

COMPUTERS FOR SCHOOLS KENYA (CFSK) EVALUATION REPORT

(Final Report)

"...Our understanding in other subjects has improved so much, auto-sum in excel has for example made mathematical calculations simpler. The writing of compositions has also become easier as grammatical and spelling errors are easily identified and corrected" (source: student respondent St Joseph Kakamega)

"...I have learnt some hardware skills; I can assemble the computer, open the system unit, and do a few things on the motherboard..." (Source: Students respondent Lwak Girls)

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ABSTRACT:

This is a report of the evaluation of the Computers for Schools Kenya (CFSK) programme. CFSK was registered in October 2002 and began operating as an indigenous non governmental organisation in January 2003. The programme delivered the first lot of computers in March 2003. Its main activity has been to collect, repair, refurbish and distribute donated computers to public secondary schools at a token fee to cultivate a culture of ownership among the beneficiaries. The major goal of the programme is to eliminate the high rate of computer illiteracy in the Kenyan society and to foster a computing culture among Kenyan youth. The project has been involved in the provision of technical support and computer maintenance services to partner institutions; ICT curriculum development; training and participation in the National ICT policy formulation and implementation.

The purpose of this evaluation was to provide an overview of CFSK's support and involvement among partner institutions with specific emphasis on the extent to which partners are involved in the design, implementation and monitoring of programme activities. It also sought to establish how CFSK has succeeded in building relationships with partner schools and what challenges it has encountered and lessons learnt in the process of implementation.

The evaluation employed both qualitative and quantitative methods of data collection and a total of sixteen schools were sampled in the eight provinces of the country.

The results of the evaluation revealed that CFSK has made key contributions to the ICT revolution in the Kenyan education system.

Over five thousand computers have for example been distributed throughout the country. This has been in addition to the training and sensitisation of more than three thousand (3000) ICT teachers, principals, representatives of Boards of Governors and PTAs about the value and practical ways of integrating computers in educational delivery. As a result, principals, teachers, BOG and PTA members have been empowered to initiate ICT project in their schools and manage them, hence clearly demarcating the roles.

CFSK has set up a system for distributing and maintaining computers donated to ensure that they remain functioning as efficiently. The system involves a close tracking of the

computers from the day it is donated when it is finally disposed of at the end of its lifetime in an environmentally friendly way.

CFSK has played a central role in challenging government to develop an ICT policy, which is now in place although not yet implemented. The organisation fully participated in the development of the national strategy for integrating ICT in the educational delivery. CFSK has also developed a practical need oriented ICT curriculum, which it is implementing to its partner schools.

The presence of the CFSK programme has encouraged schools to set up ICT infrastructure like computer laboratories, schools have also set up policies and systems for managing computers.

The evaluation established that CFSK has increased students' access to computers although the student to computer ratio in the sampled schools was still high, often not less than three students per computer.

While it was true that schools had some teachers to teach computer studies, there was evidence that the availability of teachers was below the required numbers. The majority of ICT teachers were also not qualified teachers. This was because government neither trains, recruits nor pays ICT teachers. The burden to hire and pay is left to BOGs. The evaluation observed that without the government involving itself in the training, recruitment and paying of ICT teachers, ICT projects in schools were going to become unsustainable.

The students emerged as the major users of computers in the schools while teachers were found to be using computers dismally - either due to attitude or absence of digital content. Students had a high level of competence in using computers.

A significant amount of learning was found to have resulted from the introduction of computers in schools. Some students could for example use more than three computer programmes including essential ones like: Ms Word, excel and power point they could also calculate, use the thesaurus draw and paint. In addition students had become more confident, proud of their schools because of computers and were no longer afraid of technology. This outcome demonstrated a clear balance in the way the programme addressed the cognitive, affective and psychomotor domains.

There was however some emerging negative aspects that were associated with the introduction of computers in the schools. Some students were for example introducing illegal foreign material like pornographic CDs and DVDs.

Internet connectivity was still a major problem in most of the schools largely due to costs. Unreliable electricity supply was also found to limit connectivity and the general use of computers especially in the more remote areas.

The relationship between CFSK and some regional education officials in particular the PDEs and DEOs was not very positive in spite of the efforts by CFSK to bring them on board through training and charging them with the responsibility to endorse schools before receiving computers. This was apparently due to poor communication between the centre, CFSK and the officers at the district and provincial level. The BOGs and PTA's on the other hand had a very good working relationship with CFSK.

Donors had a very positive opinion towards CFSK. They saw a lot of potential in the organisation and were willing to continue supporting it. And it was finally concluded that CFSK was still relevant to the Kenyan Youth and should be supported further.

CHAPTER I

1.0 INTRODUCTION AND PURPOSE OF THE CFSK PROGRAMME EVALUATION

CFSK and IDRC sought consultancy services to conduct the first major evaluation of the project activities. The major purpose of the evaluation was:-

1. To provide an overview of CFSK's support and involvement among the partner institutions. This will include an analysis of the extent to which:
 - Project clients are involved in design, implementation and monitoring of program activities;
 - CFSK has succeeded in building relationships within the member schools,
 - The challenges and lessons learned in the implementation approaches at the coordination and service provision levels.
2. To evaluate the objectives, performance and to the extent possible, the outcome of the program;
3. To what extent is the program still relevant to the Kenyan Youth?
4. To make recommendations for further support from CFSK and partner institutions to their beneficiaries
5. To document the CFSK model indicating its evolution, key characteristics, its uniqueness, key achievements and challenges associated with it and important lessons for others to learn.

1.1 Background to CFSK

Computers for Schools Kenya (CFSK) is a non-governmental, non-profit organisation which collects, repairs and refurbishes donated computers and distributes them at a small fee to Kenyan public secondary schools. This is done in cooperation with Computers for Schools Canada (CFSC), the Ministry of Education Science and Technology (MOEST) and other private and public organisations. CFSK was registered as a Non Governmental Organisation in October 2002 and began operating in January 2003.

CFSK's vision is to help students in Kenyan public schools to gain greater access to computer technology and thereby establishing an information-rich Kenyan society, actively involved in sustainable national development. The mission is to provide Kenyan youth with access possibilities to information and communication technology, and to help them develop the skills

needed to succeed in the current knowledge-based economy. CFSK aims to eliminate the high rate of computer illiteracy in the Kenyan society and to foster a computing culture among Kenyan youth with an aim of stimulating and encouraging creative learning and internet research skills for educational purposes. In all its endeavours, CFSK hoped that a strong background in ICT would create employment opportunities and enable school leavers to become competitive, employable and marketable in the contemporary ICT-based economy.

1.2 CFSK's primary activities

CFSK outlined ten key activities at its inception including:

1. Sourcing quality affordable pre-owned PCs;
2. Continuously maintaining and supporting the deployed through preventive and curative interventions;
3. Curriculum and resource materials development;
4. Training of trainers and educational administrators;
5. Increasing internet connectivity and access;
6. Management of electronic waste;
7. Policy and advocacy work
8. Evaluation and certification;
9. National capacity building through volunteer and internship programmes;
10. Pioneering new and appropriate information and communication technologies;

1.3 CFSK programme implementation

The CFSK programme has been implemented in three phases namely; phases one, two and three. The first phase covered the period between January 2003 and March 2004. The main objective of the phase was two fold: a) to provide evidence that CFSK could offer significant benefits to Kenya's future workforce; and b) to establish a sustainable model for provision of computers to the CFSK programme schools, based on the experiences generated from the initial implementation.

The second phase aimed at the identification and preparation of twenty schools to participate in the CFSK program; the training of interns, ICT teachers, principals, BOG and PTA members. It also entailed the receiving and refurbishing of 400 computers (200 from Digital Links International and another 200 from Barclays Bank of Kenya), and developing a distribution mechanism for the computers. Fifty schools were also to be identified, selected and prepared to participate in the third phase. Finally, the programme aimed to secure more computer

donations and financial support for the project under the third phase.

Phase three of the project was meant to consolidate the results and approaches of the earlier phases with a specific intention to:

- Train school principals and IT teachers to benefit from the programme,
- Train personnel from Uganda to enable them start Computers For Schools Uganda
- Train CFSK staff in content development
- Pilot project on thin-client technology
- Pilot project on wireless connectivity
- Offer administration and technical support allowances for end of phase 3
- Provide volunteers' allowances for the last quarter of 2004
- Develop a business plan
- Evaluate the project activities
- Publish on project process and progress

This evaluation among other things made deliberate attempts to examine the process of and extent to which the goals of this phase have been addressed.

Results of earlier reviews

Phase 1 of the project was evaluated in November-December 2004 seeking to establish what CFSK's partner institutions thought of the programme. In January 2005, an investigation of the factors affecting the CFSK curriculum implementation in the partner institutions was also carried out. The investigation established that there was solid support and acceptance of CFSK activities by principals, teachers and students. All principals were for example willing to renew their contracts with CFSK to maintain school computers, and the students were willing to take CFSK examinations in computer studies (Kivuva/Mbaabu, 2002)

Many schools were found willing to embrace CFSK policies and procedures in the running and management of ICT in public institutions. Nonetheless, several challenges were raised by the evaluation. Key challenges included:

- difficulty in paying the three thousand shillings (Ksh 3000/=) maintenance fee per a computer,
- inadequate hardware and software,
- inadequate teaching and learning resources,
- poor performance in examinations and poor setting of examination questions,

- high mobility of IT teachers from the schools,
- breakdown of computers during examination period, and
- conflict in implementation of CFSK and KNEC computer studies curricula.

The results of these reviews attested to the potential feasibility and effectiveness of the programme. This was demonstrated by several positive results registered in the implementation of the project activities. The rapid expansion of CFSK services and products is for example a good signal that CFSK is moving towards a positive direction. To sustain this positive trend, CFSK has embarked on a drive to build the capacity of principals, IT teachers, Boards of Governors and Parents and Teachers Associations to provide services with increasingly minimal CFSK intervention. The aim is to lay a foundation for future sustainability of the activities and as such creating a smooth exit strategy for CFSK.

1.5 Summary of CFSK'S achievements by the time of the evaluation

Documentary evidence shows that CFSK succeeded in achieving a number of its goals and targeted activities.

Computers secured and refurbished at least 5000	
Teachers, principals, Board and PTA members trained 3900	
Schools recruited into the programme 209	

Number of computers distributed by CFSK to beneficiary Institutions from 2003 - May 2006:

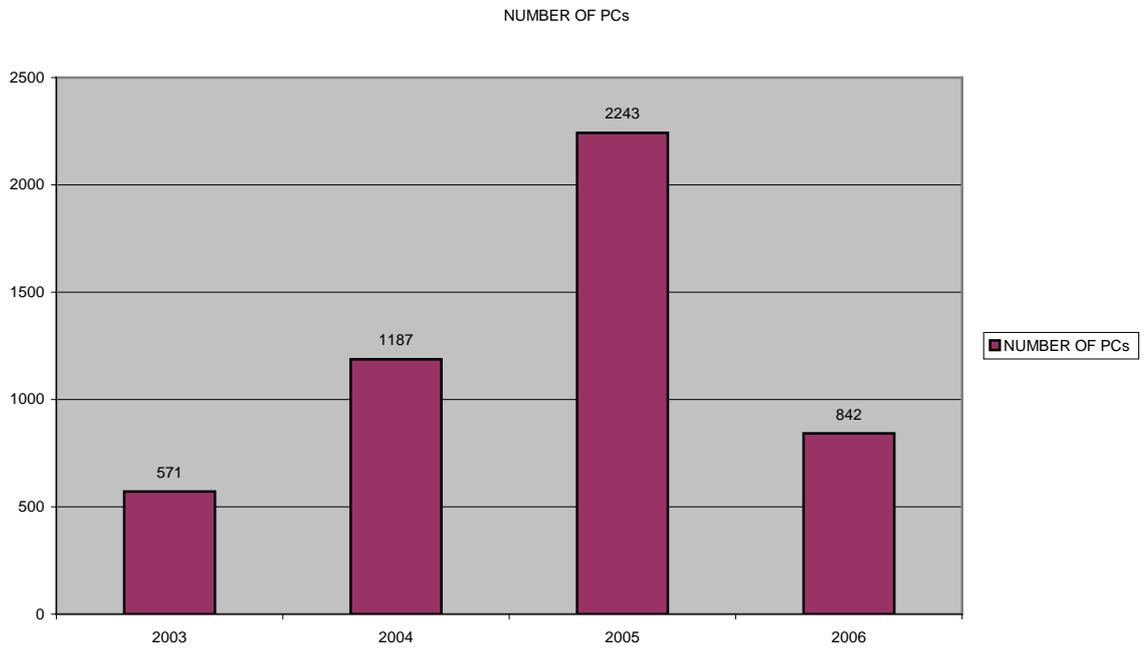


Figure 1: No. of PCs distributed by the time of the evaluation

As figure 1 shows, the numbers of PCs donated to schools has been on the increase since the inception of the programme. The organization projected to donate computers to 150 schools, each school get 20 PCs which translates into 3000 PCs to be donated by the end of 2006. On average, the organization delivery of computers and related services has been growing at the rate of 63% since 2003.

CHAPTER II

2.0 METHODOLOGY

2.1 Evaluation process and procedures

This evaluation used a mixed approach that involves both qualitative and quantitative techniques of data collection. The main goal of the evaluation was to establish key issues emerging from the implementation of the CFSK programme and its relationship with project partners. It sought to generate useful lessons from the project and key insights on the integration of computers in school activities from school heads, ICT teachers, students, BOG/PTA representatives, Ministry of Education Senior Officials and other project partners.

Whilst the evaluation applied both quantitative and qualitative data collection, methods and techniques, the ultimate purpose was not to make statistical generalizations but rather to develop an assortment of useful experiences, lessons and insights that can inform the future direction of the project.

2.2 Sources of data

This study obtained data from secondary as well as primary sources. Data were generated from a cross-section of people at different levels in their respective institutions in the country.

Key sources of data included:

CFSK as the project implementing agency

- CFSK project documents (baseline report, project proposal, business plan, mid-term review report, monitoring reports and National ICT policy.

- CFSK project staff including the director, managers, network administrators, volunteers and board members.

At national level, the following key informants were interviewed:

- ICT manager at the Ministry of Education Headquarters
- Programme coordinator, NEPAD e-schools project
- Director of education in the MOEST
- Deputy Director, Kenya Institute of Education
- CFSK's partners like IDRC and Safaricom

At district and provincial level, key informants included:

- Provincial Director of Education,
- District Education officers,

At the school level, key informants included:

- Secondary schools principals
- Directors of community centres

- IT teachers
- Students
- School Board chairpersons and/or Chairpersons PTAs

2.3 How the work was done

2.3.1 *The evaluation team and training*

A team comprising of a co-investigator, a team leader and eight research assistants was mounted. The co-investigator and team leader were lecturers with postgraduate qualifications and research experience. The eight research assistants were University graduates with qualifications in social sciences, computer science and information technology.

The team members underwent a three day training on the key concepts and principles of evaluation. They were also introduced to the evaluation tools which they reviewed as part of the training and orientation process. The team collectively reviewed all the draft evaluation tools and produced a new set of revised ones. A pilot study was done by the entire team in Nairobi's Pangani Girls and Aquinas High School as a practical orientation for the research team on what was expected during the evaluation process. The team brainstormed on the pilot study data and the tools were validated as sufficient except for few rearrangements of the questions. Some of the pre-test data was found to be of good quality and was thus integrated with data from other schools.

2.3.2 *Sampling*

Although it had been planned that data would be collected from five provinces, in the end, the team decided to visit all the eight provinces to cater for the unique characteristics of CFSK's different partner schools in the different provinces all of which had their unique qualities. The sampling of the schools was centrally done as part of the preparation process to ensure that the sampled schools were notified in advance about the exercise and the teams' expectations. This strategy worked well and made the exercise quick.

Sixteen (16) schools participated in the study comprising 4 mixed, 4 boys only, and 8 girls' only schools. All eight (8) Kenyan provinces participated in the study and the distribution of schools per province was: Central (2), Nyanza (2), Rift Valley (1), Nairobi (3), Western (1), Eastern (3), North Eastern (1), and Coast (3).

2.3.3 Data collection tools

Several research instruments were developed and used to generate data from the different respondents. The instruments included: students questionnaire, teachers' questionnaire, principals key informant interview guide, ICT checklist, focus group discussion guide and key informant interview guides for stakeholders.

2.3.4 Questionnaires

Questionnaires were used to gather data from the students to generate basic facts on ICT and its application in schools. Ten students per school (except for those schools where students were found on holiday) were allowed to fill the questionnaires without guidance, but care was taken to ensure responses to all questions. The questionnaire comprised of both open and closed-ended questions.

The questionnaire was the main data collection tool for this study since it took the respondent through diverse aspects of the CFSK project. In total 138 students responded to the questionnaire. Alliance Girls and Naivasha girls students did not fill the questionnaires since they had closed school.

Focus group discussions

Students' focus group discussions were used to generate qualitative views and insights from groups of students on ICT issues at school. The focus group discussions were expected to enable the students to speak freely about their local contextual issues, challenges and possible solutions.

Interviews

In this project, interviews were used as an additional source of data and for triangulation purposes, to verify the data collected from other sources. Both semi-structured and unstructured interviews were used to gather data from school principals, computer teacher, BOG/PTA members, the PDE, DEO and other senior ministry officials.

Key Informant Interviews

Different key informant interview guides were developed for the different key informants at the national level. At the provincial/district levels, a key informant guide was developed with different sections, to cater for the different categories of informants. An in-depth interview guide was developed to generate in-depth data from the CFSK staff.

2.3.5 Administration of the tools

Although roles kept changing, the teacher questionnaire, the principals' interview and the focus group discussions which required more expertise were conducted by the more experienced researchers, leaving the students' questionnaire and the ICT checklist to the less experienced assistants.

A field note book and a journal were used to note down the observations made during the interaction processes with the research respondents and institutions. The observations were not merely on what they observed, but also a description of the different settings of the project process. The data gathered using observation was used to triangulate data from other sources and methods.

2.4 Summary of Data Collected

- Students' questionnaires: 138
- Students focus group discussions 6
- Teachers' interviews 14
- Principals' interviews 11
- District officials' interviews 8
- CFSK staff interviews 7
- Ministry of Education 3
- Kenya Institute of Education 1
- IDRC 1
- Board Members 2
- Safaricom 1

2.5 Data not collected

The team was not able to collect data from any teacher training college and some of the partners like Kenya Airways. In one of the schools it was not possible to interview the principal, while in another school a deputy principal was interviewed instead of the principal. The team was not able to collect data from the students of Alliance Girls' High School and Naivasha Girls because the schools had closed for holidays before the planned visit to the school.

