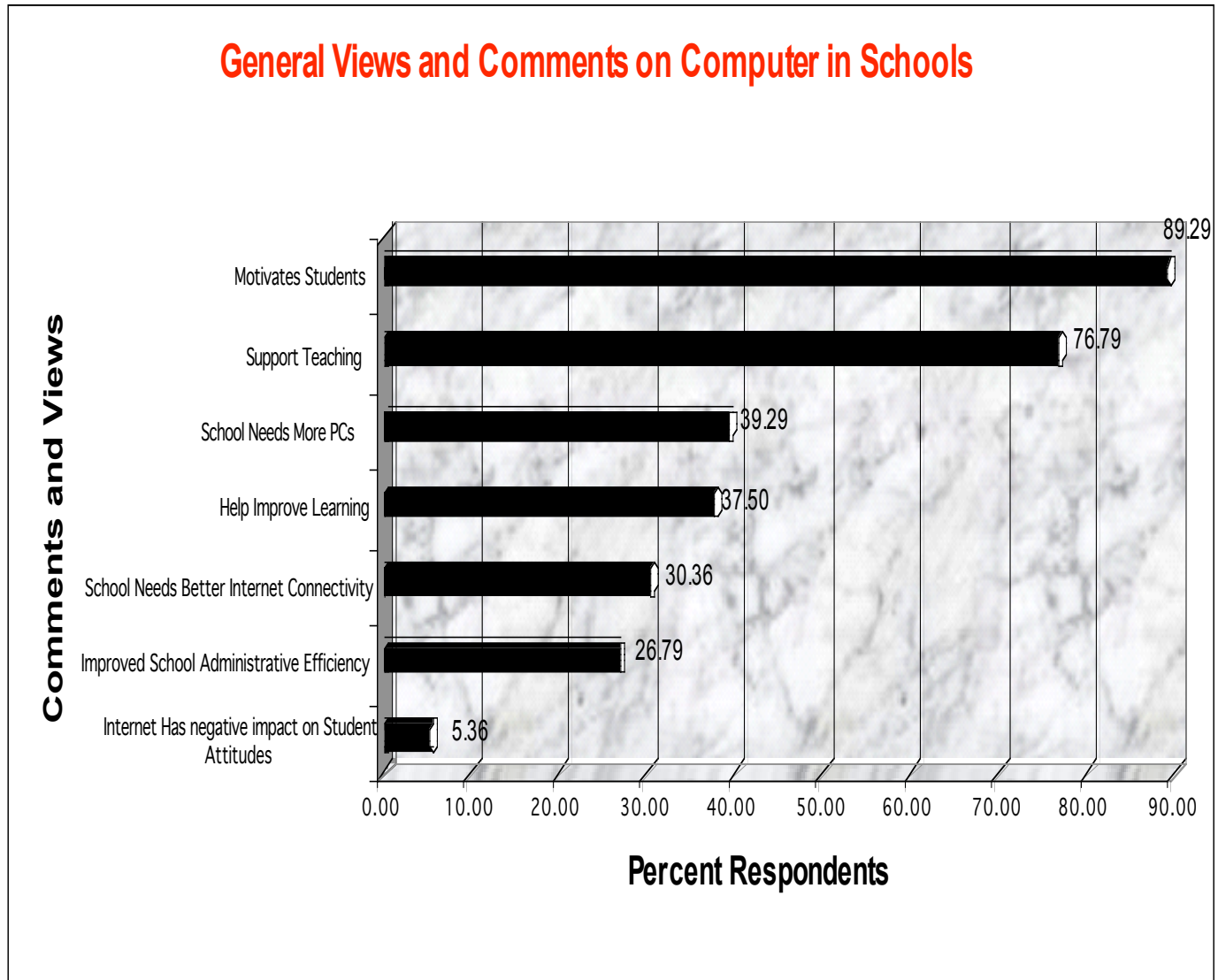
Only schools using e-learning and teachers trained on integration of computers and learning reported using computers for teaching and learning.

VIEWS AND COMMENTS

Most teachers saw computers as an important tool for motivating students (82.29%). They were of the view that computers are excellent tools for supporting teaching (76.79%). They were also of view that computers will help learning (37.5%). Internet connectivity was also cited by the teachers as a need (30.36%). The schools also acknowledged that administrative functions have been enhanced by the computers (26.7%).

