



EVALUATION AND LEARNING SYSTEM FOR ACACIA

**YOUTH CYBER CLUBS
IN SENEGAL'S SCHOOL SETTING**

CASE STUDY

Final report

Research team

Ramata Molo Aw Thioune,
El Hadj Habib Camara

January 2001

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SUMMARY

This study focuses on GEEP¹'s youth cyber clubs, which were set up with the support of the Acacia Initiative - a major program within the International Development Research Center – which is a major sponsor of school networking projects in Senegal. This study, commissioned by IDRC, is an opportunity to assess progress and performance in project activities. A multidisciplinary team conducted it, with oversight from a steering committee made up of education and evaluation experts.

The study takes the form of a "*case study*" on seven (7) in-school cyber clubs in Dakar, Saint-Louis, Thiès, Fatick, Kaolack, Kolda and Ziguinchor.

These seven youth cyber clubs, like the 15 set up previously, were intended to improve teaching/learning and family life education (FLE) club management in a number of intermediate and secondary schools.

After two years of trial, the study attempts to review the "*lessons learned from developing these clubs and related activities*" with a particular emphasis on four areas: policy, connectivity, training and content. In other words, it seeks to document the experience gained in these areas and make it possible to improve ongoing or future school networking initiatives.

The study team used five (5) tools (two questionnaires, two interview guides and one reading grid) to gather qualitative data from various documents (reports, management tools, cyber complex productions) and from 242 respondents, 80% of whom are students (key project targets).

Major findings include:

- 1- **On policy:** GEEP's project is aligned with national education authorities' ambition to have a national policy for introducing and using ICTs in schools (although these plans are still at the embryonic stage). The project also tightens collaboration around such initiatives and prepares the way for the participation of grassroots communities and professionals from other sectors. Indeed, presently, partners with diverse profiles are supporting the project.
- 2- **On connectivity:** though computers are limited in number (some youth cyber clubs have only one computer), the access to servers is difficult and operational constraints abound. People from different backgrounds (students and others) use the youth cyber clubs on conditions agreed at the local level to give priority to students and teachers.

In the main, people use **ICTs** for teaching/learning, documentary research, word processing, and to a lesser extent for personal and professional correspondence via e-mail.

- 3- **On training:** vigorous efforts are being made to train the users of the cyber clubs, but these efforts are hindered by the lack of computers for group training, and of a sufficient number of qualified trainers to meet the growing demand from students.

As a result, some of the youth cyber clubs have resorted to trainers from outside, to be able to provide services to the ever growing number of users. Unfortunately though, students cannot always afford the cost.

¹ See appendix 2

4 - On content development: GEEP is pursuing vigorous efforts to develop curricula within its activities at the local level.

Even though curriculum development in the cyber clubs is still at the embryonic stage, the study shows that teachers and students are capable of collecting material from external sites and adapting the material to their specific needs in teaching/learning.

In view of the positive results achieved in some areas and people's wish that this initiative be replicated in schools nation-wide, the study notes the extreme pertinence of instituting the application of ICTs in schools.

Nevertheless, for the promoters of such an effort to make it a success in this conservative milieu, they must endeavour to make people see that ICTs are beneficial to education and will progressively change and add value to teaching/learning processes without disrupting the education system.

INTRODUCTION

Over the past years, IDRC has been implementing a pilot initiative known as ACACIA to introduce ICTs in schools and communities in Africa south of the Sahara.

In Senegal, IDRC has been collaborating closely with GEEP (a non-governmental organisation for population, environmental and development-related education and awareness raising) to open in-school youth cyber clubs at the intermediate and secondary levels.

This school networking initiative falls within efforts envisaged by national education authorities to revitalise the education system. Shortly after the initiative was launched, it drew support from public departments such as the Directorate for General Intermediate and Secondary Education, as well as long-standing technical and funding partners like GEEP, UNFPA, CLUB 2/3 Canada, the Health Ministry's PDIS and Schools Online.

With the advent of information and communication technologies world-wide, the use of **ICTs** (Information and Communication Technologies) in schools can yield concrete benefits in teaching/learning, as this initiative is expected to do, and improve the quality of education by contributing towards universal access to the Internet and computer technology.

Through the case studies on its school networking projects in three sub-Saharan African countries (including Senegal), IDRC seeks to draw on the experience it has gained from operating these clubs (considered as the most advanced) to improve its "initiative", with specific regard to policy, connectivity, training and ICT content.

The case studies also give GEEP the opportunity to review progress in its cyber clubs after two years of trial.

This is precisely what the study team has attempted to present in this document. The team itself was made up of five members:

- An education expert
- A gender expert
- A demographer/statistician
- An expert on family and social issues; and
- An IEC expert

A steering committee of education and evaluation experts supervised the team's work.

CHAPTER ONE: CONTEXTUALISING ICTs IN SCHOOLS IN SENEGAL

1.1 The social context and education framework in Senegal

Senegal is a developing country located on the Atlantic coast in West Africa's Sahel region. High population growth (2.7% per year, as against 0.9% in Canada) and environmental degradation are two endemic problems the country is facing. Like many other developing countries, Senegal's population growth is a major problem. National population growth trends reflect the overall national development trends. The fertility rate is high, while the mortality rate is dropping. As a result, the country has registered skyrocketing population growth rates (3.200.000 inhabitants in 1960 as against 8.500.000 in 1996, and about 16.900.000 in 2015 by UN projections).

Senegal's population has doubled in 25 years, and this change is particularly noticeable among young people. Indeed, young people make up the bulk of the population, with close to 58% of them below 20 years, while the country has only 5% of people who are 60 years and above. The number of school age youth (7-19 years) has increased from 580.000 in 1960 to 2.605.559 in 1992 (1.247.693 of them between 12 and 21 years). Beside rapid population growth, Senegal suffers endemic environmental degradation resulting from drought and population pressure in urban and rural areas.

Due to the persistent economic crises, in particular unemployment, most young Senegalese do not have the conditions that can enable them to enjoy moral and material fulfilment in adulthood. A good number of them resort to delinquency, prostitution and drugs. They indulge in early sex, putting themselves at risk of early births, STDs and AIDS. Surveys on adolescent sexuality suggest that over 50% of school age youth indulge in sex without prior knowledge of the risks involved. A high proportion of these young people have expressed the need for information on reproductive health and family life, and 83% of them agree that sex education should be introduced in schools (survey on adolescent sexuality among students - GEEP - 1995).

It is only lately that adolescents' reproductive health and their desire to organise themselves to preserve the environment became issues of concern for agencies implementing IEC and advocacy activities. In view of their role and contribution in the economic, social and cultural spheres, youth should be at the centre of education, training and social mobilisation strategies to ensure that the problems they are facing at present and the challenges of tomorrow are addressed most appropriately.

In an attempt to address these issues, the Groupe pour l'Etude et l'Enseignement de la Population (GEEP) and the Ministry of National Education (MEN) launched a youth education programme on population issues and phenomena to promote environmental and family life education at the intermediate and secondary levels. This initiative was meant to raise awareness and enhance behaviour change among youth in line with the provisions and principles of the Education Ministry's framework law No91.22 of 16 February 1999 (articles 1&3).