2.6 Challenges encountered

The study as a whole went on well with limited challenges. The fact that schools and other partners were informed in advance enabled the team to find the schools ready and available for the exercise. Nevertheless the fact that the study was conducted towards the end of the school term posed a key time constraint to the extent that the team was not able to collect data from students in two of the schools.

For the same reason mentioned above the team was also not able to conduct focus group discussions in all provinces. Because the evaluation was done in the weeks schools were involved in the end of term examinations, the team was only able to access limited numbers of students and often for a limited period of time in a number. Under such circumstances, the team was confronted with a challenge of deciding which instruments to administer to the few students available to them. The questionnaire was thus often used as the main instrument to generate information from the students.

2.7 Document analysis

Documents' analysis was guided by a checklist outlining the required information. Secondary data was gathered from CFSK project documents (baseline report, project proposal, business plan, mid-term review report, monitoring reports and national ICT policy document). These secondary sources were expected to provide basic information about the local decisions and background, or activities and processes.

2.8 Data analysis

Data from questionnaires was entered using the SPSS programme to generate the relevant frequencies and inter-relationships. Qualitative data from interviews, observations and focus group discussions was manually analysed to identify the key issues and emerging themes.

CHAPTER III: THE CONTEXT

3.0 Introduction

As stated in the background, CFSK is a registered non-governmental and non-profit organization founded in 2002 under the NGOs act and started its operations in January 2003. CFSK has had to operate in a context which is unique and challenging. The uniqueness is based on:

- ICT in schools which is CFSK's core business is not only a topical issue in education but also in the broader development arena both at the local and international scenes. This makes actors in that area important in the ongoing process of global social, cultural, economic and political transformation.
- CFSK has operated in an environment without a national policy framework to guide CFSK's operations which has made the context indeed challenging. It has not only limited the organisation's capacity to acquire the necessary support from government, but also to chart out a strategic direction and pursue it with any level of certainty.

3.1 The current education system

The Kenyan formal education system consists of 3 years of pre-primary, 8 years of primary education, 4 years of secondary education and 4 years of university education (3-8-4-4). The enrolment has been on the increase especially since the introduction of the Universal Primary Education in 2003. There are 17,864 public primary and 3676 secondary schools respectively. The number of private primary and secondary schools in the country is also on the increase currently standing at 1909 primary and 521 secondary (UNESCO 2006). Whilst the number of schools and children has been on the increase, the curriculum has remained largely traditional. The quantitative change has not had a corresponding qualitative change at the level of methods and content. This has affected the use of ICT in education, with computer studies taught more as an examinable subject and even where they exist computers are never applied by teachers as pedagogical tools to respond to the pedagogical and logistical challenges of the day. The number of students sitting for the final examination in computer studies is still very low compared to other subjects. In 2005 for example, the results of the final high school examinations indicated that only 3404 registered for computers studies out of the 256,825 students who completed the secondary cycle that year (Director of Education Personal communication).

3.2 School management

The management of schools is basically in the hands of the Board of Governors (BOGs) and Parents Teachers Association (PTAs). These are statutory bodies which work hand in hand with the school principals in the management of schools on behalf of the Ministry of Education Science and Technology (MoEST). The members of the BOGs are drawn from the public and represent specific interests of the local communities. The BOGs are appointed by the minister in charge of Education and serve for three years after receiving recommendations from the selection panel. The BOGs are responsible for hiring and disciplining teachers and act as managers at school level.

The PTAs on their part are statutory bodies formed by representatives of parents from all classes. They are elected by fellow parents each year to replace the outgoing parents. PTAs are recognized by the MOEST and play a major role in the funding of the school projects. However, PTAs can only raise funds, which they are not mandated to account for. This sometimes leads to conflict of interest in schools management.

3.3 Computer Studies Curriculum

Kenya Institute of Education (KIE) is the government organ charged with the responsibility to develop and oversee the implementation of school curricula at the primary and secondary school levels in the country. KIE developed a curriculum for computer studies to be taught in all Kenyan schools. This curriculum is examined at the end of the secondary school cycle. The curriculum is designed to teach computer studies as an examinable subject hence adopting the traditional transmittal pedagogical approach. The curricula has been criticised for not only being too theoretical, but also having no obvious interest to integrate computers as a pedagogical tool for more effectiveness and efficiency in learning.

CFSK on its part developed a curriculum which it tried out in schools and has been trying to rollout in its partner institutions. There are several differences between the two curricula. Apart from the fact the KIE curricula is examined nationally at the end of the secondary school cycle, in terms of content, the government curriculum has been described as not only theoretical but also heavy, basically 'imparting' knowledge with apparently no serious consideration on its application in the real world of work. On the contrary the CFSK curriculum is organised in packages which are examined once they are completed by the students. The CFSK curriculum emphasises practical application

of what has been studied. Theory constitutes only 25% of the content with practical work covering the remaining 75%.

As one would expect in such a situation, there has been tension between the two curricula, with CFSK criticising the KIE curriculum as theoretical and blind to the practical needs of the current Kenyan society. On its part KIE has not only despised the professional disposition of the CFSK curriculum, but also outrightly refused to recognise it and the CFSK examinations based on it.

According to one of the officials at KIE, the refusal to recognise the CFSK curriculum was not necessarily in bad faith, but rather based on a professional disposition. He argued that there are established procedures for developing and implementing a national curriculum, putting into consideration a broad range of professional and logistical issues. KIE was yet to be convinced that the CFSK curriculum considered all the necessary steps and procedures required for curricula to be accepted.

Listening to the different points of view one could make two important conclusions thus:

a) there was an obvious need to harmonise the two curricula to ensure effective delivery of computer knowledge and skills; b) there was no option but for CFSK and KIE to work together to come up with a curriculum, which is not only acceptable to all the stakeholders, but also takes advantage of each partners' strengths and capabilities i.e. KIE needs to learn from CFSK's experiences as a practitioner with a philosophy of practice and orientation towards work. CFSK on the other hand needs to learn professional procedures.

3.4 Attitudinal issues

The mood and attitude towards the use of ICTs in education particularly as an educational tool is drastically changing. This is characterised by among other things the drafting of the national policy on ICT and the establishment of the E-Government. The views of different officials e.g. the Director of Education, the NEPAD E-learning Project Coordinator and the ICT Officer of Education in the Ministry showed clear support for ICTs. There was no doubt that it was the government's desire to integrate ICTs in education and it was a matter of time and resources still standing in the way.

The positive nature of this change notwithstanding, integrating ICTs in education still poses a great challenge to Kenya as a

nation. The integration of ICTs in the entire education system for example does not only need change of attitude regarding national priorities, but also a certain level of willingness, commitment and capacity to invest in infrastructure and human resources at different levels. Without a conscious move towards this the new attitude may only become a painful

3.5 Government efforts/political will

While Kenya does not rank among the poorest of the poor countries in Africa, the truth is that a number of schools and communities are poor. Several school principals for example mentioned that their schools had limited capacity to meet the cost of maintaining computers. This scenario was according to some of the principals, compounded by government policy which prevents schools from charging additional fees. As such, the annual maintenance fee of 3000 Ksh levied by CFSK per computer remains a challenge to many schools.

To respond to some of these challenges of limited capacity, the government has put in place a plan for integrating ICTs in the education system. The programme involves equipping three schools in each of the districts with twenty computers. An ICT trust fund has also been put in place to support initiatives like the one by CFSK to equip schools with computers and to develop the related capacity. In a related development, there is an initiative by NEPAD to help schools integrate ICT in educational delivery. Four hundred schools are expected to benefit from this initiative.

The above interventions notwithstanding, a major gap still exists given the extent of the need. Out of the 3676 public secondary schools, only 209 schools have so far been reached by CFSK). This makes CFSK as a pioneer organisation even more indebted than ever towards the fulfilment of its dream now that the policy environment and political will are in place. According to the director of education, there are already at least six hundred schools in the country using ICTs in education which is a good start but still fare below what one can refer to as a satisfactory level.

3.6 ICT policy

Until recently there was no ICT policy in the country. The government came up with a National Information and Communications Technology Policy (ICT) which was published in January 2006. The government policy voices the government's commitment to Human Resource Development in ICT and to support Electronic learning.

The government outlines a human resource development plan in ICT which covers five different areas that are very relevant to the work of CFSK:

- the promotion of ICT in education at primary, secondary, tertiary and community levels and equipping the teachers/trainers with the requisite skills,
- setting up a framework for evaluating and certifying ICT training programmes,
- developing a mechanism for attracting and retaining skilled human resources
- establishing networks for sharing training resources (GOK, 2006)
- developing strategies for supporting research and innovation;

The first two areas are particularly important with regard to CFSK's vision and mission

The policy also recognises the gap created by the absence of policy on e-learning and highlights the need for government to among other things:

- provide affordable infrastructure to facilitate the dissemination of knowledge and skills through e-learning platforms;
- promote the development of content to address the educational needs of different learning institutions and at levels;
- create awareness of the opportunities offered by ICT as an educational tool in the educational sector;
- facilitate the sharing of e-learning resources
- promote centres of excellence to host, develop, maintain and provide leadership of better learning resource and strategy
- exploit e-learning opportunities to offer Kenyan educational programmes for export; and
- integrate e-learning resources with other existing resource (GOK 2006).

The government also commits itself through the policy to work towards creating a universal access to ICT. This will be through provision of resources to the sector, requisite infrastructure, and incentives to service providers. A universal service fund, creating awareness, and developing knowledge sharing networks are highlighted as key strategies for universalising the access to ICT in the country.

The above policy issues and others not mentioned here provide the kind of policy framework to inform CFSK's course of action, and go a long way in providing the long needed framework.

In addition to the policy mentioned above, an ICT in Education Strategy document has been developed and CFSK has been a key player in the process.

3.7 Availability of ICT Teachers

There is no direct specialised training for ICT teachers in the Kenyan teacher training institutions. The Kenya Teachers' Service Commission (TSC) itself does also not recruit computer teachers. This leaves the entire burden of sourcing and recruitment of ICT teachers to the Boards of Governors of schools. This coupled with the high demand of ICT professionals in different sectors within the country, has contributed to the limited availability of computer teachers in the schools. The problem points again at the hitherto policy gap which hopefully will be addressed with the implementation of the ICT policy since it is one of the areas mentioned.

3.8 CFSK's internal context

An organizational assessment was carried out in 2005. The assessment established that CFSK has a great potential in spite of the identified constraints. The assessment identified lack of political will and capacity to turn the identified constraints into strengths to support the organization's growth as the outstanding challenges facing CFSK. The organisation was also found to be more concerned about engineering organisational growth as opposed to responding to emergent challenges. This is not a good practice as it can easily lose sight of the contextual realities and may easily transform the challenges into conflicts and potential drawbacks to the organizational development.

The assessment also established that, although CFSK had put in place the necessary statutory documents like the Constitution, Finance and Administration manual, and Comprehensive Job Descriptions, they were largely in their formative stages with no major impact on the character of the organisation yet. Key organizational and operational guidelines were both lacking and those in place were not being effectively implemented.

The organizational structure of CFSK was found to be weak in articulating the various roles and responsibilities of the organization and even where they were well articulated the implementation was not sufficient. As a result, the rules and regulations in key areas were based on ad-hoc decisions and

sporadic reactions of management. The performance of the Board was also found inadequate in key areas of its responsibilities, including policy development and articulation of organization strategic direction. This accordingly led to unclear organizational identity and conflicting strategic focus.

There was inadequate structural development and institutionalization, which led to unclear definition and differentiation of roles and responsibilities within the organisation. This was coupled with insufficient institutional and programmatic development due to inadequate professional and management skills within the management. Organizational guidelines were also inadequate with limited or no operational policies, systems, procedures and documentation of organizational memoirs.

To respond to some of the above issues a study on organisational strengthening was commissioned to identify and establish the gaps in the organizational structure and establishment with a view to establish staff training and non-training needs, and respond appropriately.

3.9 The current structure

CFSK has restructured itself to respond to the concerns raised by the above-mentioned review. The board remains the top policy making organ of the organisation. The executive director is the top executive of the organisation assisted by a management team, which comprises of the deputy director and the respective heads of departments (see appendix).

CFSK has seven departments namely: Capacity Building, Finance and Administration, Marketing and Public Relations, Communication and Resource Mobilisation, Technical Services, Policy and Advocacy, and Research Monitoring and Evaluation. The capacity development manager oversees the training, examinations, content development, communication and resource mobilisation. While one would appreciate and commend the efforts towards restructuring, it would also be of great importance to look beyond restructuring positions first and lay greater emphasis on building the capacity of personnel both in skills and attitudes to match with the demands of the new structure and organisational expectations.

CHAPTER IV

4.0 SCHOOL PROFILES

4.1 Description of Schools

The sixteen schools sampled for this study are spread across the eight provinces of the country. The coverage provided an opportunity to explore the diverse socio-economic, geographical and demographic aspects of the partner schools. The distance between the sampled schools and CFSK offices in Nairobi ranges from 15km (Lenana High School) in Nairobi to 500km (St. Charles Lwanga) in Mombasa.

All schools sampled for the evaluation were public schools. This was because CFSK works with public secondary schools spread across the country. Public schools are those which receive support from the Ministry of Education Science and Technology (MOEST). Government support to schools is in terms of staffing, teacher development, bursaries to needy students and physical development through CDF funds. The school population ranged between 180 - 800 students

4.2 Schools ICT Infrastructure

For ICT to be integrated in schools, different forms of infrastructure are required. These include computer laboratories (the buildings), furniture and a reliable electricity/power supply among others. CFSK set the existence of computer lab and power supply, willingness of the schools' administrators to attend CFSK training workshops, commitment to a long term self sustainability agenda and local community support as the criteria for working with any school.

Lack of reliable supply of electricity in schools located in remote areas was often mentioned as the greatest challenge towards ICT integration in secondary schools in Kenya. The evaluation established that schools not connected to national gridlines were incurring huge expenses in terms of maintenance and fuelling of generators. Actual expenditure figures on electricity were not available but schools spent money to purchase and maintain generators. Such costs had a direct impact on the accessibility to computers and duration of use by students.

In terms of social infrastructure, CFSK has mustered overwhelming support from Boards of governors, Parents and Teachers' Associations, old boys' and old girls' associations and even individuals from school neighbourhoods. This has helped the

organisation to develop the necessary confidence and motivation to pursue its goals.

4.3 Computers available in the sampled schools and their source

The evaluation also tried to establish the number of computers in the schools and their sources. The purpose was to find out whether there were other partners providing computers to schools apart from CFSK. Four major sources of computers in the schools were identified. They included CFSK, the schools, private companies and local politicians as table 1 shows.

Table 1 Number of computers per school and their source

Name of School	From CFSK	School	Private sector	Local politicians
Murera SS	20	0	0	0
Kangeta Girls	20	1	2	1
Ndalani SS	20	12	0	0
Moi High	20	1	0	5
St Joseph Kakamega	20	3	0	0
Garissa High	25	0	0	0
Lwak Girls	25	28	0	0
Naivasha Girls	20	0	0	0
Burieruri	20	1	0	0
St Charles Lwanga	20	0	0	
Our Lady	20	0	0	0
Aquinas	20	0	0	0
Starehe Girls	20	0	0	0
Alliance Girls	20	10	0	0
Pangani Girls	20	10	0	0
Lenana High	20	15	0	0

Table 1 also reveals the important role CFSK and school administration are playing in equipping schools with computers, compared to other stakeholders.

4.4 Student-computer ratio

The computer/student ratio calculated out of the total school population appeared very big, at times as big as 1:50, but calculations based on the number of students in a class showed a more realistic ratio often ranging from 1:2 - 1:5. Apart from a few isolated cases where schools had received additional computers from other donors, computers found in schools were those donated by CFSK, which demonstrates the important role the organisation has played in equipping schools with computers.

4.5 Adequacy of computers in schools

The evaluation also sought to establish whether the computers in schools were adequate. Information on adequacy was generated through interviews and questionnaires with principals, teachers, students and direct observation of the concrete situation in the different schools.

4.5.1 *Students' views on the adequacy of computers*

By seeking students' views on how well equipped with computers their schools were, it was believed one would be able to establish the adequacy of available computers in relation to the numbers of users.

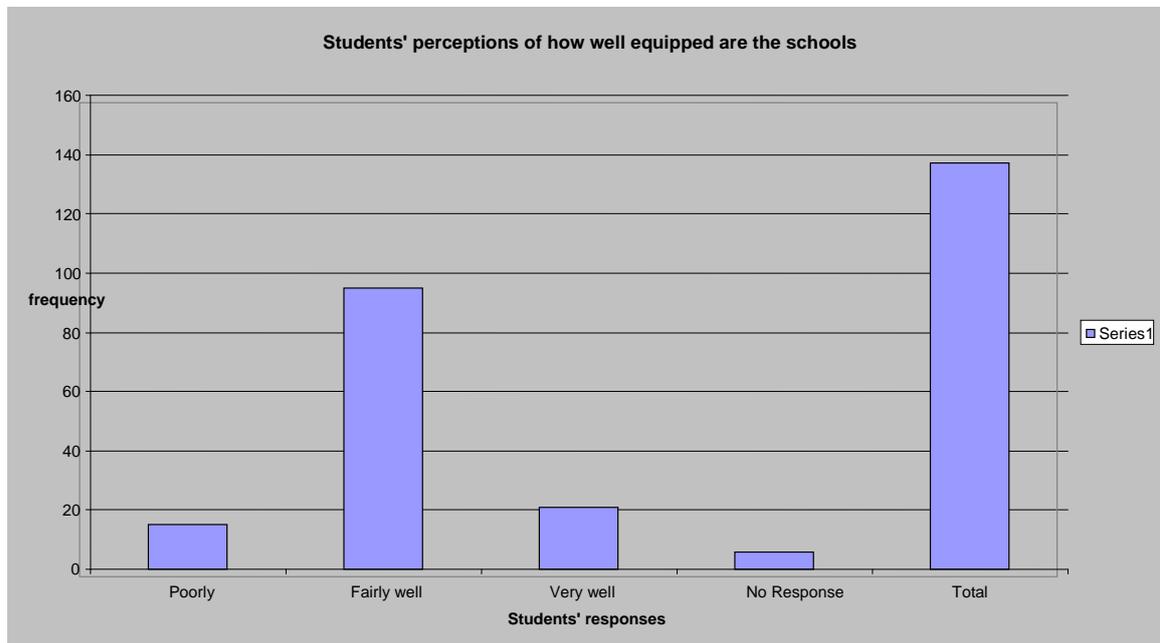


Figure 2: Students' perceptions of how well equipped are the schools

The majority of students from different schools described the level of equipment as "fairly well". Students who saw their schools as well equipped gave a number of explanations for their judgement including the ratio of computers to students which was very low, often not more than two students per computer; and the availability of key facilities like printing and scanning. Other indicators included well furnished and secured computer

laboratories, internet connectivity, reliable electricity supply and timely maintenance and repair of computers.