Lack of adequate number of PCs in the schools remains a challenge (39.29%).

On the other hand 5.36% of respondents felt that computers have a negative effect on students.



APPENDIX 1

QUESTIONNAIRE FOR SCHOOLS

1. CONTACT DETAILS OF THE SCHOOL	
1. 1 Name	
1. 2 Region- Province - City	

1.3 Name and Surname of School principal	
1.4 E-mail of School principal	
1.5 Name and contact of computer coordinator	

2.COMPUTER SCHOOL ACTIVITIES	
2. 1 Give a short description about the activities of the computer centre at the school.	
2. 2 Describe briefly the courses offered to students through the centre.	
2.3 In particular, do you have courses of computer literacy?	Yes/No
2.4 Are teachers integrating computer courses with class curriculum?	Yes/No
Do you have a policy of computer literacy for all students?	Yes/No

3. FACILITIES	
3. 1 How were the computers acquired?	PTE? CFSK? DONATION? OR SCHOOL FUNDS?
3. 2 How many PC are available in computer lab?	
3.3 How many computer labs?	
3.4 What model of PCs?	P4? P3? P2? P1
3.5 How many PC are connected with the internet?	
3.6 Does school have email address?	Yes/No
3.7 Does school have Internet access?	Yes/No if yes details.

3.8 How is the cost of maintenance sustained?	
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4. HUMAN RESOURCES	
4. 1 How many teachers work at the centre?	
4.2 How many teachers are trained in ICT and to what level?	
4.4 Is there a technician working at the computer room?	Yes/No If no how is maintenance done?

What are is your view(s) regarding the impact of computers is school system? :

Signature of Interviewed Officer: _____

Date: _____

Appendix 2

SCHOOLS SURVEY
JUNE-NOVEMBER 2008 SURVEY
FINAL REPORT

Sch. ID	School Name	Category	Region-Province	District	eMail	Principal
1	Alliance Girls High School	Secondary	Central	Kiambu	info@aghschool.com	Mrs. J. N. M
2	Mumbi Girls Secondary School	Secondary	Central	Muranga		Miss J. Tha
3	Mangu High School	Secondary	Central	Thika	munyiri@yahoo.com	Mr. Henry M
4	Brainsworth School	Secondary	Coast	Mombasa		Kioko Wam
5	Allidima Visram High School	Secondary	Coast	Mombasa	Allidinaschool@gmail.com	M. M. Mwa
6	Mombasa High School	Secondary	Coast	Mombasa	2495903	Kavehe
7	Coast Girls High School	Secondary	Coast	Mombasa		Mrs. Karuri
8	Nyali Academy Senior School	Secondary	Coast	Mombasa	nyaliacademy@yahoo.com	Chege P. Nğ
9	Isiolo Boys High School	Secondary	Eastern	Isiolo		Mr. Wandei
10	Isiolo Girls Sec. School	Secondary	Eastern	Isiolo	guyogufu@yahoo.com	Mrs. Floren
11	Machakos Girls High School	Secondary	Eastern	Machakos	Ruthmatoloso@yahoo.com	Mrs. Mutisc
12	Upper Hill Mixed Sec. School	Secondary	Nairobi	Nairobi		Erica N. An
13	State House Girls High School	Secondary	Nairobi	Nairobi	Zekioranga@yahoo.com	Mr. J. R. Mu
14	Eastleigh High School	Secondary	Nairobi	Nairobi	rmwambugu@yahoo.com	Wambugu F
15	Pumwani Sec. School	Secondary	Nairobi	Nairobi	Pumwanisec@yahoo.com	Mr. Ngugi
16	Loreto Msongari	Secondary	Nairobi	Nairobi	info@msongari.ac.ke	Mrs. Mbugu
17	Nairobi School	Secondary	Nairobi	Nairobi	Principal@nairobischool.ac.ke	Mr. Robert J
18	Aga-Khan High School	Secondary	Nairobi	Nairobi	Osiemo@akhsn.ac.ke	Mr. Osiemo
19	Alliance Boys High School	Secondary	Nairobi	Nairobi	Info@alliancehighschool.org	David Gide
20	Kenya High School	Secondary	Nairobi	Nairobi	momanyi1@hotmail.com	Mrs. R. C. S
21	St. Mary's School, Nairobi	Secondary	Nairobi	Nairobi	info@stmarys.ac.ke	Fr. Boniface
22	Strathmore School	Secondary	Nairobi	Nairobi	Principal@strathmore.ac.ke	Rafa Gortaf
23	Moi Girls High School, Eldoret	Secondary	Nairobi	Turbo	Admin@moigirlseldoret.ac.ke	Jennifer Ch
24	Maranda High School	Secondary	Nyanza	Bondo	marandahs@yahoo.com	Boaz Owin
25	Gobei Mixed Sec School	Secondary	Nyanza	Bondo	abuya_joshua@yahoo.com	Tobias Om
26	Ombogo Girls Academy	Secondary	Nyanza	Homabay	Costomowido@yahoo.com	Cosmas T. (
27	Temudo School	Primary	Nyanza	Kisumu East		Emmy Aten
28	Arya School	Primary	Nyanza	Kisumu East	Oumajmo@yahoo.com	John Mark C
29	Kisumu Girls High School	Secondary	Nyanza	Kisumu East	merryakunja@yahoo.com	Mary Akun