It is in this respect that GEEP has been drawing on the burgeoning growth of telecommunications at the national level to strengthen and improve the quality of its interventions in the school setting.

1.2 The technological context

Over the last ten years, Senegal's progress in the field of technology has been remarkable thanks to SONATEL, one of the sub-region's most efficient telecommunications companies and also one of the very few on the stock exchange. SONATEL has successfully moved the number of telephone subscribers from 23.000 in 1985 to 200.000 in 2000, and the cable density from 0.5 lines to 2.5 lines per 100 inhabitants.

With the advent and spread of the new communications technologies and the changes in legal frameworks and client needs (marked by the passage to multimedia systems), SONATEL pursued vigorous efforts to become more competitive and offer more efficient client services. An early investor in Internet networks, SONATEL has positioned itself as a major Internet access provider through the SENTOO web access facilities delivered by Telecom-plus.

Similarly, SONATEL has set up the Sentranet network that provides Internet, Intranet and Extranet facilities to companies. SONATEL also offers data transfer services that allow clients quick access and inter-changeable operations between the different fields, and has instituted policy to enhance the quality of services and the management of information transfers.

To implement these innovative projects, SONATEL forged a partnership with CISCO systems through the CISCO POWERED NETWORK, becoming only the second operator in Africa after UUNET (South Africa) to be a part of CISCO's programme. Nevertheless, SONATEL is not the only big national and international Internet service provider in Senegal. Others include Metissacana, Sud Information, and Refer, just to name a few.

All this shows that the technological setting in Senegal is conducive to the spread of ICTs, and that extending ICTs to the school setting is just a matter of time. Recently, public authorities launched the LOGO programme at the primary school level - a pilot initiative that ended rather abruptly. At the higher level, other initiatives are under way to promote distance learning. The UVA initiative at UCAD and the CAERENAD at ENS are concrete examples. This enabling environment offers opportunities to design a project for the school setting.

CHAPTER TWO: THE HISTORY OF CYBER JEUNES AND PROJECT DESCRIPTION

2.1 Conceptualising and planning the project

Since 1990, GEEP has been working closely with government authorities to give students a leading role in awareness-raising, training and research on population and environmental issues. GEEP's main targets in this initiative are secondary school students (13-21 years) and teachers.

In 1994, GEEP took a bold step forward that lent formal recognition to its initiatives in the school setting with the launch of the project for "*promoting family life education at the intermediate and secondary levels in Senegal*", implemented with support from UNFPA. The project was structured around three components:

- Setting up family life education (FLE) clubs
- Introducing an innovative approach to review methodology for teaching/learning on population issues and phenomena.
- Undertaking initiatives to improve environmental management based on "*recycling waste for greener school environments*". Club 2/3, a Canadian NGO, funded this last component and UNFPA helped to fund several other initiatives.
- Organising the first festival on FLE clubs (1995), as well as youth holiday camps (1995-1996), FLE regional reflection days (1996-1997), and the annual population and development contest.
- Developing teaching materials to improve teaching/learning on population issues.
- Conducting surveys on adolescent sexuality in the school setting (1995).
- Providing over half of the FLE clubs with audio-visual equipment (45 x 74, in 1996).

Setting up FLE clubs was a challenging, yet satisfying task

By December 1996, GEEP had set up 45 FLE clubs, 15 more than the 30 planned initially. In December 1997, there were 71 member clubs in the national FLE network (see network map)

In fact, GEEP's effort to set up FLE clubs coincided with pressing demands from youth for information, experience-sharing and contacts. But, because these clubs are scattered across the national territory and their number has been on the rise, the Dakar-based GEEP finds it difficult to communicate directly with them. Even the clubs themselves find it hard to communicate with one another, considering the high cost and difficulty of travelling and organising national or even regional events.

By virtue of its close partnership with Canada's Club 2/3, GEEP FLE club members find it increasingly necessary to communicate directly with youth in Club 2/3. But it has not always been possible to communicate due to the lack of adequate infrastructure.

The lack of resources, especially materials for teaching/learning, strongly hinders GEEP's work. For example, it is difficult to replicate innovative models such as interdisciplinary population education and FLE clubs. Communication with the wider world is difficult, and teachers as well as students lack the latitude to express their creativity. To sum it all, the performance of individuals, groups and, consequently, the entire education system is affected negatively.

At a time when all sectors of society are concerned with globalisation and related issues, excluding players in the education sector would be an unpardonable offence. Though youth are presented as the adults of tomorrow and as future decision-makers, trainers, businessmen, politicians, or simply key players, little is done to help them grow to fulfil that hope. It is absolutely necessary that youth be prepared early enough to address the challenges of today, and more importantly, the problems of tomorrow when they will be living in an information society.

At the second national festival on FLE clubs, organised with support from IDRC as part of Acacia's Strategy for Senegal, there were various activities, notably those on "Youth Cyber Clubs". These provided eloquent testimony that young people are not only creative and innovative, but they also have a high capacity to assimilate new experiences.

The youth in FLE clubs, as well as their supervisors and some parents, all wished that this pilot initiative should continue, expand and be decentralised after the festival. The ensuing project lasted 24 months, specifically from November 1998 to October 2000.

2.2 Framework for partnership with IDRC

The pilot project on Youth Cyber Clubs at the intermediate and secondary levels in Senegal is part of the Acacia project in Senegal.

Launched in 1997 for a period of five years, the project is a part of global initiatives to support Africans in their efforts to develop infrastructure and communication services hooked on to the global information highway. Acacia aims precisely to:

- Demonstrate how ICTs can help communities in sub-Saharan Africa, particularly women and youth, to solve their problems on development.
- Build a core knowledge base, through research and experiments, and see to it that this knowledge base is made accessible to the highest possible number to enhance self-learning.
- Kindle the interest and involvement of the international community to put ICTs in the service of development in underprivileged communities, and to improve the access of these communities to resources for information and communication (concept paper).

Within this frame, IDRC's Acacia programme has provided GEEP with support in the form of grant funding for equipping the youth cyber clubs, training for students and teachers responsible for providing oversight, hiring of a computer expert and consultants, launching the research programme, and providing documents and tools for facilitation.

2.3 Project objectives and activities

2.3.1 General objectives

The general objective of this project is to "improve the FLE club model for teaching, facilitating and raising awareness of population, environmental and sustainable development issues by introducing ICTs and opening youth cyber clubs in Senegal's schools".

2.3.2 Specific objectives

- 1) Open twelve youth cyber clubs through Senegal's national FLE club network

- 2) Promote and capitalise on achievements of FLE clubs, and set up a network for exchange between FLE clubs and Club2/3 in Canada
- 3) Build the skills of youth in FLE clubs to enable them to be more open to the community
- 4) Promote the interdisciplinary model on population teaching/learning
- 5) Study the impact of access to ICTs on the activities of FLE clubs and the performance of children at school.