Efforts to establish what students actually meant by describing their schools as poorly equipped with ICTs revealed several important grounds upon which they based their assessment. They specifically mentioned obsolete software installed on the computers, poor quality computers which they qualified too old, slow in booting and only able to use a few programmes. Some computers were infected by viruses, lacked internet connection, and the general environment in the laboratories was seen as not conducive. Computers for example lacked dust covers; the rooms often lacked air-conditioning and were congested. Lack of computer-related accessories and equipment like printers, plotters, joysticks, scanners, light pens, MQR, MCR, microphones, speakers, CD-ROMs, and flash disks in a number of schools were other indicators of inadequacy according to students.

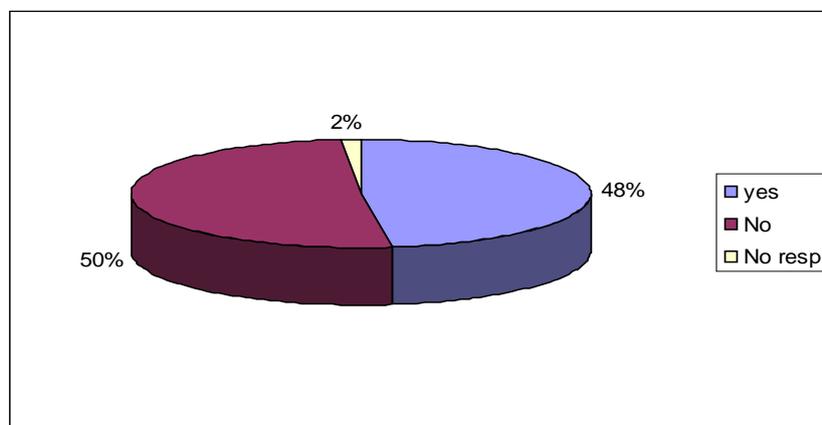


Fig. 3 Is the ratio of computers to students appropriate?

The question as to whether the number of computers in the schools was adequate was followed by another question for teachers and students to project how many computers schools needed to be adequately equipped. The numbers of computers projected are presented in the charts below. Only one school (St Joseph Kakamega) said that the computers were adequate.

Students' comments on the appropriateness of the student-computer ratio in the school confirmed the computer inadequacy claim. The majority of students 70(50.7%) felt that the ratio was inappropriate although 66 (47.8%) of the students said that the ratio was appropriate.

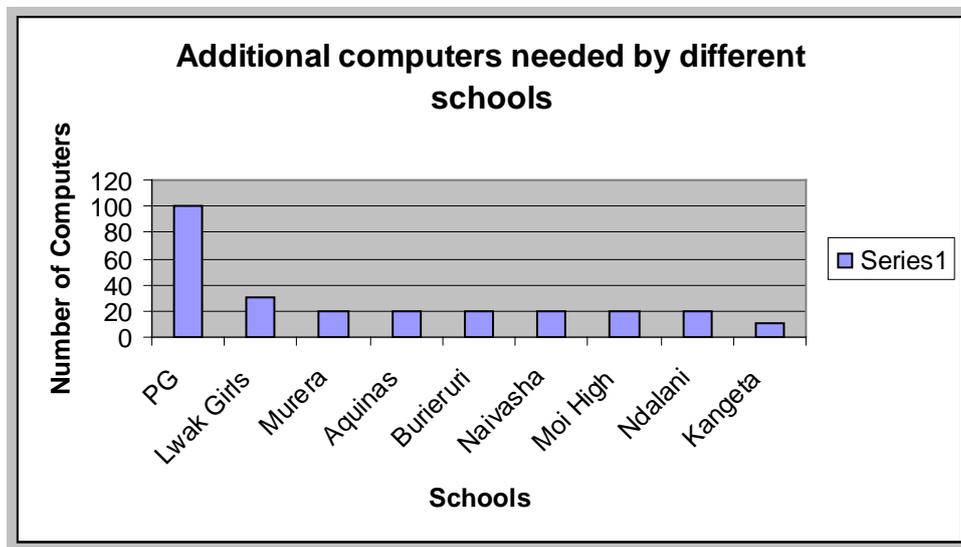


Fig. 4 showing additional computers in some of the schools

4.6 Access to computers in schools

Students were asked whether they were given adequate access to computers at school. Access here implied the freedom to use the computers whenever they wanted. Results from the students' questionnaire showed that 88 students (63.8%) had adequate access to computers, but 47 students (34.1%) said that they did not have adequate access. Those with limited access explained that they were only restricted to practical periods and not any other times because of the limited number of computers.

Data from students' focus group discussions and teachers' interviews indicated that there were variations in terms of access to the computers in different schools. The variations were dependent on among other things: the ratio of students to computers, the status of computer studies in the school (whether optional or compulsory), power availability and school policies governing the use of computers as explained below.

In some of the schools, those students not taking computer studies were not allowed to use the computers. Form one students were found to be the major victims of crowding in most of the schools. This was because form one classes were often larger than the rest of the classes. They were as such compelled to share computers between 3-5 students per computer in almost all the sampled schools.

There was a unique problem in one of the schools where only twelve computers could be powered at any particular moment, rendering others idle. The actual cause was not clear but staff pointed at two possible causes namely: a possible defect in the

networking system or inadequate power supply. The teacher in charge could not explain it either.

The issue of proximity to classrooms was also investigated as an indicator of potential accessibility. The majority of students 73 (52.9%) mentioned that the computers were located more than ten minutes away from their classrooms, but 59 (42.8%) students could access computers within five minutes. The distance from classes to the computers could thus not be seen as a problem to access.

4.7 Managing Access

The limited number of computers available for students compelled schools to come up with computer access schedules that would ensure equitable utilisation of the facilities by the different students. In all the schools, the teacher in charge developed an access roster to cater for the different classes. Some schools restricted access and utilisation of computers to those students taking computer studies. Other schools decided to restrict access to times allocated to practical sessions. Unfortunately the arrangements were often interpreted by students as an unnecessary hassle to limit the badly needed access. The limitations notwithstanding, it was gratifying to see that all schools had some system to ensure that computers were accessed by students who needed them.

4.8 State of computers in schools

The evaluation also set out to establish whether the computers in the schools were in a good working condition. This question was meant to gather views from students on the quality and state of computers in schools. Of the 100 students who responded to the question, the majority (69) responded that all computers were in good working condition, (21) students said they were not working and 10 students said some computers were working. These responses seemed to support the view that majority of the computers in schools were in a good working condition.

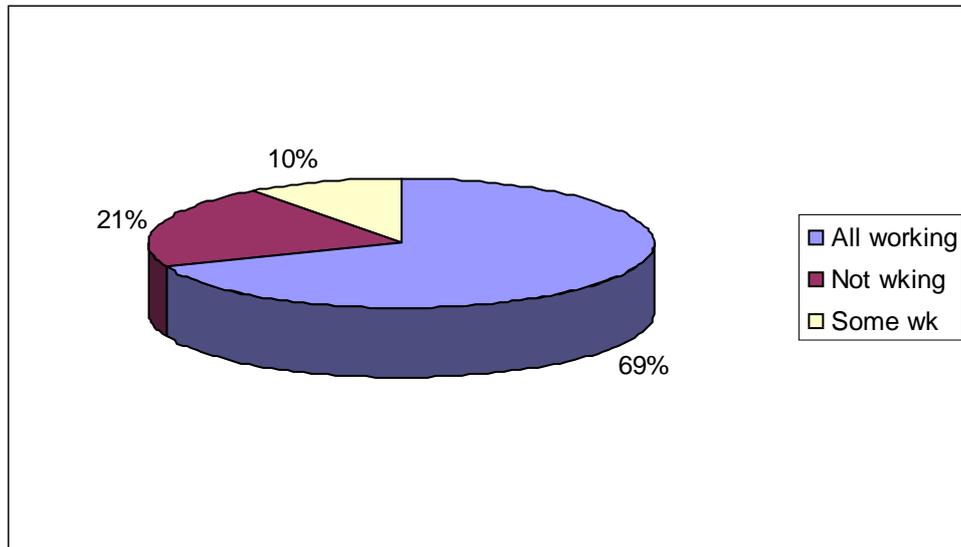


Fig 5 Working conditions of computers

In schools where all computers were reported to be in a good working condition (69%), the good working condition was attributed to CFSK and the schools' vigilance in the maintenance. Specific reasons included frequent/timely maintenance by both the school and CFSK, strict regulations for keeping the environment of the computers clean (labs were always kept clean and computers covered) one respondent described their school laboratory thus "we have a well arranged computer laboratory, inside the room is clean, computers are covered well and protected from the dust, the room is painted which qualify it to be attractive and conducive and every month the computers are checked and repaired where necessary." The presence of knowledgeable computer studies teachers and deliberate efforts by schools to have reliable power supply also emerged as key contributing factors.

The students' perception of a working computer emerged as an interesting point to note. To students, often a computer was considered 'not working' when it took long to boot, had viruses, some letters on the keyboard were not functional or when the hard disk was faulty. This perception brought another dimension to the whole concept of a working or non-working computer. It was realised that many computers, which students condemned as not working, were actually functional with minor technical problems.

4.9 History of computer use by students

The evaluation sought to establish when the students were first introduced to computers. The purpose was to establish how long they had been exposed to computers and this is illustrated in figure 6.

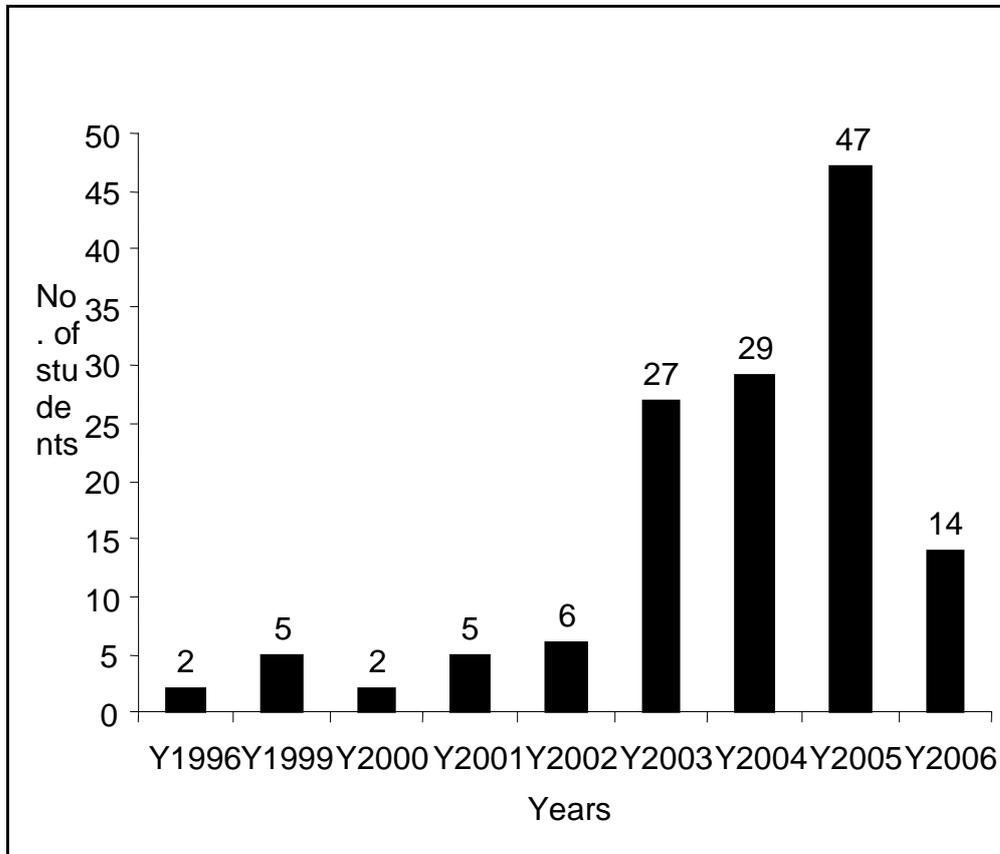


Fig. 6 when students started using computers

The findings indicated that 85% (117 out of the 137 who responded to the question) of the students had actually been introduced to computers in the last three years i.e. from 2003 onwards which coincides with when CFSK began operating in the schools. This is further confirmed by the fact that more than half of the respondents obtained computer skills from their current schools, after using computers provided by CFSK and some of the teachers trained by the same organisation.

4.9.1 Students first contact with computers

The students were further asked to state where they were first introduced to computers. This question was meant to establish students' history of using computers and what possible role CFSK could have played in it. It also aimed to explore which other providers were helping students to access computers for educational and other purposes.

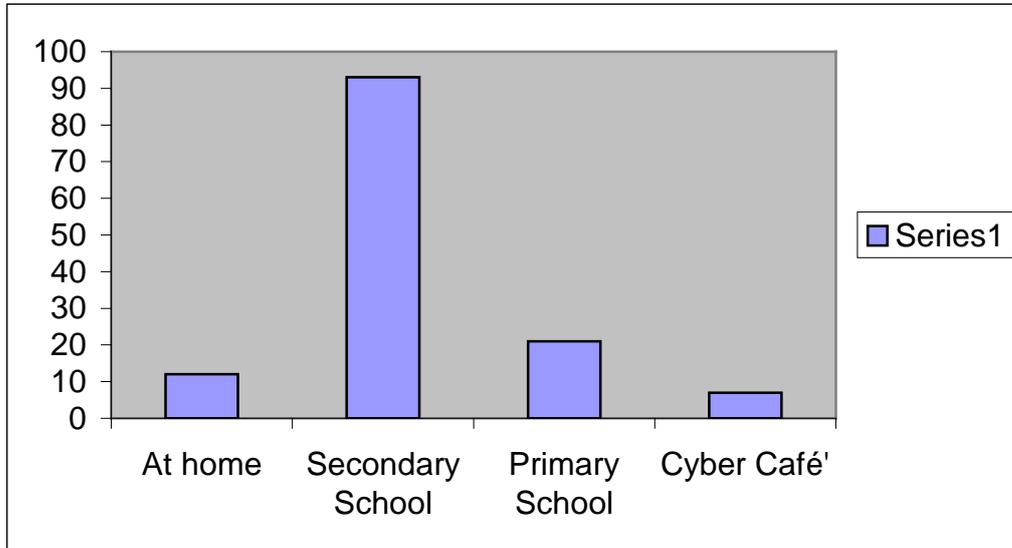


Figure 7 where students interacted with computers for the first time

The majority of the students were found to have been introduced to the use of computers in their current secondary schools, with a few mentioning primary schools. By implication this could largely mean that the majority of students accessed computers for the first time with CFSK's assistance. This is an important finding demonstrating how CFSK has not only established itself as a successful pioneer in the ICT revolution in schools, but also the fact that the organisation's ambition and goal of helping students in Kenyan public schools to gain greater access to computer technology was on course and bearing fruits.

It was also established that almost all students with prior interaction with computers had gone through private schools. This revealed an interesting dialectical relationship between the socio-economic class of students and access to ICTs. The finding is an important revelation, for government not only to realise the need to target ICT development support towards the less privileged, but also to acknowledge the existence of the gap based on students socio-economic backgrounds.

A few students in urban schools also mentioned cyber cafes' as their first place of contact with computers, which is a further portrayal of ICT as a commodity, which can only be accessed at a cost. Such evidence points at one major conclusion, that unless an aggressive policy to equip schools is taken, the digital divide is bound to increase, with the poor as the major victims regardless of where they are. Hence the urgency of the need to equip public schools, since it is in the public schools that poorer students are most likely to gain equitable access to computers.

4.10 Who teaches computer studies?

As mentioned earlier, the National teacher development programmes both in the Universities and teachers' colleges do not provide direct training for ICT teachers. This is a major obstacle because the ministry of education practically lacks ICT teachers to deploy in the schools, leaving the burden of hiring and paying ICT teachers to the BOG. This was evident in all sampled schools where all ICT teachers were privately hired by school management. As earlier observed, none of the hired teachers had received professional teacher training.

Secondly, schools complained that because the teachers were neither paid by government nor bound by any official policy of the central government, the turnover was extremely high with some schools hiring more than two teachers in a single term.

4.11 Academic qualifications of IT teachers

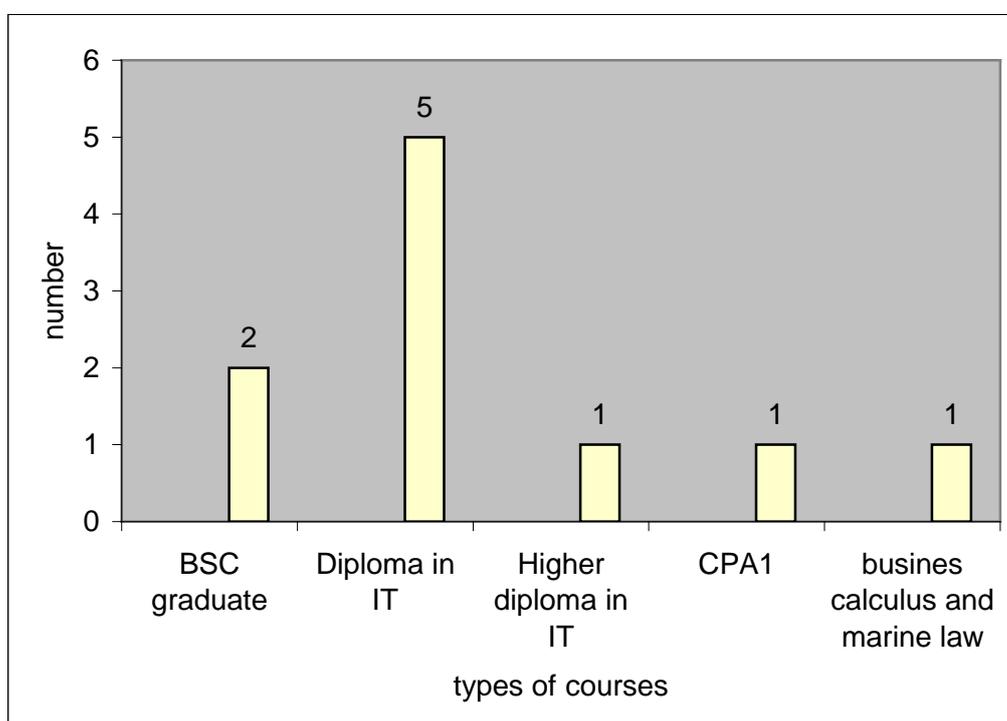


Figure: 7 Academic qualifications of IT teachers

Only two (2) of the ten teachers interviewed were University graduates with Bachelor of Science degrees. The bulk of teachers had ordinary and higher diplomas in IT. The rest of the teachers had studied courses with no direct relationship with ICT. The Kenya Teachers' Service Commission (TSC), which is mandated to develop and employ teachers for the schools system also has no policy on training, employing and deploying computer teachers which compounds the situation for the schools and those interested in becoming ICT teachers.