Sch. ID	School Name	Category	Region-Province	District	eMail	Principal
30	Okok Mixed Sec School	Secondary	Nyanza	Kisumu East		Malachi On
31	Kisumu Polytechnic	College	Nyanza	Kisumu East	kisumupoly@yahoo.com	Francis I. A
32	Kisumu Boys High	Secondary	Nyanza	Kisumu East	kisumuboy@yahoo.com	Dennis Abo
33	Ahero Girls	Secondary	Nyanza	Nyando	aherogirl@yahoo.co.uk	Sr. Mary Gc
34	Raliew Sec School	Secondary	Nyanza	Rarieda		Vincent Ok
35	Rarieda Mixed Sec. School	Secondary	Nyanza	Rarieda		Anne Adun
36	Ramba High School	Secondary	Nyanza	Rarieda	Madera@yahoo.com	Mr. Morris .
37	St. Mary's Yala	Secondary	Nyanza	Siaya	Yalaschool@yahoo.com	Awiti John
38	Chianda High School	Secondary	Nyanza	Siaya	Chiandahs@yahoo.com	Mr. Vincent
39	St. Michael's High School	Secondary	Rift-Valley	Nakuru		Mrs. Asha
40	Nakuru Girls High School	Secondary	Rift-Valley	Nakuru		Mrs. Nancy
41	Loreto Nakuru School	Secondary	Rift-Valley	Nakuru	anjeluswamuhu@yahoo.com	Mr. Onyang
42	Malikui sec School	Secondary	Western	??		Mr. Nyonge
43	Makhokho Sec. School	Secondary	Western	Chavakali	dmulikwa@yahoo.com	Dunston M.
44	Mumboha High School	Secondary	Western	Emuhaya		Gloria Wan
45	Ebusakami sec School	Secondary	Western	Emuhya	Musakome@yahoo.com	Mr. Moses I
46	Nyangori High School	Secondary	Western	Hamisi	Zacomenda@yahoo.com	Hanyira Be
47	Jemovo Sec School	Secondary	Western	Hamisi		Florence W
48	Kibuk Girls secondary, Kimilili	Secondary	Western	Kakamega		Keziah Lub
49	Kakamega High School	Secondary	Western	Kakamega	kakamegahighschool@yahoo.com	Minishi Oliv
50	Bishop Sulumentu Girls	Secondary	Western	Kakamega	Srstella@hotmail.com	Mary Stella
51	Musingu High School	Secondary	Western	Kakamega	Litalidave@yahoo.com	David Lital
52	Moi Girls Kamusinga	Secondary	Western	Kakamega	moikamusinga@yahoo.com	Betty S. Kis
53	Lunza Secondary School	Secondary	Western	Mumias		Nicholas Ig
54	Chavakali Boys High School	Secondary	Western	Vihiga	chavakalishool@yahoo.com	Chris Alfre
55	Sigallagala Technical Training Institute	College	Western	Vihiga	SigallagalaTech@yahoo.com	Stella Oyier
56	Mbale High School	Secondary	Western	Vihiga	Mbaleschool@yahoo.co.uk	Gregory Ne

References

Farrell, Glen and Shafika Isaacs. 2007. *Survey of ICT and Education in Africa: A Summary Report, Based on 53 Country Surveys*. Washington, DC: infoDev / World Bank.
Available at <http://www.infodev.org/en/Publication.353.html>