2.3.3 Project activities

- a) Open twelve “**youth cyber clubs**” to develop the activities and disseminate the experience of FLE clubs in teaching/learning materials on population, reproductive health, family life education (FLE), environmental education and education for sustainable development. Each youth cyber club will be equipped with a multimedia computer, a modem, an energy backup, and a laser printer. Similarly, the cyber clubs will receive grants for space rental.
- b) Use these cyber clubs to improve and intensify information flow within the FLE network, between FLE clubs and GEEP , and between GEEP and its external partners, notably Club 2/3 in Canada.
- c) Build the skills of youth and their supervisors by training 60 trainers to use ICTs, including 40 youth leaders and 20 teachers serving as technical relays.
- d) Sensitise 10,000 students, 150 teachers and 50 school administrators to the importance of ICTs.
- e) Improve students’ school performance, teaching methods and the resources available in school resource centres.
- f) Sensitise community members to, and train them in ICTs.

2.4 Profile of project clients and beneficiaries

While the primary beneficiaries of this project will be the sixty adolescents and teachers scheduled to attend the first exercise on training of trainers, the actual number of beneficiaries will definitely be higher. In effect, the sixty primary beneficiaries are expected, in turn, to train as many other beneficiaries as possible, and extend their reach beyond the school setting to grassroots communities through awareness raising and animation (conferences, public events, cyber holiday camps, etc.).

2.5 Project resources

2.5.1 ACACIA/IDRC's contribution

The table below indicates IDRC/Acacia’s contribution
IDRC funding amounts to 76.660.000 FCFA and the equivalent of 71% of the total costs in the two years the project is going to last.

TABLE 1 : Budgetary estimate on youth cyber clubs

Item	Unit cost	Quantity	Amount/CFA
Equipment (computers/modems)	1.930.000	12	23, 160 000
Logistics, communication & consumables	1.800.000	22	21.600 000
Training, technical assistance, documentation and animation	1.825.000	22	21.900.000
Research	833.333	22	10.000.000
TOTAL	6.388.333	-----	76.660.000

2.5.2 Other resources and inputs for project implementation

This project is a part of efforts to institute an alternative strategy for integrating family life education (FLE) in Senegal’s education system. GEEP is supported in this effort by several partners, notably UNFPA, Club 2/3 in Canada and the Health Ministry that have agreed to contribute to the launch of youth cyber clubs in schools. The contributions from these partners amount respectively to 10.44%, 5.55% and 3.70% of the project’s total cost.

To contribute to the project, GEEP provides services through the project manager, the 60 student leaders, animators and teachers supervising the activities of the youth cyber clubs, as well as administrative and financial support and oversight. This contribution is estimated at 10.000.000 FCFA (9.26% of the project’s global cost).

GEEP’s other partners have contributed about 31.275.000 FCFA to the global project budget estimated at 107.935.000 FCFA, and Schools Online added a further \$20.000 through grant funding to set up a new youth cyber club and upgrade the equipment in two others.

2.6 Monitoring and evaluation system

Before launching the youth cyber clubs, “**experimental outfits**” were set up in schools to survey Knowledge, Attitudes and Practices (KAP) on population and environmental issues so that changes at the end of the project could be better assess.

Plans are underway for a longitudinal survey that will target a sample of LEA and PRT scattered across schools with youth cyber clubs to observe the changes in their perception and understanding of the opportunities offered by ICTs.

Meanwhile, the project team has sent members to the youth cyber clubs to promote the ownership of management tools and systematise annual reports for enhanced monitoring.

This study, commissioned by IDRC, is an opportunity to assess progress and performance in project activities.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Study framework

The pilot project on youth cyber clubs at the intermediate and secondary levels in Senegal's school setting, initiated in 1999 by GEEP, is one of IDRC's school networking initiatives in Africa. It is part of the ACACIA programme, designed to give disadvantaged communities, notably women and youth, access to ICTs.

The primary purpose of these school-networking projects in Africa is to promote the use of information and communication technologies in teaching/learning as a way to improve education standards in Africa. Within the frame of these activities, schools are expected to involve grassroots communities and make it easier for them to access ICTs. ACACIA is built on the rationale that *“giving disadvantaged communities in Africa access to ICTs is going to build their capacity and enable them to find new ways of taking control of the processes that affect their own development”*.

ELSA (Evaluation and Learning Systems for Acacia), is a key component of the ACACIA programme. It has been designed precisely to improve the results of Acacia by:

- Identifying and sharing best strategies and lessons learned from various pilot initiatives
- Determining the impact of Acacia in Africa
- Building local and national capacity
- Developing an integrated system for learning

Within this framework, there was an assessment after the ESLA meetings in Kenya (May 2000) and South Africa (July 2000) that included three pan-African studies on:

- The networking experience in Africa
- The Acacia experience in developing telecentres
- Exploring the role of ICTs in community development.

The ELSA team developed a guideline document defining methodology for various studies that were to be conducted together with specific project partners.

3.2 Objective of Study

With the experience gained so far, the need was to evaluate these projects and to draw lessons that can help improve subsequent school networking projects.

This evaluation concerns only the most advanced school networking projects and focuses therefore on three case studies on youth cyber clubs in Senegal, the Internet for schools project in Mozambique and the Schoolnet project in South Africa, with the aim of setting up a database that would serve as a reference for subsequent projects.

The objective of the study at this stage is to consolidate the achievements of ongoing projects, notably in:

- Enabling access to computers and connectivity to the Internet

- Building educators' and students' capacity to use ICTs to improve their level of teaching/learning
- Activity contents
- The impact of School Networking Projects (SNP) on national policies for ICT use or national policies on developing SNPs.

3.3 Research questions

The research component seeks primarily to take stock of: **the lessons from IDRC activities to develop SNPs** (concept paper from the July 2000 seminar in Johannesburg).

It seeks also, as a secondary objective, to respond to questions on four issues that will make it easier to understand the central subject under study. These four issues (policy, connectivity, training and content) provided the basis for designing tools with which to collect data during the study.

3.3.1 Policy

- Does the country have a policy on ICT use in schools?
- How does the project comply with this policy (if any)?
- How does the project specifically link to the national policy?
- What are the characteristics of other projects or initiatives for introducing ICTs in schools, if any? (Similarities and differences with the cyber project)
- How does the project contribute towards national policy, or how does national policy influence the project?
- What are the project areas?
- Has the project led to the development of new activities in schools?

3.3.2 Connectivity

- What are the technological facilities available at the school?
- How accessible are these facilities to users?
- What major technical problems have been identified?
- Who are the users? (Profile, number)
- Why do they use these facilities?
- Are other partners involved in the project? If yes, what is their contribution?
- What are the difficulties faced in connectivity?

3.3.3 Training

- What is the profile of ICT trainers?
- How many were trained at GEEP and how many in the cyber clubs?
- What is the curriculum for training? Is the material used appropriate for the training?
- Have there been any difficulties?

3.3.4 Content

- Is there an official curriculum for ICT use in schools?
- What curriculum is used in the cyber clubs?
- Does the curriculum contain any new activities?
- Is curriculum for the cyber clubs designed jointly?

- What changes have there been in school management, teaching, learning or other project areas?