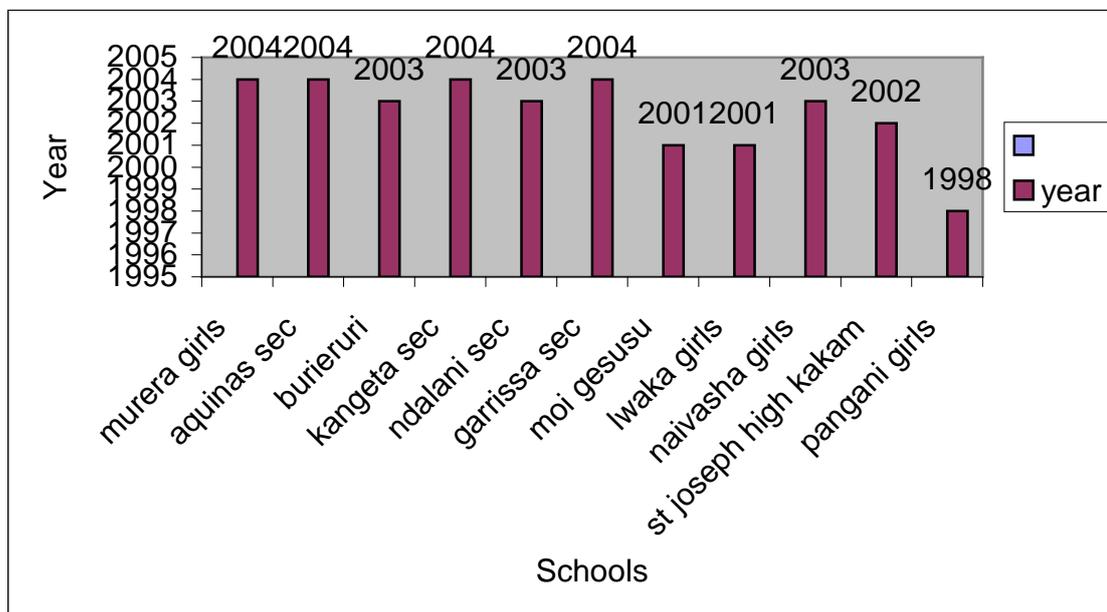
Another interesting finding to note was that the majority of the teachers interviewed only taught computer studies. This was contrary to the norm in schools where teachers often have an average of two teaching subjects. This was because either the schools had only one teacher for computer studies for entire school population which made the workload too much for a single teacher, or due to the fact that the bulk of ICT teachers were often only trained in ICT, which made it practically impossible for them to teach any other subjects. This practically adds pressure on the school income since it implies having to pay a teacher who only teaches one subject, whereas others teach two or more.

The study also revealed that computer studies were not timetabled like the other subjects. The subject was taught during evenings and weekends, which according to some respondents, makes the subject to look inferior to other subjects, though very popular with students. This attitude seemed to be entrenched by the fact the curriculum implemented by CFSK was not approved by the Ministry of Education and the examinations still not recognised by the Kenya National Examination Council.

4.12 CFSK training of ICT teachers

To ensure effective utilisation and maintenance of computers in partner schools, CFSK instituted a mandatory training for all ICT teachers prior to the delivery and installation of computers in the schools. CFSK training/sensitisation for teachers specifically covers a cross section of issues. The training among other things covers the vision and mission of the organisation, some technical issues on ICT, focusing both on software and hardware maintenance.

The training is paid for by the schools, with principals and teachers paying shs.6000= and shs.5000= respectively. This money is inclusive of everything including food, accommodation and washing of beddings. CFSK however tops up the payment from its own resources as what is paid is lower than the actual costs. The fact that schools pay for their participation was found to be playing an important role in building the required sense of ownership of the projects.



4.13 CFSK and the introduction of computers in schools

Findings indicated that some schools had computers for sometime before CFSK came to the scene. The earliest school to get computers got their first computers in 1998. The emergence of CFSK however made an obvious impact on the ICT situation in the school, as figure 8 illustrates.

The year 2003 for example saw a faster growth in the number of computers in schools. This rise was associated with the coming of CFSK in 2003. It is in this very year that the majority of schools sampled received at least computers for the first time. All sampled schools had received at least 20 computers from CFSK although some of the schools like Lwak Girls and Ndalani had added more computers from locally generated funds.

CHAPTER V

5.0 COMPUTER USE IN SCHOOLS.

This chapter presents and discusses findings regarding the utilisation of the available computers in the schools. The findings presented were generated from teachers and students in the different schools.

5.1 Preferred use of computers by teachers:

Teachers were asked to state their preferred use of computers in the schools. The purpose of this question was to find out teachers' perceived uses of computers at school. Responses to this question indicated research, communication and internet as the most preferred uses of computers by different teachers. Teaching, administration, typing of exams, exam analysis and teacher training were among the least preferred/mentioned uses. These were interesting findings for while CFSK's major aim was to integrate computers in the day to day teaching and learning activities in the schools, the teachers who were supposed to be the major implementers of the vision did not seem to share the intention.

Another question was raised to teachers to outline at least five actual uses of computers in their schools in order of importance. Most teachers were not able to identify the five uses, and analysis of this question by ranking was not possible.

Fig 9: teachers' preferred uses of computers

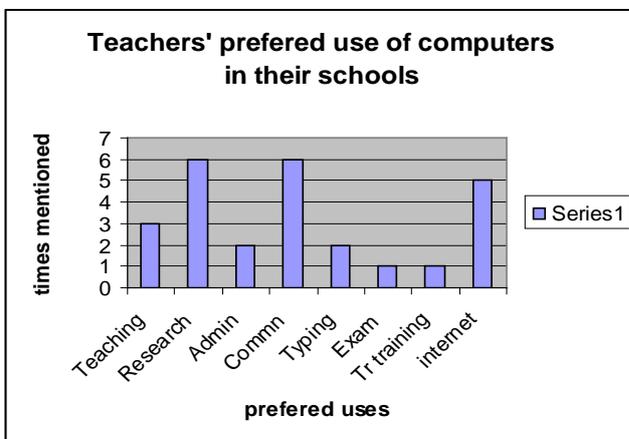
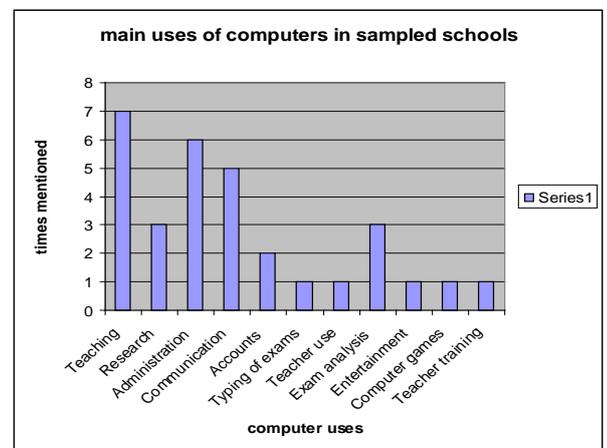


Fig. 10 Main



schools

uses of computers in

Their responses in terms of frequency of mention of diverse uses are shown in Figure 10. The findings however highlighted a contradiction between teachers' preferred use of computers and

the actual uses. Teaching for example emerged as the main use of computers in schools, followed by communication, and financial accounting respectively. What is interesting and important with this finding is that computers are actually being used in the teaching and learning activities within the school, contrary to the impression created by teachers' preference mentioned earlier. The use of computers for teaching, typing and examination analysis also emerged as a major transformation in the academic culture of Kenyan schools. Teachers in different schools confessed that prior to CFSK's introduction of computers in their schools very few of them ever imagined using computers in their routine academic and administrative work.

Another useful finding was that several non educational uses of computers like; accounts, entertainment, administration, communication and games were identified, and some of them featuring very prominently. It was also surprising that while the pre-evaluation assumption was that computers were being used to access internet, it did not feature among the main uses by the teachers. This was attributed to the absence of internet connection in the schools often due to cost.

5.1.1 What students use computers for?

The majority of students (79%) use computers to do school-related work. School work here involved the typing of notes, revision, doing exercises, and storing their work. Students also used computers to do personal things which were non academic like writing letters, drawing and painting, playing computer games, and communicating with different people.

What is important to note here is that one of CFSK's key goals of intervention i.e. to provide young Kenyans with an opportunity to access ICTs for educational and non-educational purposes to be able to fit in the modern ICT based economy was being addressed

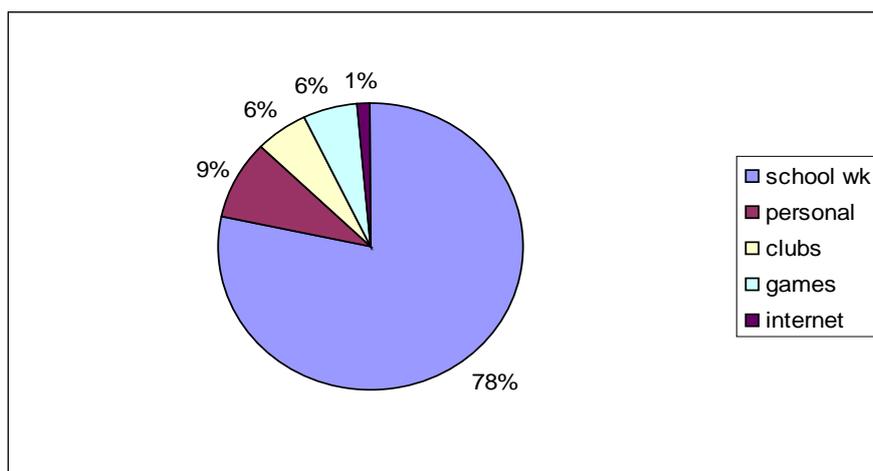


Figure 11 what students do with computers

5.2 Major users of computers in schools

Students were asked to identify who uses the computer more in their school. Responses to this question indicated that students were the main users of computers in schools (104 respondents, 75.4%). Eighteen (18) (13%) of the respondents were not sure who used the computers most and the rest, (13 students) (9.4%) and (2) identified the teachers and secretaries as the main users of computers respectively. The responses show that students were the main users of the computers in schools, which seems to bear out CFSK's central goal of creating a computer literate citizenry.

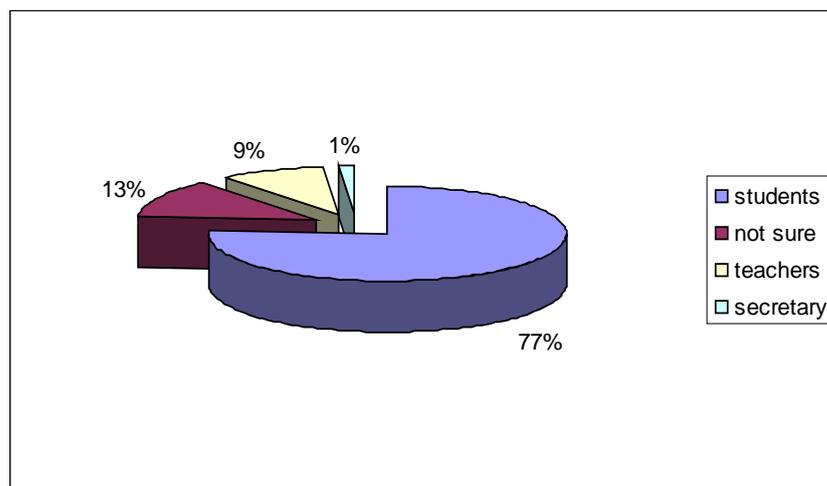


Fig. 12 Main users of computers in schools according to students

The dismal use of computers by teachers may on the other hand reflect the magnitude of the challenge to the government and other actors, stakeholders if computers are going to be fully integrated as a key ingredient in the teaching and learning processes in the Kenyan educational system.

5.3 Use of computers in teaching

Students' responses to the question as to whether teachers used computers in teaching showed that only a small fraction of teachers used computers, 61 students (44.2%), with the majority (77) students (55.8%) stating the opposite.

The study also sought to establish the subjects in which the computers were used as a pedagogic tool. The following subjects were mentioned and their proportions, as displayed in the figure below:

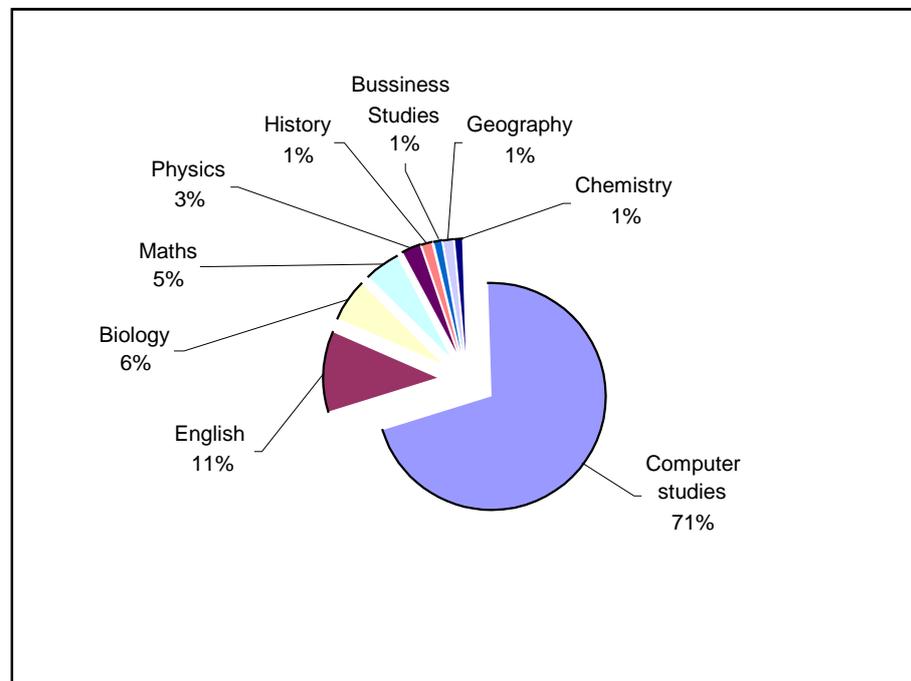


Fig. 13 Subjects teachers use computers

Use of computers for pedagogical purposes was still a challenge. Findings for example demonstrated that the use of computers in teaching subjects, other than computer studies was yet to gain ground in all sampled schools. This could actually be a reflection of the broader Kenyan situation as was further revealed by our discussions with ministry officials at different levels. The finding was indeed disturbing given the obvious need for integrating ICTs in curriculum delivery and the related advantages.

Teachers mentioned lack of content as the main reason for the dismal use of computers in the teaching of other subjects. CFSK staff confirmed this during interviews. According to CFSK staff, the organisation has just embarked on content development programme although it is still in its infancy. While this is true for CFSK, the interview with the NEPAD e-learning project coordinator revealed that the NEPAD project has a lot of useful materials which could be adapted by CFSK and the Kenya Institute of Education (KIE) and used locally. This idea was raised with both CFSK and KIE staff, but both felt some of the materials were too foreign to be useful in a Kenyan context without significant levels of adjustment.

5.4 Students' contact with computers

The evaluation also noted with interest that whereas the school was the main area where students use computers, a significant number of students interacted with computers outside the school. The data shows example that 108 students (78.3%) mentioned school, 23 students (16.7%) mentioned home, 3

students (2.2%) mentioned cybercafé, 2 students - 1.4% parent's workplace, 1 community centre and friends respectively. The same places were mentioned as the main sources of computer skills for students. This was an interesting revelation that not only multiple providers exist, but also that students are making use of the providers to gain computer skills.

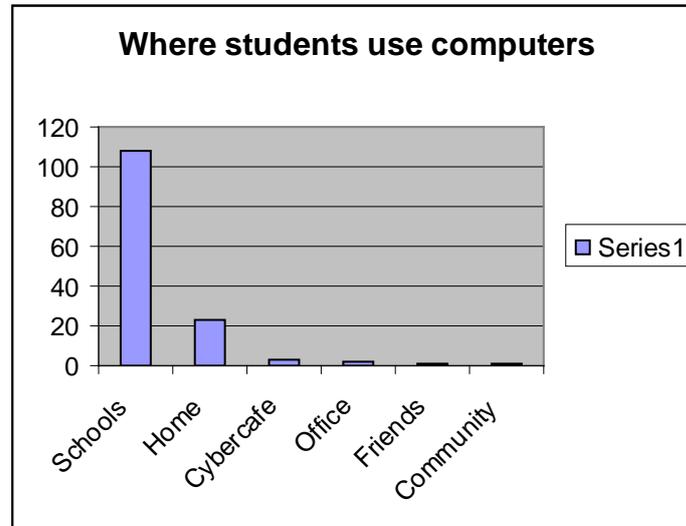


Fig. 14 where students use computers

5.5 Frequency of computer use by students

Students were asked whether they use computers at school. This question intended to establish whether the students were not only familiar with computers but also whether they effectively use them. All the 138 students sampled in this study indicated that they used computers.

To clarify the frequency of use, students were also asked to respond to a Likert scale on how often they used computers and the findings are presented in the chart (fig. 15) below. Findings on this were backed by other findings from the question as to how often they used computers to learn (see fig. 16).