3.4 Scope of the study

The study covered 7 cyber clubs, as follows:

- Four (4) cyber clubs funded by IDRC as part of the ACACIA programme
 - CEM Ababacar Sy in Tivaouane (Thies region)
 - Lycée Babacar Cobar Ndaw in Kaffrine (Kaolack region)
 - Lycée Charles De Gaulle in St. Louis (St. Louis region)
 - Lycée Aline Siteo Diatta in Oussouye (Ziguinchor region)
- One (1) cyber club funded by UNFPA: CEM Kolda (Kolda region)
- One (1) cyber club funded by Club 2/3 Canada: Lycée Delafosse in Dakar (Dakar region)
- One (1) cyber club funded by partners of the school: CEM in Dioffor (Fatick region)

TABLE 2: NUMBER OF SCHOOLS

LOCALITY	SCHOOL	NUMBER OF STUDENTS/PUPILS	NUMBER OF TEACHERS	TOTAL
Dakar	Lycée Delafosse	1300	71	1371
Fatick	CEM Dioffor	719	35	754
Tivaouane	CEM AB. SY	1400	45	1445
St. Louis	Lycée Charles De Gaulle	1300	71	1371
Kaffrine	Lycée Kobar Ndao	1383	51	1434
Kolda	CEM 1	700	37	737
Oussouye	Lycée A. Diatta	1032	50	1082
Total		7834	360	8194

These youth cyber clubs are located in schools with populations between 700 and 1400. Each school is different from the other by virtue of its geographic location and administrative status (cf. map attached). Two youth cyber clubs (Kolda and Oussouye) are particularly difficult to reach. They are very far from Dakar, very remote, and located in the war-torn southern part of the country. Conversely, the clubs in Dakar and St. Louis are located in two of Senegal's urban centres where cyber culture is in full boom both in people's homes and in public places.

The youth cyber clubs in Kaffrine and Tivaouane are located along the highway. They are the only such facilities in the area. The cyber club in Dioffor is located in the rural setting.

These youth cyber clubs have other functions, too. All of them, except the one in Dakar, serve as meeting points for schools with FLE clubs in their area of location. Some of the clubs (Kolda and Saint-Louis) even serve as regional rallying points for FLE clubs, and as reproductive health resource and counselling centres for youth.

3.5 Type of Research

Working from the fundamental issue under study: “lessons from activities to develop school networking projects” the research team focused on exploratory research.

The team conducted qualitative research to collect information (lessons learned from these case studies) on precise themes (policies on access to computers and connectivity, building capacity for teaching/learning, activity contents). The team also conducted descriptive research targeting “students” (the main project targets) to enrich the subject under study.

3.6 Information and sampling sources

Study respondents included:

On each project site:

- The local project coordinator
- Teachers
- Students
- Administrative authorities
- Other users

At the national level: The project director

The background documents included:

- The project design document
- The Education Ministry’s framework law
- The ICT policy report
- Training reports
- Youth cyber club ICT reports, management tools and products
- Photographs of the youth cyber clubs

The research team used non-probabilistic procedure to sample study respondents.

3.7 Tools for data collection

The research team used five tools to collect data:

- A student questionnaire
- A focus group interview guide
- A document reading grid
- A questionnaire for the local project team
- An interview guide for the local coordinator

These tools were field-tested at the youth cyber club in CEM SAMBA GUEYE in Dakar.

3.8 Data processing methods

The research team proceeded by a thematic approach, using a grid for analysis to review information gathered on the four target areas (policy, connectivity, training, content) and report on related activities and practices at each youth cyber club. They also used SPSS data processing software for certain aspects of the study.

3.9 Constraints

There were a few gaps in the study methodology, specifically on the reading grid, in the way the study team conducted interviews and sampled respondents.

- The team did not make judicious use of the reading grid due to the lack of appropriate tools (monitoring records, activity register). This limited use of the grid to just some interviews.
- Because some cyber clubs lack management tools or use them in an inappropriate manner, the study team found it difficult to obtain reliable data on their activities.
- During interviews at youth cyber clubs in Kolda, Delafosse and Kaffrine, each member of the study team jotted down information gathered in the form of notes. When they compared their notes later to draft a joint report, they realised that some of the information was either missing or misrepresented. In subsequent visits the team selected one "note-taker" to ensure that feedback was faithful, co-ordinated and exhaustive.
- Whenever teachers and students were put together in a focus group for discussion, the students were careful in their answers or shy to express their views. To prevent this, the team decided to form separate groups. In Diofor, Delafosse and Tivaouane where the team organised student focus groups in the presence of teachers, the teachers did not intervene directly but their presence may have had an influence on the discussion.
- Adopting non-probabilistic procedure for sampling made it difficult for the research team to generalise results and imposed a certain degree of restraint in the way they interpreted results.

CHAPTER FOUR: RESEARCH FINDINGS , SYNTHESIS AND ANALYSIS

4.1. Data presentation and analysis (information gathered)

4.1.1 Policy

- While there is no policy for the introduction and use of ICTs in schools, the Education authorities' ten-year development plan shows clear indications and raises strong hopes in that regard.
- Through the initiation of a pilot programme supported by IBM (World Link programme)

Table2: Specific characteristics of the youth cyber club project and the World Link programme.

	Youth cyber clubs	World Link Programme
Equipment (quantity)	1	10
Area of location	<ul style="list-style-type: none"> - Urban - Rural 	Urban
Focus	<ul style="list-style-type: none"> - School setting - Pre-school (FLE) - Community 	School setting
Partners	<ul style="list-style-type: none"> - IDRC/Acacia - UNFPA - Club 2/3 - PDIS/Ministry of Health - Local partners 	World Bank

Youth cyber clubs: *are more ambitious but less resourced in terms of equipment
: *have a more diverse partner base

TABLE 3: QUESTIONNAIRE AND INTERVIEW RESPONDENTS

SITE	NUMBER OF RESPONSES TO THE STUDENT QUESTIONNAIRE	NUMBER OF RESPONSES TO THE ELP QUESTIONNAIRE	NUMBER OF INTERVIEW PARTICIPANTS				TOTAL	
			Students M	F	External users	Teachers		Admin
Dakar Delafosse	17	1	1	6		3	1	29
Kaffrine	15	1	5	1		3	1	25
Tivaouane	15	1	16	10		3	1	45
Kolda	14	1	12	6	3	4		40
Diofor	15	1	7	6		11		40
Oussouye	15	1	2	3	3	3	2	29
Saint-Louis	15	1	5	7		3	1	34
TOTAL	106	7	48	39	6	30	6	242

Being the main project target group, students represent the bulk of the respondents to questionnaires and interviews (80%). Of all the respondents to questionnaires, 44% were students. It is to them the research team refers as “student respondents”.

The information gathered through interviews, documents, and data analysis (though this latter does not concern students) is presented under the four sub-headings cited above:

a) Project's conformity with national policy on the use of ICTs in schools

Senegal has not yet institutionalised the use of ICTs in schools. But, some public institutions and NGOs already use them. The Acacia pilot project on "Cyber youth clubs in Senegal's school setting" is part of IDRC's strategy in Senegal. The project boosts efforts by Education authorities to promote access to ICTs via the Internet as one way to open up young people's minds and improve the quality of education. The Education Ministry's initiative, supported by the World Bank, is called the World Links project. It was launched towards the end of 2000, with an initial objective of connecting 40 schools to the Internet. The ministry of education (MOE) ten-year education and training programme (2000-2010, Quality Education for All programme) aims to intensify the use of ICTs, by having them present in 50% of colleges. The programme is therefore mainly concerned with connecting and equipping colleges as well as training teachers. At the end of the programme, students all over Senegal will have access to 3rd generation Information and Communication Technologies and to quality education ((PDEF) Component 2: Improving the quality of teaching/learning).

b) Differences between this project and the MOE initiative

The "Cyber Youth Clubs in Senegal's School Setting" project is designed to last for two years. Like the World Links project, GEEP's project aims to facilitate connectivity and pedagogical applications. But, it goes beyond that and also seeks to improve FLE clubs management.

GEEP's project is different from the World Links project in the content of material and approaches it delivers to schools.

Youth cyber clubs do more than improve teaching/learning for students and teachers. GEEP's FLE activities are meant to upgrade youth's knowledge, decision-making and leadership skills. They are vehicles for behaviour change among youth and the wider community.

GEEP provides target schools with one computer workstation while the World Link project generally supplies 10 (including furniture).

GEEP has set up its youth cyber clubs in urban, remote and rural areas for youth, who once trained, can adopt and replicate a community-based approach to training to enable members of the community to access and benefit from the cyber clubs.

When GEEP launched this project in February 1999, it already had a 130-club membership in the FLE network. The project has made it possible for GEEP to decentralise management of FLE activities and initiate 11 pilot youth centres for information and counselling (youth forums).

The choice of sites for youth cyber clubs was based on how well they could:

- Foster decentralisation of FLE management by hosting youth cyber clubs in a school or structure selected as a regional focal point for Youth Forums. This would make it possible to endow the host structure with information tools that improve FLE activity management at the regional focal point.
- Enable certain FLE clubs to come out of their isolation in remote areas or to overcome the handicap of distance and improve communication with the executive team.

- Encourage a number of promising and consistent FLE clubs by giving them incentives, and through their example, promote excellence within the FLE network.

c) Project's contribution to National policy

The project contributes to develop access to ICTs and to improve the quality of education by:

- Training teachers
- Building skills
- Providing relevant and up-to-date teaching/learning mediums
- Consolidating the youth cyber club network
- Bringing significant changes in the school setting and making ICTs more accessible to youth, as the Acacia project is helping to do.

This project also contributes to the enhancement of administrative management in the context of better ownership of computer technology and the computerisation of school data.

d) Project's key education targets

- FLE club animation
- FLE club management
- Population education through the interdisciplinary model on GEEP's website
- Reinforcing teaching of social sciences, natural sciences and technology
- Promoting discussion forums

e) Other project targets

This project targets the strengthening and development of research capacity into the FLE clubs. Certain research issues have already been studied, such as:

- The impact of ICTs on the knowledge, attitudes and practices of student leaders and animators (LEA) in Reproductive Health and Environmental concerns.
- Experiences from rural cyber clubs during GEEP's summer holiday camps (e.g. Ndiebel in 1999 and Mboro in 2000). These experiences seek, among other things; to demonstrate the potential of ICTs, to show rural inhabitants, using concrete examples from their setting, how they can get the best out of their activities through the use of ICTs; to give those without access to computers the opportunity to understand and familiarise themselves with ICTs.

f) New activities developed in the school setting following project activities

- Services to end the isolation of certain localities and to enable them to communicate with the wider world through the Internet
- Creation of databases in different areas for easy consultation and at low cost
- Creation of a computer training centre (word processing, Internet access), a counselling centre for youth, an inter-community and inter-cyber production and exchange centre, and a research centre.

g) Local or national institutional guidelines governing project implementation

In GEEP and World Link project areas, ICTs are progressively being integrated in the school setting.

In the “Quality Education for All” programme (PDEF), the Ministry of National Education seeks to expand and intensify the use of Internet-based computer assisted teaching methods and to ensure subsequent nationwide coverage for ICTs. Progressively, ICT trial programmes are being institutionalised in school curricula.

This change in direction is expected to help formalise the training of trainers. In other words, trainers shall be hired to train or initiate other teachers/trainers and students progressively in the use of ICTs in school curricula (as a cross-cutting discipline) and during initial training (at the teachers’ training school – Ecole Normale Supérieure).

h) Partnership in project activities

GEEP has worked together with, and received support from other partners to implement the activities of this project.

As part of its programme of assistance to Senegal (1998-1999), UNFPA committed to supporting GEEP to set up 5 youth cyber clubs in youth information and counselling centres at Cheikh Anta Diop University and in four counselling offices in high schools with active FLE clubs. This support, amounts to 11.275.000 FCFA, the equivalent of 10.44% of global project costs.

Club 2/3 is a cooperation and development agency that supports GEEP in conducting an experimental programme on environmental education called “Greening schools and schools’ environments”. This initiative for environmental protection and preservation is expected to open three youth cyber clubs in some pilot schools at the rate of one cyber club per year. Club 2/3 will make contributions over a three-year period amounting to 6.000.000 FCFA, the equivalent of 5.55% of global project costs.

In addition, the Ministry of Health (MOH) has agreed, as part of a package for assistance, to support GEEP in executing a programme on awareness raising for the prevention of AIDS. The MOH provides institutional support and covers monitoring missions through an endowment of 4.000.000 FCFA, equalling 3.70% of global project cost.

Finally, Schools Online is providing assistance by upgrading equipment and setting up a new youth cyber club at CEM Banque Islamique in Guédiawaye.

4.1.2 Connectivity

a) Equipment

Available equipment includes workstations (computer and peripheral equipment) in numbers that vary from one cyber club to the other:

All computers, except those in Diofior, are Pentium computers. Tivaouane and Diofior have several computers, but only one of these computers is connected (due to the lack of funds).

Two of the youth cyber clubs (Delafosse and Diofior) have scanners and digital cameras. All the youth cyber clubs have direct telephone lines, except Diofior that uses the line that belongs to the CEM.

The infrastructure has been placed in rooms that were provided by the school authorities with support from GEEP. The rooms vary in size between 15m2 and 30m2. The only inconvenience is that they are not air-conditioned.

TABLE 4: TYPE OF EQUIPMENT

Cyber club	Micro-computer	Power back-up	Printer	Scanner	Modem	Digital camera	Telephone lines
Tivaouane	11	1	1	-	1	-	1
Oussouye	6	1	1	-	1	-	1
St. Louis	6	1	1	-	1	-	1
Kaffrine	6	1	1	-	1	-	1
Kolda	6	1	1	-	1	-	1
Delafosse	3	1	1	1	1	1	1
Diofior	6	-	1	1	1	1	1 (CEM line)
TOTAL	29	6	7	2	7	2	7

b) Source of equipment

See table for providers of available equipment:

TABLE 5: SOURCES OF EQUIPMENT

CYBER SPACE	SOURCE OF EQUIPMENT		
	IDRC ACACIA	GEEP PARTNERS (UNFPA-CLUB2/3)	SCHOOL PARTNERS
Tivaouane	1	-	10
Oussouye	1	-	5
Saint Louis	1	-	-
Kaffrine	1	-	-
Kolda	-	1	-
Delafosse	-	1	2
Diofior	-	-	6
TOTAL	4	2	23

In terms of equipment, the youth cyber clubs are resourced at varying levels. Where school authorities show strong commitment to the cyber initiative, the youth cyber clubs are endowed with more equipment, as in Tivaouane, Oussouye, and Diofior, where the school authorities have been actively involved in seeking partners through various channels.