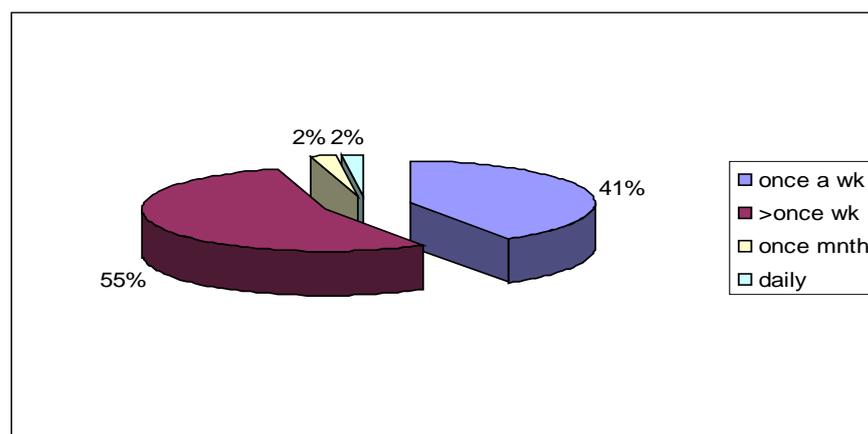


Figure 16 showing how often students used computers

The above findings indicate that 54.3% of the students used the computers more than once a week, 40.6% at least once a week, 2% daily and another 2% once a month.

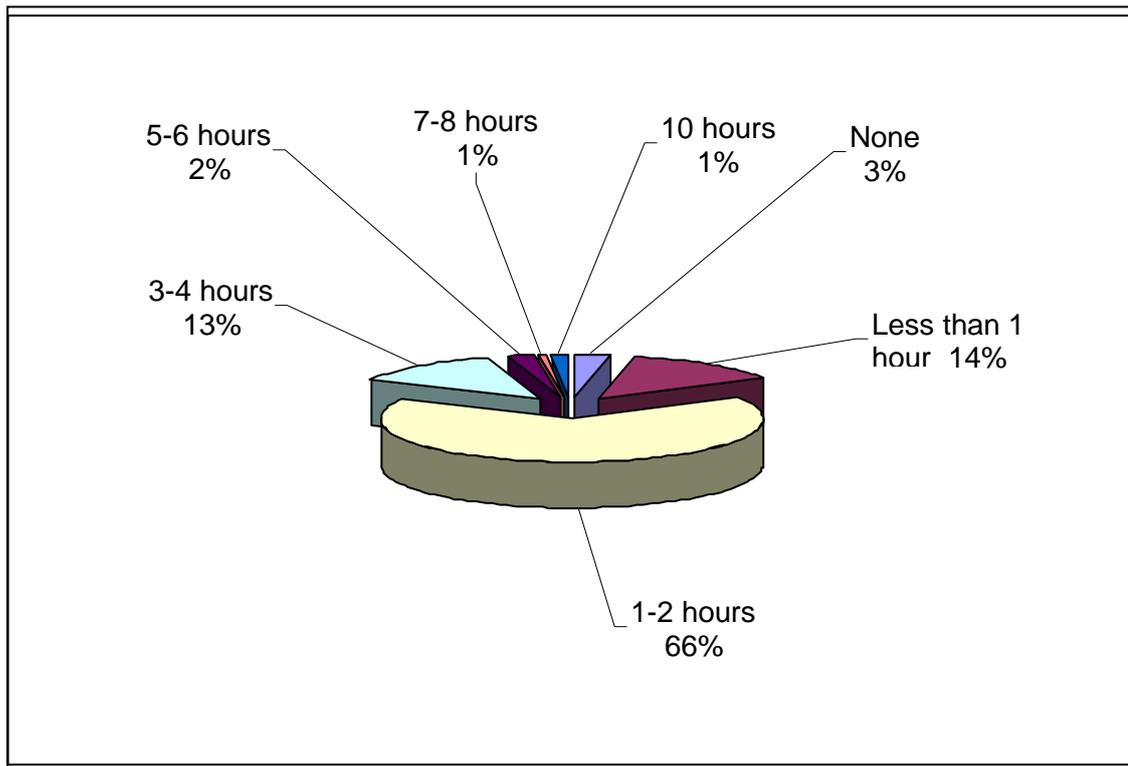


Figure 16 Time spent by students learning to use computers

The findings presented in fig. 16 bring out an interesting dimension regarding computers and computer studies in schools. While it is encouraging to see that some time is put aside for learning about computers, the amount of time spent by the majority of students who responded to the question (0-2hrs a week 83%)* is still far below the average of what students normally spend studying other subjects. The same is reflected by the amount of time students actually spend using computers in a week as shown in fig. 17. This was attributed to among other things the attitude of the school towards computers in general and their pedagogical use in particular. Both students and teachers raised the concern that computer studies was not among the compulsory examinable subjects and as such often not time tabled. This according to respondents compelled ICT teachers to engage students only after the normal school time or over the weekends.

Secondly, the fact the CFSK computer studies curriculum is still not recognised by the government also seemed to negatively

* This percentage is a combination of all those who spent 2 hours and below per week,

influence the schools' attitude towards the time tabling of computer studies.

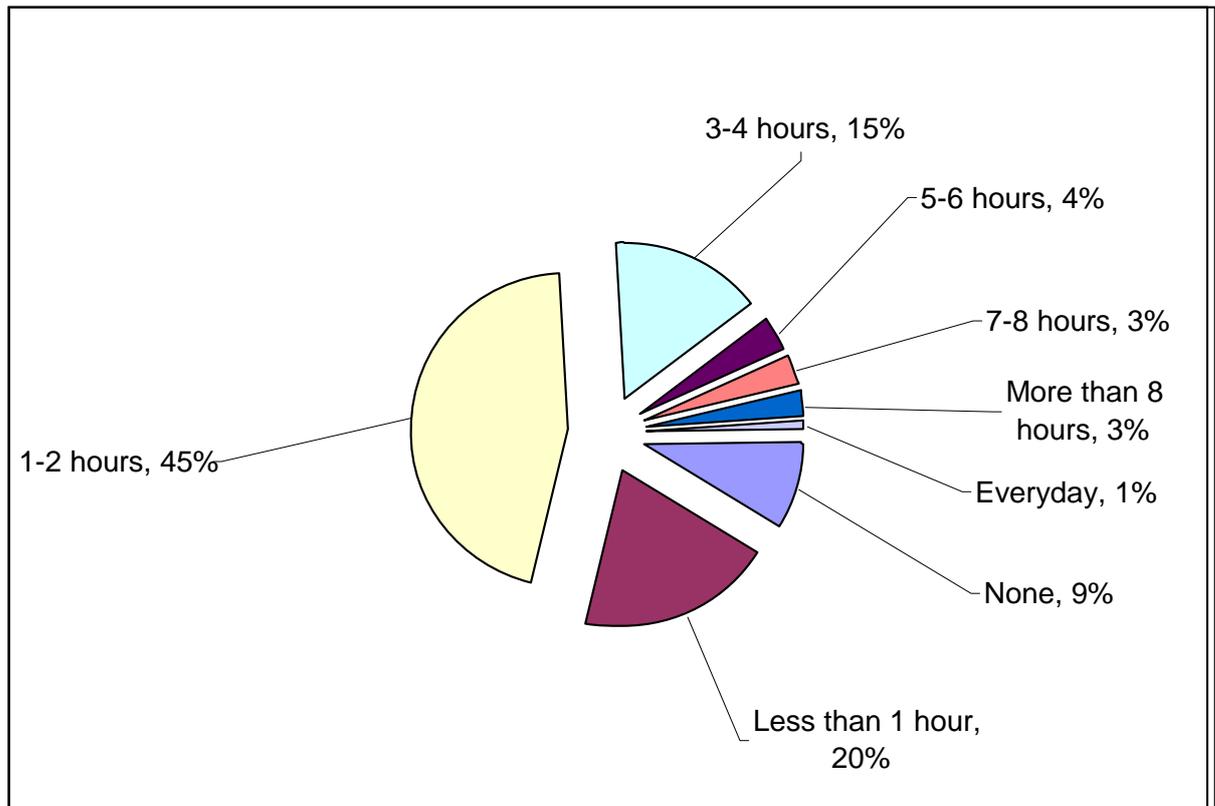


Fig. 17 Time spent by students using computers per week

5.6 Computer competence among students

Building skills and competencies among students and teachers in the educational use of computers in schools was one of CFSK's intentions. It was thus felt important to pay particular attention to the levels of competence students had gained in the educational and other uses of computers.

To address this, students were asked to rate their competence in using computers on a Likert scale. The findings as displayed in fig. 18 reveal that the majority of the students had a high degree of competence in using computers ranging from competent (103/138) to very competent (30/138) (i.e. well to very well) with only a minority 5/138 students) saying they could not use computers.

The students further explained the way they rated themselves. Those who rated themselves as very competent (very well) explained that they could operate at least three computer programmes plus internet and email without any assistance from the teacher or anybody else. Those who rated themselves as competent (well) explained that they could run up to three programmes including word processing. Those who could not use the computer were found to be from one student in their first

year in the school who came from schools without any contact with the use of computers.

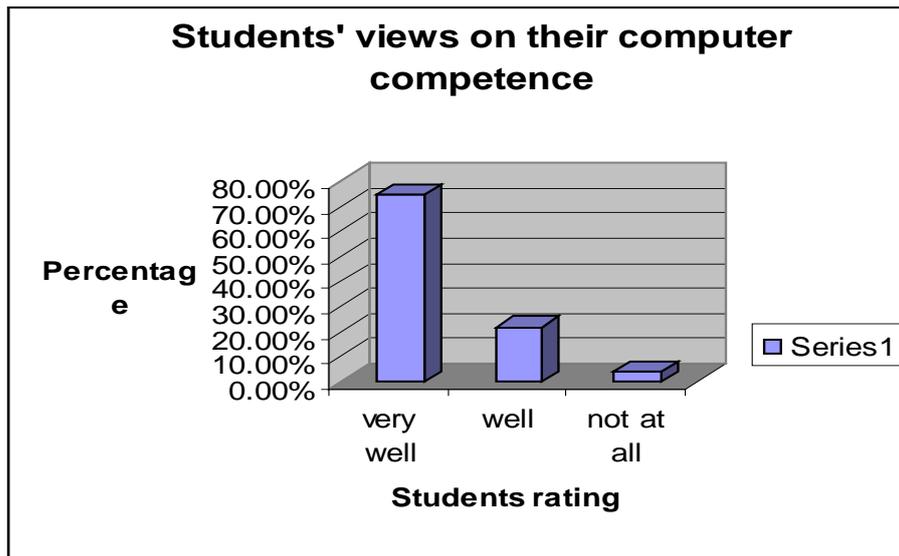


Fig. 18

The students were also asked to rate their computer skills by comparing themselves with other students in their class. Sixty one students (44.2%) said they knew more than the others and the same number of students considered themselves to know the same like the others. Only 14 students (10.1%) rated themselves as knowing less than their peers.

5.7 Use of the Internet

One of the key aims of CFSK is to stimulate and encourage creative learning and internet research skills for educational purposes. IDRC supported a pilot run of internet in six schools one of which (St Aquinas) was included in the sample. Both teachers and students in the school appreciated the support but also lamented that internet connectivity ceased immediately IDRC stopped the funding. The schools did not have the capacity to shoulder the costs of internet connectivity in individual schools.

In general, internet usage let alone connectivity, was found to be dismal in most sampled schools. Eighty four students which is (63%) of the total sample of students from different schools stated that they did not have access to internet. Of the 37% who stated that they use the internet, less than 20% had used it for educational purposes as anticipated. Personal and other non-educational uses like email and entertainment emerged as the major uses of internet. Projects and homework assignments were the only uses one could clearly recognise as educational uses of internet.

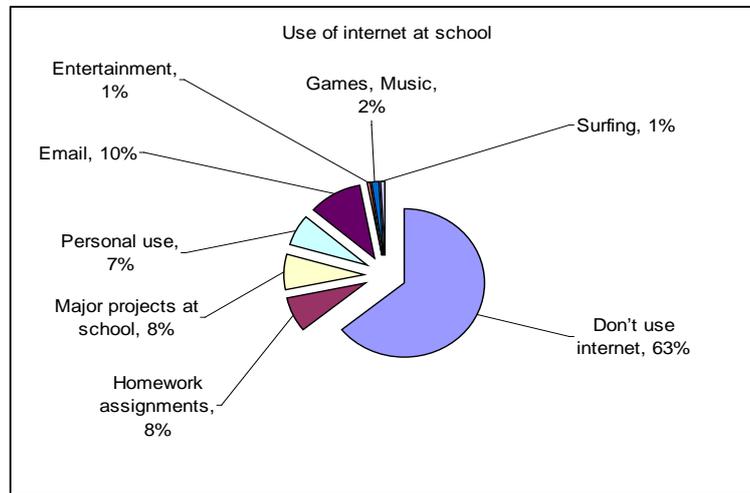


Fig. 19 use of internet at school

Low internet connectivity and usage in schools emerged as a challenging revelation of the need for CFSK and its partner institutions to develop appropriate strategies to respond especially with regard to the low level of connectivity and the fact that where it is available, the main use is not educational as anticipated. This finding is particularly important as it represents the obvious limited success in one of the key areas through which CFSK had hoped to widen learning opportunities, revolutionise educational research and enrich curriculum content and delivery. The schools' inability to meet the required costs for connection, together with unreliable power supply in some of the regions was singled out as major limiting factors.

5.8 Learning resulting from CFSK's involvement with schools

In addition to assessing students' perception of their competence in using computers, the evaluation sought to establish the actual learning gained by students as a result of their interaction with CFSK and the computers.

Learning can be considered effective if it addresses the three learning domains i.e. the cognitive, the psychomotor and the affective domains. Our assessment of CFSK's activities also purposed to establish what kind of impact the organisation's activities had had on the students in these areas.

The cognitive gains achieved

The cognitive learning domain is concerned with the way people acquire and process knowledge in a learning environment. With regard to the acquisition of *knowledge* which is associated with cognitive achievement, students mentioned a cross section of new knowledge they had gained as a result of CFSK activities in their schools. New knowledge included: word processing, use of the thesaurus for language improvement, use of various

computer programmes comfortably e.g. excel, power point, printing, use of internet, programming, calculations, games and music.

Students showed pride in their ability to: “develop documents and store them ‘permanently’ on the computer”, “sending messages to friends and relatives abroad, and interacting with many different people of different tribes and races”. Students further acknowledged that their exposure to computers equipped them with rare knowledge and skills, which they transferred to other learning situations.

Students for example mentioned that computer studies helped them to operate other electronic gadgets like mobile phones, television, electronic calculators, and typewriters. Programmes like Microsoft Excel helped some students to learn and practice invoicing, and using the ledger and spreadsheets, which were part of business studies. A student from St Joseph Kakamega proudly narrated how she could find educational material for herself via the internet outside the school. Some students also confidently stated that some of the concepts they had learnt in computers studies were applicable and transferable to other disciplines like physics and mathematics. One of the students commented “...*Our understanding in other subjects has improved so much, auto sum in excel has for example made mathematical calculations simpler. The writing of compositions has also become easier as grammatical and spelling errors are easily identified and attended*” (source: student respondent St Joseph Kakamega”

The psychomotor gains registered

The psychomotor domain is concerned with the acquisition of practical skills as a result of a learning encounter. Students in different school outlined the various practical skills they had developed as a result of interacting with CFSK activities, assembling and dismantling computers, editing pictures and graphic design. One of the female students from Lwak Girls in Nyanza province gave an impressive account of the practical skills she had acquired. In her own words “...*I have learnt some hardware skills, I can assemble the computer, open the system unit, and do a few things on the motherboard...*). All students associated their acquisition of different skills because among other things: they had access to computers which enabled them to try out a number of things and learn through discovery, the readily available expert guidance from the computer teachers and the fact that technical support from CFSK often kept the computers in a good working conditions.

The affective gains

The affective learning domain is concerned with value and attitude development as a result of a learning encounter. The presence of computers in schools also played a central role in cultivating a positive attitude among students towards the use of the computer as an educational tool.

As mentioned earlier, the majority of students were introduced to computers for the first time in their current schools, and many of them confessed initial computer phobia which they overcame through continuous exposure to them. It was the emergent positive attitude and confidence in working with computers that transformed students into self-motivated, interested and independent learners.

Another major outcome of CFSK's engagement with schools was the psychological and emotional transformation especially among students. More than 99% of the students mentioned computer studies as one of their most favourite subjects. Students saw in computer studies an important opening to a multitude of career opportunities as some of the responses reveal. Responses like "*... I would like to become a computer genius*", "*I want to be a computer engineer*" "*I have known a lot of things that I did not know earlier, I can now do programming using the Pascal language*" repeated over and over again by students from different schools.

Computers were particularly praised by students for transforming their learning culture and environment. One student for example commented "*...using a computer is not boring like using one's brain which is tiresome and very tedious*" another one almost mentioned the same thing thus "*... computers are fun to learn because they introduce you to more things which we don't know and they are not boring to learn*" other illuminating comments like: "*Computers are very interesting machines and are very enjoyable*"; "*Computers make me busy and learn a lot of useful things*"; and "*I like learning and every minute that am using the computer I find myself learning more new things*". All these comments demonstrate the level of transformation students had achieved as a result of interacting with CFSK.

Other benefits of interacting with CFSK included: improved quality of computer studies in terms of reduced ratio of students per computer, a new sense of pride in the school and recognition of CFSK's partner schools by the surrounding schools and the community at large as transformed schools.

5.9 Some negative effects of computers on learning

The positive benefits of using computers notwithstanding, there was evidence of several negative practices and behaviours among students. With regard to actual learning, the use of computers was reportedly having a negative impact on students' ability to calculate manually and to write correct grammar and spelling. This is an important area which teachers should be aware of and make deliberate efforts to respond to.

5.9.1 *Illegal materials*

Some students and teachers complained that a number of students come with foreign CDs for games and thus waste time. Other students were accused of 'sneaking in obscene materials' - pornographic movies and music which are neither educational nor socially acceptable within the school context.

5.9.2 *Increasing eye problems*

There was mention of an increase in the number of students complaining of eye problems due to over exposure to light from the computer screen.

5.9.3 *Competition with other subjects*

In some of the schools, teachers and students also expressed a concern that computers were making other subjects unpopular since everyone wanted to do computers as a subject. This needs to be addressed.

5.10 Challenges and constraints experienced by students

The evaluation established that a number of challenges stood in the way to the smooth and effective integration of computers in the learning and teaching systems with schools. Challenges ranged from inadequate software, to other external factors like erratic electricity supply.

Students complained that the existing computer programmes were very basic. Such useful software like Desktop publisher, PageMaker, Pascal and Visual Basic were not available in some of the schools. In some of the schools, students expressed a strong desire to have a more versatile operating system like Windows XP

installed on the computers to replace the obsolete ones. The demand for more than basic software and programmes may be an important pointer to the fact that some students' ICT knowledge and skills were probably far ahead of the expected.