Judging from the level of needs identified, there is a shortage of equipment. The student/machine ratio per cyber club is:

- 126 users per computer in Diofior
- 131 users per computer in Tivaouane
- 170 users per computer in Oussouye
- 457 users per computer at Delafosse
- 1434 users per computer in Kaffrine
- 700 users per computer in Kolda
- 1371 users per computer in Saint-Louis

c) Access to ICT youth cyber clubs

c1: Conditions for access:

At all youth cyber clubs, users can access equipment only when they are:

- FLE club members or pay an annual contribution at low cost for training at a rate that corresponds with the user's status – student, teacher, outside user.

- Clients who pay each time they use the club's Internet services on a minute-by-minute or an hourly basis.

It is worth noting that the youth cyber clubs charge lower prices for training than other private, for-profit, outfits in the localities concerned. And, they do this purposely to facilitate access to ICTs.

Beside the other conditions mentioned above, certain youth cyber clubs (Oussouye, Tivaoune, Saint-Louis, Kolda) request formally that before getting hooked on to the Internet, users should:

- Follow internal rules and regulations

- Fill the logbook for monitoring each time they are offered services at the cyber club (providing user's name, type of service, time duration, and amount paid).

In order to allow for rational use of the youth cyber clubs with the lack of adequate equipment, there is need to institute good management practices and ensure that users adhere to laid down rules and regulations.

c2: Pricing in the youth cyber clubs

The rates charged depend on the profile of the different youth cyber clubs.

Tivaouane charges 1000FCFA/student and 2000CFA/adult for training. Elsewhere, the prices vary between 300 FCFA and 500FCFA.

Internet services are charged by the minute and vary between 25FCFA and 35FCFA per minute, except in Diofior where the charge is 15FCFA per minute.

Even though these prices are lower than those charged by private for-profit outfits, not many students can afford them, especially in the rural setting where incomes are low.

The prices youth cyber clubs charge for connectivity are far lower than those charged by SONATEL (60FCFA per minute). As a result, the cyber clubs are subject to repetitive shortfalls. Partner grants have to be used each time to clear these shortfalls to make it possible for these youth cyber clubs to function correctly.

Teachers protest against the fact that they pay out of their pockets for students to conduct documentary research, key in data or print documents, even though they acknowledge the need for the youth cyber clubs to operate smoothly.

On this issue, one teacher in Saint-Louis said: *“We are going to continue offering our services to earn income ...The school authorities have withdrawn completely from the management of the youth cyber club ... We need money to maintain machines and buy consumables ... In fact, the funds we get are not substantial. We shall call in college clubs to key their cards ... The school authorities too must pay to process report cards, exam papers, etc. They could allocate a proportion of their budget to us. We need to discuss this at the college managers’ meeting, because the room has rendered service a great deal to the college”.*

Similarly, students in Tivaouane request their class- and schoolmates to pay 25FCFA for documentary research and keyboarding to be able to reduce operational costs.

. ***c3: Schedule (work days and hours)***

The youth cyber clubs are open generally on:

- Wednesday and Saturday afternoons (particularly for students, so that they are not tempted to neglect their studies)
- From 6 pm each day, and exceptionally between 12 and 2 pm, as well as times when the youth cyber club facilitators are available.
- Exceptionally on holidays

Considering that ICTs are not part of the school curriculum, it is easy to understand the nature of this schedule and especially the motivation of users who find the time to visit the cyber clubs at such hours.

. ***c4:Constraints on access***

Close to half of student respondents acknowledged that the youth cyber clubs are more accessible to students than to outside users. However, some students maintained that teachers most often monopolise workstations once they get access to them.

While this may result from the power imbalance between teachers and students, the actual reason is that teachers are more inclined to using the Internet than students.

Over 70% of student respondents consider that access to these facilities is difficult due to:

- Lack of computers
- High cost of services
- Lack of time

- Short time period for students' training (e.g. 1 hour per week in Diofior, 2 Wednesdays per month in Saint-Louis)
- Lack of permanent trainers in the youth cyber clubs (teachers who deliver training in these facilities still have to cope with their normal workload)
- The long wait users have to put up with.

These factors can severely hinder the activities of the youth cyber clubs, and jeopardise the objectives of the GEEP project.

A student said: *“The room is always so full and there is only one machine connected ... sometimes one has to wait for 1 or even 2 hours to access the workstations”.*

. c5: Search engines used

The sites respondents most frequently use include:

- Yahoo (36%); Francité (15.2%); Nomad (10.6%).

Other sites include: Altavista, Hotmail, Toile du Quebec, caramail, dromadaire, lockase, MSN, Francimel, web philo ...

.c6: Frequency and time of use

TABLE 6: FREQUENCY AND TIME OF USE

FREQUENCY	NUMBERS	%
More than once a day	5	4.7
More than once a week	44	41.5
Once a week	40	37.7
Once a month	3	2.8
Less than once a month	2	1.9
Non response	12	11.3
TOTAL	106	100

Close to 41.5% of student respondents use the computer more than once a week and 37.7% do so once a week.

Judging from the collected data, between 5 and 10 users on average visit the youth cyber clubs each working day, with a record high of 27 users registered in Oussouye.

Records suggest that Wednesday and Saturday afternoons are the busiest days, for which the reason may be that students do not have classes then.

A teacher said: *“When we the trainers go to teach, the room is closed most of the time because there is no permanent staff assigned to the facility ...The room is used in an irrational manner ... Many more users turn out on Wednesday afternoon ... Towards the end of last academic year, just before the Baccalaureat, the facility registered high demand, especially from students who were in search of information on admission into universities abroad”.*

It has been noted also that user turnout is high just before exams. Users spend between 30 and 60 minutes on average in the facility.

d) Connection

REFER and SONATEL are the main Internet access and service providers to the youth cyber clubs.

It was noted that users have difficulty getting hooked on to the Internet during office hours when they try to do so with the REFER server (between 8 a.m. and 12 p.m., and between 3 p.m. and 6 p.m.) because the server is saturated at these times. GEEP's last report on ICTs already highlighted this problem:

“Users of the REFER server have to wait for longer periods of time ... They choose REFER as their Internet access provider because of the annual rate of subscription is low”.

In the case where the youth cyber club uses the same telephone line as the school administrative authorities, as in Diofior, they (the youth cyber club) can only get connected after office hours even if the server is accessible.

Consequently, access to servers is easier on days when offices are closed and on working days after 6 p.m. and between 12 p.m. and 2 p.m. when administrative staff are not on duty.

e) User profiles

The users of the youth cyber clubs are mainly:

- Students
- Teachers
- School authorities

However, there are also other users not related directly with host schools such as primary school teachers, veterinary doctors, businessmen, Liberian refugees, and Economic Interest Group (EIG) members. Some youth cyber clubs fail to register the profile of all users they receive due to the lack of appropriate management tools. Others, meanwhile, list the services they provide to various users. See table below:

TABLE 7: NUMBER OF SERVICES REQUESTED (Dec. 99-July/Aug 2000)

Services Localities	By students	By teachers	By ADM	By others	Total
Saint-Louis	34	173	2	-	209
Tivaouane	21	49	5	16	91
Kaffrine	8	20	2	4	34
Diofior	-	-	-	-	92
Kolda	-	-	-	-	219
Oussouye	52	92	14	46	204
Delafosse	-	-	-	-	-
TOTAL					849

Source: management tools

NB: Delafosse did not have a service delivery logbook for the period covered. These services do not include training.