5.10.1 Computer breakdowns

Despite the efforts by CFSK to keep the computers in good working condition, on several occasions, students complained that repairs on computers often took long to be effected. Students also felt that the routine servicing of computers was not frequent enough to match with the rate of faults. Breakdowns were also reportedly expensive although none of the respondents actually quoted an indicative cost to substantiate this.

5.10.2 Inadequate computer skills

Students confessed that much as a good number of their colleagues had adequate computer skills, the majority of students did not have enough skills. Simple problems like losing data, inability to retrieve diskettes, inability to scan documents, inability to locate the desired option from the menu and low typing speed were still hampering students from effectively using the computers.

5.10.3 Inadequate computers

The number of computers was still inadequate given the numbers of students and the time available for them to use computers. Having fewer computers than the number of students hiked the computer student ratio and reduced the time available to each student to practice what they had learnt.

5.10.4 Lack of or poorly trained teachers

As already mentioned, the schools were facing two major challenges regarding teachers namely: the absence of professional ICT teachers in the country and the high teacher turnover with some schools hiring up to three teachers in a term. Students complained about the rate at which computer teachers left the schools. They sounded disappointed that they never got time to get used to the teachers since teachers kept coming and going all the time. The lack of professional training for some ICT teachers was manifested in among other things the reported excessive harassment of students whenever they did not meet the teachers' expectations. One of the students for example complained "... some of us have been forced to do computers without our consent and are being forced to copy notes and the teacher cannot explain the notes. Some teachers cannot tolerate any challenge from the students even when it is genuine"

5.10.5 Power failure

Power was a problem in two major ways namely; unreliability and expense. In some of the schools not linked to the national grid depending on generators to power computers proved expensive. In some places connected to the national grid, power was erratic and often not enough to run the computers as expected.

5.11 Recommendations by students

The students suggested a number of ways to address the challenges they faced in using ICTs. Their suggestions are presented below in accordance with the different challenges identified.

5.11.1 Programmes/software and hardware:

Students recommended that CFSK should not only upgrade the nature of software it installs on the computers but also include other very useful ones like the typing programme on the package. This is because many of the students who are using computers for the first time are confronted with a double problem of learning the basics of a computer including typing as they learn other important programmes. In addition, students recommended an improvement in the quality of computers. They felt that many of the computers in schools were not only old and slow but also had monitors which were detrimental to the students' eyes. They specifically recommended antiglare screens to be installed on all computers donated in the schools.

5.11.2 More study time

Because the time allotted to the study of computer studies was considered insufficient by students, nearly all students in the different schools visited recommended that more time is allocated to computer studies. Three major reasons were advanced: a) computer studies was a new subject area in which the majority of students did not have prior experience; b) the practical nature of the subject itself requires more time to develop the necessary practical skills and exposure; and c) the ratio of computers to students was low which made it difficult for all the students to get enough exposure at the current time allocation.

5.11.3 Internet

Students called on CFSK and the schools to consider internet connectivity as a priority in all schools as it enhances learning by widening the available options for the students and teachers. In the same breath students called on schools to consider more

reliable power alternatives to replace the current erratic power supply.

5.11.4 Repair and maintenance

The current routine repair and maintenance was considered very irregular. CFSK was accused of being slow in responding to emergencies raised by schools. Students did not seem to realise the fact that their schools also had a responsibility especially when it came to dealing with emergencies.

5.11.5 Managing abuse

To manage the abuse of computers by students especially the introduction of illegal non educational materials like CDs and DVDs, students recommended that CFSK should work with schools to develop school ICT policies that will ensure that the computers are used for the right purposes and by the right people. Such policies should be accompanied by practical implementation strategies including a monitoring system, which should involve the students themselves.

5.11.6 More exposure and motivation

Students felt that in order to perform better, they needed more interaction with peers in and outside the country to share their different experiences. They thus recommended that schools encourage the formation of computer clubs in the schools; create inter-school discussion groups both local and international; and finally create a forum to sensitise students, teachers and parents on the value of computers. That, they argued should be accompanied by a vigorous policy to avail all schools with internet connectivity.

5.11.7 Better trained teachers

Finally students recommended that computer teachers be given more professional training as teachers to be able to handle students more professionally. They particularly recommended that teachers should understand and see students as students and not rivals to be abused and fought when they commit mistakes.

CHAPTER VI

6.0 CFSK AND OTHER STAKEHOLDERS

To achieve its goals, CFSK developed a strategy that largely involved working with a cross section of stakeholders with different mandates, capacities, potentials and motivations. The key stakeholders included the government represented by the Ministry of Education Science and Technology and Kenya Institute of Education, international organisations like IDRC, Computers for Schools Canada, Corporate entities like Barclays Bank, Safaricom, Kenya Airways, and many others. Some of the organisations had developed memoranda of understanding and had longer contracts covering a number of years, others were one time partners who came in to donate computers or assist in a specific problem.

6.1 CFSK and the Education Sector at the National, Provincial and District Levels

Evaluation findings revealed that the relationship between CFSK and officials in the education sector was not strong. Apart from a few officials who had directly dealt with CFSK, others seemed to know very little, if anything about CFSK. This lack of close understanding of CFSK was obvious in different respondents' comments on CFSK activities in the schools and the nation at large. One official for example commented that he had only overheard the permanent secretary talk about it and was not even sure whether the computers CFSK gave to schools were supplied free of charge. Another official confessed that he only heard of CFSK when he visited schools which had received computers from CFSK, while another only came to know of the project when he was invited to close a training workshop for principals and to hand over computers to them.

Surprisingly however, even those who knew something about the programme only highlighted the provision of computers as the only role of CFSK. Curriculum development, training, refurbishment and computer maintenance were not mentioned at all by any of the officials at the district and provincial levels. This appeared like further evidence of either, limited interaction between the education sector and CFSK, or lack of interest in programme activities by government officials.

6.1.1 Relationship between CFSK and regional education offices

One of CFSK's objectives was to establish linkages and strong relations with different stakeholders. Whilst the educational

sector was seen as one of the key stakeholders from the word go, the efforts to establish the kind of relationship so far established with the education sector at different levels did not reflect the strong kind of relationship one would have anticipated. Education officers at the national, province and district levels were for example asked to explain their relationship with CFSK but the response did not always give an impression of any existence of a meaningful relationship.

Some officials at the provincial and district levels out rightly complained that CFSK sidelined them and worked directly with Ministry Headquarters at Jogoo House and the schools. They claimed that CFSK did not report to them as often as they expected and many times just ignored them. This accusation however became suspect when in one incident, an officer had to request for a file for one of the schools participating in the programme to confirm how they got involved, only to find a letter in the file written by the officer himself appreciating the school's wisdom in choosing to participate in the project and CFSK's willingness to offer assistance.

The contradiction was surprising given the fact that one of the conditions by CFSK for a school to be allocated computers is to get a clearance letter from the senior education officer in their district authorising the schools to acquire the computers. This incident appeared as one obvious case where officials either lacked interest or adequate awareness of the value and importance of CFSK's activities, and of course the national agenda to integrate ICTs in educational/curriculum delivery.

There were also a number of complaints raised by the officials that are noteworthy. There was a persistent accusation in Nyanza and Western province that CFSK did not pass through the ministry when launching its activities in the area. CFSK was also accused of not only taking teachers for sensitisation workshops without informing the PDE in Western province, but also visiting schools without informing the PDEs about the programmes. This according to respondents left Education officials at the different regional levels with no alternative but to rely on hearsay. All these seemed to suggest that there was no genuine relationship between CFSK and the education department in the provinces and hence the need to undertake deliberate efforts to bridge the information and other gaps between the two.

The evaluation had anticipated that CFSK was enjoying some support from the regional educational officers. As the above discussion may suggest, such support was indeed dismal often involving participation in the closing of teachers training

seminars and endorsing papers for schools seeking collaboration with CFSK which is a requirement for receiving computers.

6.1.2 PDE/DEO perception of CFSK contribution to the education sector in their regions

Some of the PDEs and DEOs recognised the contribution of CFSK to the education sector in the different districts and provinces. The officers mentioned that CFSK had contributed greatly to the educational sector in five crucial ways namely: increasing access to computers, modernisation of schools, widening of learning opportunities/options for children, increase in ICT awareness and computer literacy.

Increased access to computers

With regard to increased access, it was mentioned that many schools, which had never dreamt, of owning computers were blessed by CFSK to own and use computers for educational purposes for the first time in the schools' history. Many schools had as a result started teaching computer studies as a subject, which widened the opportunities/learning options and future employment avenues for students.

Modernisation of Schools

PDEs and DEO who had knowledge of CFSK activities in the schools acknowledged that provision of computers by CFSK had played a key role in modernising the schools in different ways. Principals and teachers were for example using computers to do the work they used to do manually; schools were seen as new centres for creating awareness of ICT and its related value, starting with the students, the teachers, principles and other members of the community.

Promoting ICT Literacy

According to one PDE, CFSK was playing a central role in promoting ICT literacy, which in a way contributed to the ministry's goal of equipping schools with ICT facilities to meet the needs of the modern world. DEOs in particular showed some appreciation for CFSK's contribution to the rising levels of computer literacy in the schools among students and staff.

Nevertheless, some PDEs and DEOs were non-committal on the exact form of contribution CFSK was making/had made towards education in the different regions. According to some of the officers it was not easy to enumerate the contributions since CFSK sidelined them and worked with the schools directly without involving their offices. It was also claimed in some

provinces for example that PDEs were not aware of the number of schools, which received computers from CFSK since no reports had been sent to the PDE's offices by CFSK. Some also argued that they could not distinguish between computers donated by CFSK and those by other organisations since several organisations were also doing the same.

The seemingly jittery relationship between some PDEs/DEOs and CFSK, points at the necessity to revisit the projects' methods of work and take deliberate steps to develop a positive working relationship between the two inevitable stakeholders.

6.2 Board of Governors/Parents and Teachers' associations and CFSK

BOGs and PTAs were found to be among CFSK's most important stakeholders at school level. The two not only manage the schools but also contribute financially to the schools' wellbeing. It was this important role that made the review of this relationship a necessary endeavour in this evaluation.

All BOG and PTA members interviewed demonstrated a deep understanding of CFSK and its key activities. They were aware of some of the organisation's key roles including assisting schools to initiate and expand their computer programmes, training of teachers and school management in the use of computers, helping needy schools to access low cost computers. Other roles like curriculum development, refurbishment and maintenance of computers were however not mentioned.

With regard to the involvement of stakeholders in the planning and executing activities, it was found the CFSK has tried to involve BOG and PTA members in a number of activities. When CFSK receives an application from a school or institution, it organises a workshop to sensitise the management of the school, including representatives of the Board and PTA. The purpose is to ensure that management understands the role it is supposed to play in the maintenance of the computers and to make an informed decision to commit itself to do so. This arrangement has been central in building local capacity within the institutions for receiving and maintaining computers. It has also been key in creating the necessary sense of ownership and to secure a long term commitment to support the venture as a school project.

Discussions with different BOG/PTA and principals revealed that in some of the schools it was the Board that initiated discussions with CFSK seeking for computers. In situations like this one, the schools naturally and easily owned that computer project without

any undue sense of dependency on CFSK. This sense of ownership and commitment was evident in discussions with board members from different schools as the following direct quotations may demonstrate:

"it is us who authorise the principal to get more computers and we push for modernisation of the courses, that is computer subjects to be relevant"

"we support CFSK work by ensuring that the computer laboratory is in place according to CFSK specifications before the computers are delivered"

"We try our best to be faithful to the contract we sign with CFSK and we are updated of what is happening"

"It is the PTA members who requested if CFSK can involve them in their discussions with the school and ever since the PTA has been involved"

The good working relationship between CFSK and the two statutory bodies was largely a result of the mandatory sensitisation of school managers by CFSK before any agreement of collaboration is accomplished and it can be seen as one of the pillars for the observable success.

6.2.1 BOG and PTA roles

The evaluation confirmed that CFSK works hand in hand with BOGs/PTAs to ensure that the organisation's activities succeed in the schools. Respondents mentioned monitoring of computers, lobbying, awareness creation, resource mobilisation and ensuring compliance with rules and policies as the five major roles played by the two statutory bodies in implementing CFSK activities.

6.2.2 Monitoring Computers

Under monitoring PTAs and BOGs among other things ensure that the computers brought to the school are up to standard in terms of quality, quantity and nature of software.

6.2.3 Lobbying

PTA and BOGs are involved in lobbying for schools, through the principal to get more computers from CFSK or any other donor to cope with the increasing numbers of students enrolling for computer classes.

6.2.4 Awareness agents

PTA and Board members also play a key role in sensitising the students, teachers and the local people on the importance of being computer literate. This has been possible because of their close interaction with CFSK which has enabled many not only to become aware of the value of computer literacy, but also confident and passionate about the venture. Such involvement was instrumental in convincing the relevant individuals and parents to generate funds to put up crucial infrastructure like computer laboratories in a number of schools. In some of the schools, PTA and Board members were practically involved as facilitators/implementers at school level not only assisting teachers but also mobilising members of the community to support the venture.

6.2.5 Policy Development

PTA and Board members have been responsible for the establishment of policies to govern the acquisition and management of computers in schools. In addition to ensuring that policies are put in place, they also see to it that policies are implemented in the schools.

6.2.6 Resource Mobilisation

With regard to resource mobilisation, the two bodies have been involved in the mobilisation of funds from parents and other potential donors like the constituency development fund. Such funds have been central in meeting the computer maintenance costs and schools' financial obligations to CFSK.

6.3 BOG/PTA opinions about CFSK activities

Most BOG/PTA saw CFSK work either as satisfactory, good or very good. Regardless of their individual perspective, it was clear that they wanted the project to continue even after the end of the current contract with CFSK. This was according to them because CFSK was efficient in fulfilling the contract terms of maintenance, training and resource support. CFSK was also seen to be doing a good job of not only creating and increasing access to computers but also bridging the digital divide between the poor and rich, rural and urban schools in Kenya.

6.4 Sustainability

Despite the encouraging views on the programme, there were some areas which needed more attention. Training more teachers and integrating a sustainability plan as part of preparation for CFSK's exit strategy were raised as key issues that CFSK must consider. The issue of sustainability plans became particularly important after realising that the provinces

and districts did not have concrete plans to sustain the activities CFSK had started at the end of the project. It was individual schools that were being encouraged to avail funds and make future plans to sustain computers after CFSK. In other words there was no concrete plan involving all stakeholders.

BOGs and PTA representatives expressed special interests in the sustainability of the activities initiated by CFSK in schools and gave a number of suggestions. With regard to funding the activities, they mentioned the involvement of alumni as an important strategy for fundraising. This was in addition to PTA, individual parents' contributions and intensification fees collection strategies to ensure that all students pay school fees on time. They also suggested private tuition for local communities and school leavers to generate more funds.

6.5 CFSK's partners beyond the schools and government

By the time of the evaluation CFSK had more than twenty five partners both local and international. Different partners contributed to CFSK's work in different ways, often depending on their different orientations, core business and area of interest.

The support given to CFSK by partners included a cross-section of items and services. More than ten organisations had so far been able to donate more than 6,000 computers, accessories, software and licences to CFSK. Prominent computer donors to CFSK were: Digital Links International, Computer Aid International, Hand in Hand, Calvin Christian School, Computers for Development (Holland), Barclays Bank of Kenya and Barclays Bank UK. Others included: the Canadian High Commission, Management information systems, Nation media group, Reuters LTD, Safaricom, Unilever, UNICEF, Tetra Pak and Ibero Kenya.

Other forms of support from partners included the hosting of the CFSK website, training facilities, training materials and content development, finance transportation of computers, provision of vehicles/trucks to CFSK furniture and infrastructure, and exemption of import duty by government.

Three key CFSK partners including Safaricom, Barclays Bank of Kenya and IDRC were interviewed as part of this evaluation. The purpose was to establish the nature of relationship each had with CFSK and their views on CFSK activities.

6.6 Safaricom Foundation

An interview was held with the head of Safaricom foundation to get a general over view of the relationship between Safaricom

and CFSK, the nature of support, reason for collaboration, anticipated benefits, views on sustainability and CFSK's areas of weakness.

The relationship between CFSK and Safaricom started in 2002 as the very first corporate body to work with CFSK. Safaricom's decision to collaborate with CFSK was based on two major factors:

a) CFSK appeared as one of the few organisations that were clear about what they really wanted to do. This was based on a proposal that CFSK wrote and submitted to Safaricom foundation;

b) Safaricom also saw CFSK at the time as the only organisation with a clear vision and strategy of introducing ICTs in the educational delivery and education being one of the foundation's areas of interest, it decided to offer the necessary assistance to CFSK.

By supporting CFSK, the foundation believed that it would contribute in bridging the digital divide and open up more educational opportunities to students and communities living within the school environs throughout the country. It would also in a way help the needy to meet their needs while at the same time augmenting government efforts to empower the poor.

6.6.1 What CFSK benefited from Safaricom so far

Safaricom began by offering some limited support to CFSK by providing furniture and maintaining office infrastructure. The foundation later paid for the transportation of two computer containers in 2005 and donated seventy eight (78) computers. The foundation finally decided to develop a three year collaboration programme worth 34 million Kenya shillings, five millions of which was for providing electricity in the computer laboratories and exploring more reliable alternative sources of power for the schools. The foundation also has plans to supply twenty (20) computers to ten schools in each of the eight provinces which will amount to 1600 computers throughout the country.

6.6.2 Safaricom's view of CFSK's activities

As a whole, Safaricom had a high opinion of CFSK and its activities. This was based on three major reasons namely:

a) CFSK's vision, mission and strategic objectives were agreeable to Safaricom

- b) CFSK's concern for the poor and marginalised was in line with what the Safaricom foundation believed and as such a common ground of interest for both.
- c) The fact that is responding to a long standing problem in the education sector with more exciting practical solutions seemed

Nevertheless, Safaricom raised a number of areas which CFSK had to address. Safaricom for example believes in high standards which CFSK some times failed to fulfil, a case in point is when CFSK forgets its responsibility to make timely quarterly reports to its partner.

Safaricom was also unhappy with the fact that CFSK at times took some important commitments lightly. According to the respondent "any event for Safaricom is a big event. There was a time we invited CFSK for a function only to cancel the appointment very late which frustrated Safaricom". The respondent also complained about the absence of a clear communication structure in CFSK. According to her, all business and communication seems to revolve on the person of the executive director whose absence creates an automatic vacuum which "frustrates fast moving partners like Safaricom".