The table shows that the youth cyber clubs in Oussouye, Kolda and Saint-Louis have the highest number of users. These users are mainly adults, especially teachers.

In all the youth cyber clubs, the bulk of users come from the school setting. In Kaffrine, Saint-Louis and Tivaouane, the predominance of in-school users is even more pronounced. Respondents indicated that even the “out-of-school” users come mostly from other schools.

In Kolda, Oussouye and Diofior, the youth cyber clubs are more open to community-based users, most of whom are ‘out-of-school’ professionals from other sectors.

f) Reasons for using ICTs

73% of student respondents use **ICTs** for schoolwork and FLE club activities. 24.3% of them use **ICTs** for personal business.

A teacher said: *“Following the institution of new curricula, our colleagues of the history and geography departments engaged in documentary research on curricula themes ... We who are in the science department have not yet done so, even though we plan to consult the French site called: “examens et concours de la semaine” (this week’s exams and tests). But, I see a problem with that, for if the science department engages in documentary research we will spend plenty of time on the Internet and I just wonder who is going to pay the bills”.*

In addition to teachers and students who use **ICTs** for teaching/learning, other users employ them, including:

- The administration for personnel management and school mail
- Professional (out-of-school) businesses for keying in work-related documents and seeking contact with business partners
- Private users for personal activities such as e-mail and seeking personal contacts.

This is what a teacher in Diofior had to say: *“The youth cyber club enables me to better prepare my lessons, to have more up-to-date information on science, and to progress more quickly with my school programme”.*

A telecentre tender in Kolda said: *“Going to the youth cyber club enables me to familiarise myself with the Internet. This would be of great service to me when I transform my telecentre into a private for-profit cyber café”.*

A veterinary doctor in Kolda told us: *“The youth cyber club enables me to collaborate with other partners who are not based here. I submitted an offer from here, in response to a call for offers, and was selected”.*

The manager of the Oussouye youth cyber club told us: *“Our youth cyber club welcomes people from the local community, in particular women and petty traders in Economic Interest Groups (EIG). Let me relate just two interesting anecdotes in relation to this. A woman who is a member of a women’s association asked us to create a page for her where she could advertise her products (palm oil, smoked fish, fruits, etc). Later on she received very many requests. A trader who came to learn about the Internet fell on the Paris International Trade Fair. He requested more information about the fair through the Internet, and ended up having an invitation to attend”.*

h) Partners

The research team identified two other categories of partners beside IDRC (Acacia):

- GEEP's partners: UNFPA, Club 2/3 Canada, Ministry of Health/PDIS;
- Partners of host schools. These partners have equipped or strengthened the capacity of the youth cyber clubs. They include SMEs that deal in computers: solution 2000, informatique pour tous (computers for all), génération informatique (computer generation); Communes and schools based abroad who support local initiatives within the frame of overseas cooperation: communes in France, such as the communes of VOREE and RIEUPEYROUX, Collège Français de Chatel Guyon; NGOs: Intercultural Dimensions of Boston (USA); Benevolent individuals, notably former pupils of CEM Ababacar Sy in Tivaouane who are based at present in Canada.

Some of these partners have supplied the project with computers. Others make provision for the maintenance of equipment and/or take charge of running costs such as telephone bills.

This informal partnership is worthy of interest. It is difficult to say for how long it is going to last, especially as the State is not directly involved in initiatives at this local level.

i) Constraints

The study team observed that:

- Available computers are too few for the demand from students: the computer/student ratio varies from 1/120 to 1/1400 according on the school size.
- Telephone bills, including VAT, are too high. As a result, lines get suspended often when the bills are not paid.
- Equipment in the youth cyber clubs is frequently out of order due to weather conditions (lightening and thunder), lack of air conditioning and wrong use.
- Internet access is difficult during office hours.
- Youth cyber club trainers are not well qualified.
- Voltage capacity drops frequently (and is exacerbated by the lack of stabilizers/UPS).

Not only do these constraints hamper activities at the youth cyber clubs, they may considerably hinder the programme.

j) Challenges

The first major challenge is to ensure that all youth cyber clubs function correctly and are connected to the Internet at all times. Some animators have suggested that the Education Ministry should provide a server exclusively for schools, as is the case in France.

In other areas (Oussouye, Kolda, Kaffrine), there is need for better maintenance of equipment and qualified technicians for repairs, as none were available at the time of study.

4.1.3 – Training

Table 8 – TRAINING SITES

SITE	NUMBERS	%
HOME SETTING	5	4.7
SCHOOL SETTING	83	78.3
OTHER AREAS	3	2.8
NO ANSWER	15	14.2
TOTAL	106	100

Source: Survey, nov 2000

For students and many other users, the school setting is the site par excellence for initiation in the use of ICTs.

In certain areas (Oussouye, Kolda, Kaffrine, Diofior), the youth cyber clubs are the only outfits with computers for public use. Because income levels and the standard of living are low, people cannot afford computers at home.

In Dakar and Saint-Louis, for example, there are private for-profit cyber cafes and some parents can afford computers at home. Nevertheless, the school setting is the only area with easy access to ICTs, given the high costs charged in private for-profit outfits.

a) Trainers' profiles

Training for trainers in youth cyber clubs is delivered by teachers hired in the World Link project or by GEEP's team of managers.

In the youth cyber clubs, users are initiated in the use of ICTs by animators (PRT and LEA) or by partners of the respective schools (experts in computer science).

b) Type and duration of training

The training of trainers was organised in 5-day sessions. GEEP conducted three of the five sessions:

- 1st session from 16 – 20 March 1999
- 2nd session from 22 – 25 March 1999
- 3rd session from 14 – 19 October 2000.

In all, 100 LEA and PRT took part in these training sessions.

Initiation for users at the youth cyber clubs is conducted according to schedule (one day per week in Diofior, one Wednesday two or three times a month in Saint Louis, every Wednesday in Tivaouane and Kolda, and every day after 6 p.m. in Oussouye and at Delafosse).

In certain youth cyber clubs, facilitators deliver training every day (to adults especially), depending on their availability. They meet with teachers at off-peak hours and with out-of-school users after 6 p.m.

c) Content of training

All training programmes are articulated around:

- Presenting Windows and learning keyboarding
- Presenting services available on the Internet
- Presenting Internet exploration tools and pedagogical applications
- Using e-mail

d) Training materials

- The first two sessions for the training of trainers (March 1999) were based exclusively on work with computers. In the third session, however, trainers used a video projector and a giant screen in addition to the computers, because they considered this approach to be more practical.
- In the youth cyber clubs, the facilitators initiate learners mainly through work with computers. This is neither practical nor convenient for training students, particularly in situations where there is only one workstation.

Hence, some trainers (e.g. those in Diofior) recommend the use of video projectors with giant screens as one way to appropriately address needs in the school setting.

e) Profile and number of trainees

Between December 1999 and June 2000, the youth cyber clubs trained the following number of people: One notes that far more people have received computer training than Internet training. This may be due to the difficulty in accessing servers and/or the high cost of using the Internet.