6.7 International Development Research Centre (IDRC)

The senior programme officer at the IDRC regional office in Nairobi was interviewed as one of the key informants during the evaluation. The purpose, like with Safaricom, was to get an overview of the relationship between IDRC and CFSK, establish IDRC's involvement in CFSK activities and contribution to the programme, opinion about the entire project.

It was CFSK that approached IDRC for assistance and IDRC accepted to support the organisation on presentation of an acceptable proposal. Whereas CFSK's proposal did not fall within research, which is IDRC's core business, a decision was taken to fund the activities due to the educational focus of the proposal and the fact that it was addressing ICT in education, which was then and still remains a topical issue. The idea of working with the educational sector to integrate computers in educational delivery, together with the CFSK model of operation which tracks the computer until its final disposal (supply the computer, maintain them, follow them up to the end of their lifespan and dispose of them in an environmentally friendly manner) was one of the other factors that appealed to IDRC to accept to work with CFSK.

6.7.1 What has been the relationship between IDRC and CFSK?

By the time of the evaluation, IDRC had been working with CFSK for a period of three years. IDRC looked at CFSK as a young NGO with a good agenda and decided to support a number of activities including those which normally fall outside IDRC's funding mandate.

IDRC provided CFSK with guidelines and procedures to guide their relationship; CFSK is for example expected to report to IDRC every six months to give an update of the programme. In addition CFSK can only receive funding after accounting for previous disbursements.

There is however continuous interaction between the two organisations whenever need arises. To keep track of what is happening, IDRC also participates in different CFSK activities including launchings, handing over computers and officiating in the opening and closing of workshops whenever possible. IDRC has carefully kept itself away from the temptation of micromanaging CFSK i.e. having undue influence on the day to day running of the organisation.

6.7.2 IDRC's contribution to CFSK

IDRC has contributed to CFSK's activities in several ways:

- It provided financial support worth 9 million Kenya shillings from connectivity Africa and another 4 million shillings from the regional office
- 17 Computers
- Funding CFSK operations, staff and volunteers
- Supported CFSK staff to attend training in the development of digital content in Uganda
- Funded a pilot study on thin-client technology,
- Funded CFSK to pilot run internet connectivity in some six schools,
- Funded the institutional development study
- CFSK's business plans and
- The final evaluation study

6.7.3 IDRC's opinion on CFSK activities

IDRC has high regard for CFSK and its activities due to the organisational vision, mission, strategic objectives and the way they are being translated into reality on the ground. The CFSK, model seems to be one of the best innovations in managing ICT in the context of the developing countries like Kenya. The flexible

and yet consistent management style of CFSK leadership was mentioned as good and worth noting. The idea of using volunteers was also observed as an innovative way of coping with challenges at a time when resources are limited. The above notwithstanding, CFSK was criticised for being too quiet on its achievements.

CHAPTER VII

7.0 KEY STRENGTHS, CONSTRAINTS, CONCLUSIONS AND RECOMMENDATIONS

This chapter provides some deeper insight on the findings in view of the stated objectives of the evaluation and the project goals.

7.1 CFSK's key areas of strengths

Evaluating CFSK's activities revealed a number of key areas of strengths including the organisation's history, the charisma and management style of the leaders, the board, and the philosophy of voluntarism, a committed and youthful work force, decentralisation and resource mobilisation.

Leadership

The presence of the founder as the Executive Director is one of the key strengths CFSK has at this stage of its development. As a young organisation, it needs a person who understands the origins, vision and mission of the organisation. The current director has a deeper understanding of the organisation and its strategic direction and emotional attachment which are at the moment very vital. In addition, he is a charismatic, committed, and visionary leader who believes in pursuing a cause to its successful end. This has been very instrumental in shaping the entire organisational environment and focus

The leadership has also developed a simple, flexible, and yet consistent management style in which members of staff supervise themselves in executing their routine tasks. The power hierarchy has been minimised greatly which has created a sense individual responsibility. Simple actions like having a collective lunch and sharing of working environments has helped to create a family like environment where people care for and support one another.

The Board

The CFSK Board is another area of strength. CFSK's Board is composed of a cross-section of individuals from different walks of life ranging from high profile professionals like professors/permanent secretary, managers, and heads of charitable organisations to successful business men and women. These individuals were nominated on the basis of what they can contribute in their professional and personal capacities. A number of board members have contributed financially, materially and professionally to the growth and sustainability of the organisation.

It is the wisdom of the board that has enabled a number of things to happen. CFSK has for example been able to operate in government schools without conflicting with the ministry of education; the inclusion of prominent personalities from prominent institutions has won CFSK the confidence and support of institutions and important personalities at the local and international levels. For the same reason CFSK has been able to secure a comfortable home within the city at no big financial cost.

The philosophy of volunteerism is a unique aspect that characterises CFSK. CFSK borrowed the idea of volunteering from Computers for Schools Canada and according the executive director perfected it to suit the local conditions. Anybody wishing to work with CFSK must start as a volunteer until a vacancy is identified. This has helped CFSK to work with minimal labour costs, while at the same time making a major contribution to developing many would be unemployed youths. Because of this arrangement, CFSK has a committed and youthful a workforce of volunteers most of whom are direct graduates from Universities and other tertiary institutions.

CFSK has been able to perform to the expectations of many of its partners. This has built the confidence of CFSK's partners and has as such become a very vital asset in their resource mobilisation drive. Many partners are willing to continue supporting the organisation because of its clean track record.

The decentralisation of refurbishing and maintenance centres to cater for remote regions is an important strategy which has helped CFSK to fulfil its obligations to its partners without much strain.

7.2 Some observed areas of weakness/challenges

One of the major challenges confronting CFSK is its continued dependency on donors with little evidence of on concrete ongoing activities to sustain the activities beyond donor support. This situation is compounded by the fact that while the government confesses that CFSK has played a key role in starting an ICT revolution in the country in general and the education sector in particular, it has not fulfilled its pledges to support CFSK's efforts to the expected tune. This still leaves the issue of sustainability in balance.

The task ahead of CFSK is still too big to imagine it will be handled by a young local NGO like CFSK with no significant financial and material support from the government.

CFSK needs to develop a system for documenting and publicising what it does. The organisation is doing wonderful work but it lacks the necessary aggressive advocacy strategy that would make it known and give it due respect and attention.

It was mentioned in 7.1 that CFSK has a nice flexible, and yet consistent leadership style. While one sees this as a positive attribute, there is an apparent truth that it is more due to the person - the director and not an institutional culture. This good experience can actually be abused when one day some other person with a different leadership orientation takes over.

7.3 Meeting CFSK's set objectives

One of the key objectives of this evaluation was to provide an overview of CFSK's support and involvement among the partner institutions with particular emphasis on the extent to which Project clients were involved in design, implementation and monitoring of program activities. It also sought to establish how CFSK has succeeded in building relationships within the member schools and what challenges and lessons learned in the implementation approaches at the coordination and service provision levels

7.3.1 Involvement of clients in the design, implementation and monitoring of project countries:

There was no evidence that CFSK's partners in particular the schools played any significant role in the design of the project. Available literature and information gathered through interviews show that CFSK either directly or indirectly through use of consultants, developed/designed the project.

There was however evidence of participation in implementation at the different levels and in different ways. CFSK for example helped in building the capacity of schools to participate in the implementation of the project as indicated in the training of school managers who later became the central actors in the implementation at school level.

The training/sensitisation by CFSK helped ICT teachers, principals, Board of governors and PTA members to implement ICT projects in their schools.

The participation took different forms, including resource, mobilisation to set up infrastructure in particular laboratories, paying networking costs, purchasing additional computers, paying training fees, and maintenance fees. The discussions below show how different partners have participated

7.3.2 BOG and PTA

The Board of Governors and PTA members as leading school managers undertook the responsibility to sensitise the school, parents and other members of the community on the value of computer studies in general and computers as a pedagogical tool in particular.

BOG and PTA members also monitor the management and use of computers in schools, they lobby for more computers and support from different sources including government and local contributions.

In addition the BOG recruits and pays ICT teachers since the Ministry does not recruit them as it does with teachers in other fields.

The two statutory institutions develop and oversee the implementation of policies that guide the management and utilisation of computers in schools.

7.3.4 The Government/MOEST

The ministry allowed CFSK to operate in public schools and has always blessed their programmes. Other government institutions like Kenya Institute of Education, and Kenya Science have been working together towards harmonising curricula. Kenya Science in particular has been hosting the training of principals, ICT teachers and BOG/PTA members.

Knowing that CFSK is playing a role which addresses government interests, the government has committed itself to offer financial support to CFSK through the ICT trust. Already 2 million shillings have been pledged by the Ministry of Education Science and Technology. In addition, the Government has also offered a tax exemption to CFSK consignments which has boosted the organisations ability to mobilise resources and deliver essential materials at a much reduced cost.

By government accepting its officials to officiate at CFSK functions, it has offered the moral backing which has gone a long way to legitimise CFSK in the eyes of the nation.

7.3.5 Participation by other partners

Funding partners interviewed in this evaluation included IDRC and Safaricom. All three partners had several things in common with regard to their participation in CFSK activities.

- a) They all viewed CFSK as a young NGO that was doing a good job and needed to be supported in whichever way possible.
- b) They had guidelines for working with CFSK, which the organisation had to observe. Periodic reporting and accounting other resources was an important requirement for all partners. Periodic accounting for funds advanced was a strict requirement before any further disbursement was also a common expectation for all.
- c) The partners recognised the independence of CFSK and looked at the organisation as a partner. As such, none of the partners tried to micro manage CFSK, although they could identify weaknesses, suggest and at times support measures for addressing such weaknesses.
- d) All partners fulfilled their part of the contract/agreement as long as CFSK met the required conditions.
- e) Partners participated in CFSK board and other activities as requested. They for example participate in launching of CFSK programmes, opening and closing training activities whenever they are invited by CFSK.
- f) After experiencing the kind of work, commitment, and value of CFSK's intervention partners have been convinced to go beyond their initial commitment and committed more funds and other forms of support. IDRC for example decided to contribute to the funding of CFSK operations and volunteers after recognising the value of the program. Safaricom, and Barclays Bank also did the same. Safaricom for example decided to engage with CFSK for a much longer period, hence the three year programme worth 34 million shillings. In the same way partners like Kenya Airways got touched and offered to transport CFSK computers within and outside the country at no cost.

7.3.6 CFSK's efforts to build relationships with the member schools

CFSK has succeeded in building strong relationships with all schools it is working with. Through a network of trained ICT teachers, schools principals and representatives of Board and

PTA, CFSK has been able to put a structure in place where the organisation is directly linked to all its partners.

CFSK has through its method of work managed to develop a culture of ownership and independence among schools regarding their computer projects. The schools do not look at CFSK as a benefactor but a partner in the introduction and management of ICTs in the school. This has been through a clear stipulation of the roles of each of the stakeholders whereby the schools are for example made aware that, while it is CFSK's role to provide computers, it is the schools to maintain those computers and provide the needed infrastructure.

CFSK has avoided falling into the trap of inviting schools to become partners, but has left its doors open to those who are interested which ends it in a position to negotiate/present its terms to the schools without any fear or favour.

Because the terms of engagement are clear, schools have no alternative but to play their roles without expecting undue favours. The transportation of faulty computers is a case in point. Whereas schools would have found it more comfortable for CFSK to pick computers, take them to the workshop and return them, the contracts compel schools to undertake that role regardless of the inconvenience. This saves CFSK the risks involved while at the same time it reminds schools of their responsibility and ownership of their computer ventures.

7.4 Key lessons and challenges in the implementation and coordination

While it is true that CFSK has achieved a lot in the few years of its existence, some of the factors on the ground suggested that CFSK could have done better if it had put into consideration a few other things.

7.4.1 Liaison with the Ministry of Education, Science and Technology

- As earlier observed the CFSK's relationship with some of the DEOs and PDEs was not very cordial as a result of lack of a formal relationship with the Ministry of Education. The close relationship between CFSK top leadership in the ministry has unfortunately not translated into an official partnership.
- CFSK also went a step further and proposed a memorandum of cooperation with the Ministry of Education Science and Technology. This initiative has also reportedly been held up by the bureaucracy within the ministry. In addition, the ministry

has on a number of occasions pledged to support CFSK but such pledges were yet to be realised.

- The absence of an official relationship/agreement binding CFSK with government has been a major limiting factor which has frustrated the possibility of developing meaningful communication channels between the two important stakeholders and bred ground for suspicion and resistance.
- A formal relationship would help CFSK to take advantage of the existing government structures like the Kenya Education Sector Support to get to schools, given its bigger and well established network.
- Involving key Ministry officials including some at the head quarters and those at the provincial and district levels would go a long way in addressing the existing tensions between CFSK and Ministry officials especially at the lower levels.

7.4.2 Sensitisation

While one appreciates the sensitisation CFSK organises for schools and school managers, this was found to be still inadequate as it only appeals to those who already know about the programme. There is a need to undertake a more aggressive advocacy drive to sell the organisation to the nation and beyond. Simple advocacy strategies like billboards and handbills, talk shows and open days have not been considered by CFSK to expose itself to as many Kenyans as possible and it is high time CFSK considered using them.

CFSK recognises this gap but argues that more aggressive advocacy and publicity would generate demand far beyond the organisations' capacity. This view notwithstanding, CFSK also has to realise that it is through such publicity that the organisation will get known to useful partners and like minded sympathisers.

7.4.3 Elimination of the high rate of computer illiteracy

While it is difficult to numerically state how much CFSK has contributed in reducing the rate of computer illiteracy, the fact that CFSK has been able to supply computers to more than (200) hundred schools out of the total 3547 public secondary schools in the country, talks a lot. This is a permanent mark in the schools so far reached, to the extent that even if CFSK stopped its operations today, the culture has been introduced and embraced by the schools.

The more than three thousand teachers, principals and other school managers trained by CFSK are a permanent seed in the system and a big investment for the country whose value cannot be reduced to simple statistical figures.

The new culture and change of attitude towards the use of ICTs in the education sector, is an invaluable benefit directly associated with CFSK. CFSK is said to be largely responsible for the government's final move to establish a national ICT policy in general, and another one directly addressing matters of ICT in education.

In conclusion one can say that CFSK has sown a seed that is likely to bear fruits for a long time and the organisation should be commended and supported further to address some of the challenges in areas such as: Internet connectivity and power supply especially in the rural areas.

7.4.4 Creation of creative learning

This is one area CFSK needs to do a little more. Apart from introducing computers in schools, and training teachers, it has not been as successful in supporting schools to use computers as a pedagogical tool. This is for two major reasons namely: lack of ready and relevant digital curricula and (b) lack of Internet connection in most of the schools. The lack of Internet has been compounded by lack of affordable electricity supply in schools located in some remote parts of the country. Nevertheless, as discussed earlier, students were making good use of computers for both education and non-educational purposes.

7.4.5 The volunteer programme

a) CFSK initiated a volunteer programme through which it recruits young people with the training and interest in computer studies. The programme has been instrumental in building the capacity of the youth interested in ICT. The fact that CFSK has used volunteering as the an inlet into the programme has also helped to bring up people with the drive and zeal for ICT and one can see a new breed of committed ICT professionals in the making;

c) In addition to engaging the otherwise would be redundant youth, it equips them with valuable skills and attitudes not only on ICT but also in other areas of life as future professionals. Values like commitment to work, independence, willingness and ability to work without close supervision, and mutual support were evident among all volunteers.

d) The spirit of volunteerism which is part of the underlying philosophy of the organisation is very important with regard to creating a sense of responsibility among the youth and willingness to serve regardless of the returns, which is very vital in a world where values are being eroded.

In view of the benefits accruing from the volunteer programme I would not hesitate to recommend that additional support is provided by stakeholders to specifically strengthen this valuable component of the programme.

7.4.6 Availability of ICT teachers

Lack of professionally

7.5 Relevance of CFSK to the Kenyan youths

To say the least, CFSK could not be any more relevant, than it is at the current point in time. A number of factors justify the relevance of CFSK in the current Kenyan situation.

a) The National policy on ICT makes a number of commitments to the Kenyan population, which cannot be solely achieved by government alone.

b) CFSK has been on the ground for more than three years which is a wealth of experience that must be tapped and utilised by government and other actors in the area of ICT.

c) Kenya still needs the likes of CFSK to penetrate deeper into un-reached areas of the country. CFSK has proven ability and willingness to go to any part of the country regardless of its location and security situation.

These factors and many others not mentioned here make CFSK a vital partner not only to government but also to any body with an intention to integrate ICTs in learning and teaching.

7.6 Recommendations on some specific issues

This evaluation has raised a number of important issues with regard to the growth, development, management and the entire running of this programme. While there is undisputed evidence of major achievements already attained through the programme, the opposite is also true that there are a number of areas which need to be addressed if the programme is to yield its best results. It is on the basis of this that the following recommendations are made:

- a) Considering the challenges associated with the training, recruitment and remuneration of ICT teachers I would like to recommend that among other things government adopts a clear policy on the training, recruitment, remuneration and deployment of ICT teachers like it does for other subjects; this would imply a change in the current recruitment practice in which ICT teachers are hired by the BOGs and PTA s; with regard to training a change in policy is necessary to include ICT as a core discipline cutting across all teachers education (like psychology or educational media/technology) to enable teachers become both ICT literate and capable of applying it as a pedagogical tool.
- b) While it is good to equip schools with computers, it would even be better to make sure that those computers are optimally used for learning purposes. The experience in the schools visited was that the majority of schools did not have access to internet largely due to the high cost of connectivity. I would like to recommend that government either directly negotiates with the different internet providers in the country for a subsidised connection rate for schools or develops a policy to address this need at a national level; It would also be useful for stakeholders like IDRC, Safaricom, Barclays and others to specifically focus on connectivity as a area to channel funds.
- c) To sustain the ongoing promising work started by CFSK, there is need for concrete sustainability strategies. Although CFSK has a business plan to address this need, the implementation process needs to be invigorated by ensuring that all that was planned is implemented according to plan. Second the operations of the ICT Trust Fund need to be concretised and priorities clearly outlined to ensure that resources are appropriately allocated and utilised;
- d) Bearing in mind the task ahead of CFSK, it is difficult to imagine that the organisation can be able to continue without the support of stakeholders. I would therefore recommend that stakeholders continue supporting CFSK activities and in particular putting in a place and operationalising a sustainability plan.
- e) While government has made a number of positive pronouncements of intend to support CFSK little has come

out in real terms. The government should come out more concretely and honour the commitments it has made because failure to do this frustrates other stakeholders who have always honoured their promises.

- f) Finally the Ministry of Education Science and Technology should quicken the implementation of the strategy for integrating ICT in education. This will go a long way in streamlining the interaction between the different stakeholders and removing the unhelpful suspicion and friction evident in the dealings between some PDEs, DEOs and CFSK.

Documents reviewed

CFSK (2006) CFSK organisational self-assessment report, CFSK Nairobi

CFSK (2006) CFSK programme brief, CFSK Nairobi

CFSK (2005) Business plan

Kivuva L, Mbaabu J and Kiboi S. (2005) "An investigation of the factors affecting CFSK curriculum implementation" an Evaluation report by CFSK Nairobi

Mbaabu J (2004) Findings from the Evaluation study undertaken by CFSK

Song S (2004) Proposal for the support of CFSK Training, thin client technology, wireless connectivity, administration and technical allowances, volunteer and evaluation. CFSK Nairobi

UNESCO (2006) Fact book on Education for All (EFA) Nairobi

Appendices

COMPUTERS FOR SCHOOLS KENYA (CFSK) - EVALUATION

LEARNER QUESTIONNAIRE

Dear Miss/Mr

We are interested in finding out about the use of Information Technology (computers) in secondary schools and we would like your help in providing answers to our questions. We are aware that the organisation, which has been closely associated with this activity, is Computers for Schools Kenya (CFSK) and many of the questions refer to it.

Please mark your answers clearly with a pencil or pen.

The information you give will not be used without your permission.

You do not have to fill in your own name or that of your school if you do not want to.

Thank you.

SECTION A: BACKGROUND INFORMATION

1. Name: _____

2. Class: _____

3. Name of School: _____

4. Province/District: _____

5. Sex:

MALE FEMALE

1

2

6. Age

SECTION B: COMPUTER USAGE

7. Do you use a computer?

YES NO

1

2

8. If no, why?

9. If yes, for how long have you been using a computer?

10. What year did you begin using the computer?

11. Where were you first introduced to the use of computers?

12. How often do you use a computer?

More than once a week	1
About once a week	2
About once a month	3
Less than once a month	4
Other (Pls. state)	5

13. What do you use a computer for? Please mark all that apply to you.

School work	1
Personal work	2
Internet and e-mail	3
Games	4
Other (please state)	5
e.g. computer clubs	

14. How well can you use a computer?

Not at all	1
Well – I can switch on a computer and run a few (1-3) programs such as word processing	2
Very well – I can run more than three programs, e-mail and the internet without help	3

15. Compared with the following people, how would you rate your computer skills?

		Most of the educators at your school	Most other students in your class
1	Less		
2	More		
3	About		

same

16. Where did you learn most of the things you know about computers?

Home	1
School	2
Computer club	3
Community Centre	4
Friend or family	5
Computer College	6
Cyber café	7
Others	

17. How well equipped do you think your school is in respect of computers?

Not well equipped	1
Fairly well equipped	2
Very well equipped	3

18. Explain your response in Q.17:

19. Who uses the computers more in your school?

Educators/teachers	1
Learners/students	2
Not sure	3
Others (specify)	4

20. Where do you mostly use a computer? Please mark all that apply to you.

My Home	1
School	2
Community Centre	3
Friend or family home	4
Parent's work place	5
Cyber café	6
Others (specify)	7

21. Is there a computer that you can use within 5-10 minutes walking distance of your classroom?

YES NO

1 2

22. Is there a computer in your classroom?

YES NO

1 2

23. Do your teachers use computers in teaching?

YES NO

1 2

24. If yes, in what subjects? Please list/name them.

25. Are your teachers competent the use of computers?

**YES NO I DON'T
KNOW**

1 2 3

26. How much time do you spend in a week learning about computers in your school?

None	1
Less than one hour	2
1-2 hours	3
Other(pls. state)	4

27. How much time do you spend in a week using computers in school?

None	1
Less than one hour	2
1-2 hours	3
Other(pls. state)	4

28. If you use the Internet, what do you use it for? Please mark all that apply to you.

- I don't use the internet**
- Homework, assignments**
- I don't use computers**
- Major projects for school**
- Personal use e.g. own work (explain)**
- E-mail**
- Entertainment;**
- Games, music etc.**
- Chat groups**
- Surfing**
- Other (please state)**

29. Have the things that you have learned from computers helped you to learn about other things, outside of computers?

YES	NO
1	2

30. If your answer to 29 above is YES, please explain

31. Had you heard of CFSK before today?

YES	No
1	2

32. If yes please explain?

33. What does CFSK do?

32. Have you taken part in any project or activity organised by CFSK?

YES	NO
1	2

33. If the answer to question 32 above is Yes, please describe the activity in which you took part

34. Are your parents involved at all in the CFSK activities?

YES NO

1 2

35. If yes, how are they involved?

37. What ICT based learning materials do you use

39. Do you find the student-computer ration appropriate:

YES NO

1 2

40. Have been you given adequate accessibility to the computers?

41. Do you really enjoy learning computers

42. what challenges do you experience in the use of computers.

43. what recommendations can you make towards the CFSK program?

Date :

Length:

Name of Researcher /data collector:

Any comments/observations?

Thank you very much

COMPUTERS FOR SCHOOLS KENYA (CFSK) - EVALUATION

TEACHER QUESTIONNAIRE

Dear Sir/Madam,

The Computers for schools Kenya has received support from the International Development Research Centre to undertake an evaluation of its programme in CFSK Partner schools. This questionnaire is intended to generate data on the activities of CFSK in Kenyan schools in particular the facilitation of the process of integrating ICTs in teaching and learning. The answers that you provide will help inform our examination of the influence of CFSK in creating an enabling environment for the use of ICT's in schools.

Please provide details as required or mark the appropriate check box clearly.
All information that you provide will be treated as confidential.
Thank you.

SECTION A: BACKGROUND INFORMATION

Name: _____

1. Post/position: (e.g. educator, head of department, principal, secretary)

2. Name of School: _____

3. District: _____

4. Province:

5. When (what year) were computers first introduced in this school?

5. List/Name all the subjects that you currently teach. If applicable

6. How many years of teaching experience do you have? Please Tick the most appropriate option.

0 - 2

1

3 - 6

2

7 - 10

3

More than 10

4

7. Sex

MALE	FEMAL
	E
1	2

8. What is your highest level of education?

SECTION B: EXTENT AND LEVEL OF COMPUTER USE

9. How computer literate do you regard yourself? Select only one answer.

Not computer literate at all	1
Fairly computer literate – can switch on a computer and run some programs such as a word processor	2
Fully computer literate – can run several programs, work with files, use e-mail and internet unassisted.	3

10. How often do you use a computer? Select one answer.

Daily	1
More than once a week	2
About once a week	3
About once a month	4
Less than once a month	5
I have never used a computer	6

11. Please Check all the statements below and indicate the one/s which apply to you: (tick more than one if applicable)

	1
I am afraid of using computers	
I was afraid of using computers in the past	2
I have never been afraid of computers	3
I do not like using computers	4
I enjoy using computers	5
I would like to learn about computers	6
I would like to learn more about computers	7

12. Compared with the following people, how would you rate your computer skills?

	Learners at	Colleagues at
	your school	your school
1	Not competent	
2	Less competent	
3	About as competent	
4	More competent	

13. Who played the primary role in your training on a computer

Private operators	2
Colleagues at work	3
Self	4
Others (specify)	5

14. have you found previous CFSK training sessions useful to you? Explain

SECTION C: RESOURCES

14. How many computers in total are in use in the whole school at present and where are they from?

1	2-5	6-10	11-15	16-20	21 and above
----------	------------	-------------	--------------	--------------	---------------------

1	2	3	4	5	6
----------	----------	----------	----------	----------	----------

15. What is the student computer ratio in your class?

16. Do you consider that your school is adequately equipped with computers?

Not well equipped	1
Fairly equipped	2
Very well equipped	3

If no in question 16, how many computers would the school need to be adequately equipped?

17. What are the computers at your school mostly used for? Select only the best answer.

For administration e.g. accounting	1
For teaching	2
For student learning	3
Research	4
Communication	5
Others (pls. state)	5

18. Please describe this use for the above option.

19. What other uses are there for most of the computers at your school other than reasons stated in 17?

Administration	1
Teaching	2
Research	3
Communication	4
Others (pls. state)	5

19. What would you like to use the computers at your school for?

20. Is there a computer within 5-10 minutes walking distance from your class?

YES	NO
1	2

SECTION D: PROFESSIONAL USE OF COMPUTERS

22. In the table below please indicate the 3 most important uses of your computers in order of importance

	Use	Rank
For pre-prepared lessons (not own content)	1	2
Development of content for lessons, Integration with subject teaching	3	
Preparation of tests and exams	4	
Preparation of attendance, mark sheets, reports etc.)	5	
Learning tasks	6	
Official Communication	7	
Research	8	
Personal use (e.g. e-mail etc pls. state)	9	
Entertainment (please explain)	10	
Other (please specify)	99	

SECTION E: ROLE OF CFSK

22. Have you ever heard of CFSK?

1	2
----------	----------

YES	NO
------------	-----------

24. What does CFSK do?

25. Do you feel that CFSK has played any role in influencing the information Communication and Technological knowledge of the learners in this school?

YES NO

1 2

26. If yes, describe the actual role played by CFSK?

27. Do you believe that the use of ICT's has had any positive influence on the teaching and learning in your school classroom?

YES NO

1 2

28. If no, why?

29. If **YES**, has CFSK played a role in this influence on the teaching and learning?

YES NO

1 2

30. Describe that role:

31. If no in 29 why?

32. Do you integrate the use ICT's in the various subjects, which you teach?

YES NO

1 2

33. If no, why?

34. If **YES**, what role did CFSK play in this integration if any?

35. Has the use of ICT's had any negative influence on the teaching and learning in your classroom?

1 2

YES NO

36. If Yes, how? Please explain.

37. If **YES**, what role did CFSK play in this influence on the teaching and learning if any?

38. Do you use the computer as an educational tool?

1 2

YES NO

39. If Yes, how often? (i).
Rarely

Always (ii). Frequently (ii).

40. If no, why?

41. Do you feel sufficiently confident in using the computer as an educational tool?

YES NO

1 2

42. If yes, at what level of confidence do you do this?

Very confident	1
Average	2
Not so confident	3
Unsure	4

43. If you feel very confident with using computers as an educational tool about, has CFSK played a role in this?

YES NO

1 2

44. If yes, please explain.

45. Does your school have access to the Internet?

YES NO

46. If **YES**, did CFSK play a role in this access?

YES NO

1 2

47. Does your school have access to e-mail facilities?

YES NO

1 2

48. If **YES**, did CFSK play a role in this access?

YES NO

1 2

49. Has your school been involved with any content development activities for ICT's in education?

YES NO

1 2

50. Has your school undertaken any curriculum development for ICT's in education?

YES NO

1 2

51. Are there any efforts being made in the area of ICT's in education in your school?

YES NO

1 2

52. If your answer to question 51 above is **YES**, what are these and who is championing these developments? Please indicate hereunder.

Development effort

Champion
(*Organisation/individual*)

53. If your answer to either or both questions 49 & 50 is YES, do you think that CFSK played a role in these developments in your school?

YES NO

1 2

54. Please explain your answer.

55. Are parents currently involved in the ICT development or CFSK activities in your school?

YES NO

1 2

56. If yes, how are they involved?

57. If no, how should they be involved?

58. Are other community members involved in ICT development or CFSK activities in your school?

YES NO

1 2

59. If yes, how?

60. What Kind of support do you get from the school administrator

Thank you very much.

Date:

Length of completion time:

Name of researcher/data collector:

Any comments/observations?

COMPUTERS FOR SCHOOLS KENYA - EVALUATION

Profile of School and other ICT related issues

:

(To be responded to by somebody in a leadership position in school)

Dear Sir/Madam,

The Computers for schools Kenya has received support from the International Development Research Centre to undertake an evaluation of its programme in CFSK Partner schools. This questionnaire is intended to generate data on the activities of CFSK in Kenyan schools in particular the facilitation of the process of integrating ICTs in teaching and learning. The answers that you provide will help inform our

examination of the influence of CFSK in creating an enabling environment for the use of ICT's in schools.

Name of School.....

Province.....

District.....

How many kilometres is the school located from Nairobi

How old is this school/ for how long has it been in existence

Who sponsors the school?

What is the student population in this school?

In case of mixed school how many males and females

Grade/class	Number of learners
Form.1	
Form.2	
Form .3	
Form.4	

6. What is the teacher population in this school?

8. What is the age range of the learners?

9). what kind of socioeconomic background do these students come from?

10). Socio-demographic and economic characteristics of the region surrounding school.

11). How many of the teachers are computer literate?

- 12) Do you feel sufficiently equipped to sustainably expand and manage activities started by CFSK in your school?
- 13) What has the school done to ensure the sustainability of the activities introduced by CFSK? (School policies, guidelines, plans etc)
- 14) What challenges do the school face in using ICT for educational delivery?
- 15) Suggest ways in which CFSK activities could be improved to enhance the teaching and learning process.
- 16) Based on your experiences with the CFSK, suggest recommendations for policy formulation on the use of ICT in education delivery.
- 17). How much money does the school invest in the use of ICT for teaching and learning each year?
- 18). What recurrent costs does the school incur on a monthly basis for using ICT in teaching and learning?
- 19). How does the school meet these costs?
- 20) What strategies does the school have to continue sustaining the use of ICT?

21). what major achievement have been made by CFSK since the inauguration of the project

23). what kind of support do you get from the BOG and The PTA in enabling the CFSK project

Thank you very much.

COMPUTERS FOR SCHOOLS KENYA (CFSK) - EVALUATION

ICT Checklist

NAME OF THE SCHOOL:

Province: _____ District _____

Name of the respondent:

Position of the respondent in school administration:

Gender:

Male **Female**

Type of computers

Please tick

New

Second hand

Recycled/refurbished

Model of computers

Please tick

286

386

486

Pentium II

Pentium III

Pentium IV

Model of computers	Numbers
<i>Please tick</i>	
286	
386	
486	
Pentium II	
Pentium III	
Pentium IV	
Others (Please Specify)	

How many computers are not working?

Nature of Internet access facilities

Please TICK

Dial-up modems using regular analogue land-line

Dial-up modems ISDN

Dial-up using satellite

Leased line

Wireless facilities

Office Network

Other, for example, television set (Specify below)

EFFECTS

Indicate using the list of areas provided below, where you think the project has had the greatest influence?

Please tick

Teaching processes

Learning processes

Education policy content and curriculum

Other, please specify

What do you think has not been achieved?

How accessible are the ICT resources accessible to:

- teachers
- students
- community

Thank you

COMPUTERS FOR SCHOOLS KENYA (CFSK) - EVALUATION

INTERVIEW SCHEDULE FOR AREA SPECIALIST

Dear Sir/Madam,

The Computers for schools Kenya has received support from the International Development Research Centre to undertake an evaluation of its programme in Kenyan schools and the country at large. This interview is intended to generate data on the activities of CFSK in Kenyan schools in particular the facilitation of the process of integrating ICTs in teaching and learning. The answers that you provide will help inform our examination of the influence of CFSK in creating an enabling environment for the use of ICT's in schools.

Please provide details as required or mark the appropriate check box clearly.

All information that you provide will be treated as confidential.

Thank you.

NAME OF INTERVIEWEE:

SPECIALIST IN:

POLICY

CONNECTIVITY

TRAINING

CONTENT

(This instrument is to be directed to Education Policy makers, Curriculum Developers and CFSK National Coordinator)

Education Policy Maker (**Section A**)

Curriculum Developers (**Sections A and C**)

CFSK National Co-ordinator (**All Sections**)

DATE OF INTERVIEW:

PLACE OF WORK:

POSITION AT WORK:

A. POLICY

(This section is to be completed by Policy makers and Curriculum developers)

1. What has been the role of CFSK in the formulation of ICT policy in education?
2. How has CFSK been involved in the implementation of such policy?
3. Is there an education policy that informs the work of CFSK and similar interventions?
4. *Please TICK* Yes No
5. If yes, give reference to that policy or those policies?
6. If no, are plans underway aimed at developing policy on ICTs in schools?

Please TICK **Yes** **No**

7. If yes, give reference to those plans?
8. Is there a legislative framework that informs the work of CFSK?

Please TICK **Yes** **No**

9. If yes, give reference to that legislative framework?
10. If no, what are your views about the legislative framework?
11. Have educators and learners played any role in the formulation of ICT policy?
Yes **No**
12. Please explain your answer to Q. 10 above.

13. Has the Ministry or any government agency with responsibility for policy, curriculum or content development played any role in the formulation of an ICT policy?

Yes **No**

14. Please explain your answer.

15. Has the CFSK influenced any change in the ICT policy?

Yes **No**

16. What policy changes (Institutional, regional or national) at secondary school level have occurred on account of CFSK?

17. What is the government doing to support CFSK and its Activities?

CONNECTIVITY

(This Section and all others to be completed by National Co-ordinator)

17. What role has CFSK played in connectivity of secondary schools?

18. What has been done?

19. Why was it done the way it was done?

20. What are the main challenges in respect of connectivity?

21. What have been the successes?

22. What failures?

23. Describe any partnerships that have developed as a result of the project?

24. What lessons about connectivity has CFSK learnt over the last two years?

EDUCATOR TRAINING

(This section is to be completed by the interviewee i.e. the Co-ordinator)

25. What is the role of CFSK in training educators in the use of ICT's in education?

26. Has CFSK's training reached its target audience?

Yes No Don't know

27. How many have been trained and in what time period?

IT Teachers

Principals

28. Do you think the training was effective? Explain

28. How effective was the training?

29. If you were to conduct the training over again what would you change and what would you retain?

Explain

31. What challenges have you encountered during the training?

32. How have you combated the challenges?

32. What partnerships have developed as a result of the training component of the project?

CONTENT AND CURRICULUM

(To be completed by Curriculum Developer)

33. Is there a national curriculum for information and communication technology teaching in Secondary?

34. Is ICT being taught in the schools currently?

35. Are there any books and or teaching/learning materials in ICT available in **the** schools?

36. What has been the nature of interventions in the area of content and curriculum development by CFSK?

37. How would you see the effects of these interventions?

38. What partnerships have developed as a result of project activities in the area of content and curriculum development? What contribution have these partners made?

39. What are the key lessons learnt? What recommendations would you make to other school networking agencies?

40. What challenges and recommendations would you make to other school networking agencies?

40. What would you like to see done in the area of content and curriculum development for information and communication technology teaching and learning in schools?

Thank you

Date:

Length of completion time:

Name of researcher/data collector:

Any comments/observations?