Whatever the case, this number is far too low, considering the number of teachers and students in the host schools. For example, 81% of student respondents said they were not sufficiently skilled to use ICTs, and 82% acknowledged that they need help to be able to use the computer.

In view of the constraints identified, the lack of training is a problem that certainly needs to be addressed. But it is also worth noting that the facilitators in youth cyber clubs lend a helping hand to student users to safeguard the club's equipment by ensuring that the students do not mishandle equipment or venture on to restricted sites.

TABLE 10 : NUMBER AND PERCENTAGE OF TRAINED

CYBER CLUBS	Number of students	Number of teachers	TYPE OF TRAINING							
			COMPUTER TRAINING				INTERNET TRAINING			
			Students (%)	Teachers (%)	Administrative (%)	Others (%)	Students (%)	Teachers (%)	Administrative (%)	Others (%)
Saint-Louis	1300	72	135 (10.4)	18 (25)	3	28	10 (0.7)	18 (25)	1	
Kolda	700	-	72 (10.2)	-	-	-	12 (2.5)	-	-	
Tivaouane	1400	45	200(11.1)	15 (33)	1	-	60 (4.2)	15 (33)	1	
Kaffrine	1383	51	26(1.8)	12 (24)	5	-	15 (1.1)	5 (24)	2	
Oussouye	1032	50	205 (19.8)	12 (24)	7	13	51 (4.9)	12 (24)	7	9
Diofior	719	16	300 (41.7)	30 (187)	6	8	2 (0.2)	25 (187)	2	4
Delafosse	1300	-	87 (6.6)	6 ()	0	-	45 (3.4)	4	0	

Source: Our survey, nov 2000

f) Constraints

The constraints identified in this area include:

- Difficulties in connecting to servers
- Lack of equipment (between 120 and 1000 students per computer, depending on the youth cyber club)
- Lack of trainers specialised in computer technology (judging from the duration of training they receive, youth cyber club facilitators do not have the required level of training).
- Facilitators lack sufficient time for training, given their commitments in other areas
- The number of facilitators available is too low as compared to the number of students who need training (100 facilitators for 500 students)
- The use of ICTs has not been institutionalised in school curricula
- Lack of equipment for training, especially when it comes to training large groups with just one machine
- Some youth cyber clubs have limited space e.g. the Diofior and Kolda cyber clubs respectively measure 15m² and 25 m².

h) Partnership

GEEP entered into partnership with the World Link project to organise the first two training sessions. To deliver continuing training, GEEP works closely together with small and medium enterprises (SMEs) that deal in computers (e.g. with Junior Informatique, Informatique pour Tous, Génération Informatique), and with others such as Solution 2000 for ad hoc training requirements.

i) Activities

TABLE 11 : MOST FREQUENTLY USED PRODUCTS OR SERVICES (STUDENTS)

ITEM	NUMBER	%
Word processing	34	32.1
Search engines	41	38.7
Games	5	4.7
E-mail	17	16.0
Non response	9	8.5
TOTAL	106	100

70.8% of student respondents said that they use the computer mainly for word processing and documentary research, and specifically for schoolwork (key in exercises, tests and assignments and research work to prepare or improve certain lessons); FLE club activities (key in club reports, documentary research to prepare presentations and conferences within the framework of FLE work); office administration (key in lists of class and staff members, memos, computerising school files).

Some other activities observed in a few rare cases relate most often to schoolwork or private affairs: E-mail: personal e-mail, subscription for admission in schools abroad, discussion groups;

46% of student respondents have an e-mail address; reading of national and international daily newspapers

The manager of the Kolda youth cyber club said: *“Youth in our area are in contact with young Belgians. Through these contacts they are able to organise group discussions on a range of different issues: health, education, the rights of the child, environment, politics, democracy ... Last year, one of our students received an invitation to a group of young people that submitted the “World Claims” from youth (April 2000)”*

j) New activities

Within the framework of GEEP’s project, the youth cyber clubs have launched several new activities. These include:

- Designing teaching materials (in the form of guidelines) to make up for the lack of textbooks
- Setting up databanks (for science subjects)
- Producing cards of various sorts (membership cards, greeting cards, fancy calendars, school newsletters)
- Producing school journals
- Producing receipt books for traders
- Producing comic strips on early pregnancy (still being processed)
- Seeking admission into universities abroad through the Internet

This shows that ICTs are very helpful to users in their day-to-day activities. But, what major changes are there to see as a result of ICT use?

k) Contents identified for the use of ICT in schools

1- For students in FLE clubs and teachers, especially those active in population and environmental issues (e.g. geography, social and family economics, and natural sciences), GEEP has designed useful material that can be accessed easily on its website (www.refer.sn/sngal_ct/rec/geep). This includes:

- FLE club management tools
- An interdisciplinary model for population and environmental education developed with support from UNFPA
- A peer education model designed in collaboration with UNESCO

2- Students who have access to these tools shall be able to improve management in FLE clubs, upgrade their knowledge in population and environmental issues, as well as on a range of teaching approaches.

3- The administrative units in certain schools that are hosting the youth cyber clubs do have software for the management of staff and students and for numeracy operations.

GEEP’s web page also contains information that gives readers a better understanding of the group itself (how it is organised, its activities, and partners).

It is worth noting, however, that some of GEEP’s key publications are not on its web site, e.g. the newsletter “La Lettre du GEEP” and two publications on environment and reproductive health respectively.

The youth cyber clubs have information on certain subjects that they have succeeded to download through documentary research, or information that has been prepared by teachers on:

- The history of art
- The map of conflict areas in Africa (downloaded from Monde Diplomatique)
- The geography and economies of ALENA member States (Canada-Mexico-USA) through the Nomad search engine
- Philosophy on the philosophy web site (using the Yahoo search engine www.webphilo.com)
- Authors of XIX French literature
- AIDS
- Malaria
- Reproductive health
- Cloning
- XVI century Africa
- Poverty issues
- Environment (courbettes.free.fr)
- Baccalauréat (French public exam site)
- Exercises in Maths, natural science and applied science
- Form four lessons on micro-biology, the human defence mechanism and infectious diseases
- Civic education for form four students in Senegal's education system
- Aids in Africa
- Pollution and environment (www.cybereciences.com)
- Gardening (www.bile.qe.ca)
- Webexpert installation pack (www.visie.com/webexpert)
- The human body (<http://levillage.ifrance.com>)
- Hunger (www.fao.org/gender/statec)
- Immigration (canadavisa.com)

This data was compiled in part by teachers in schools hosting youth cyber clubs. While respondents affirmed that they regularly visited GEEP's website, nothing attests to this. This does not exclude the fact that reproductive health issues are not taken into account (see list above).

Respondents mentioned also that students had conducted documentary research on subjects that were not mentioned at all. The main areas concerned are history and geography (33%), French language (13.2%), graphics and art, as well as English Language, civic education, natural sciences, applied sciences, maths and economics.

On education issues, the most frequently used search engines are Yahoo (26.2%), Francité (21.2%), Nomad (14.3), Hotmail (11.9%) and Altavista (11.9%).

On reproductive health issues, they most frequently used are Francité (21.2%), Nomad (18.2%), Yahoo (18.4%), Hotmail (18.2%).

On environmental issues, the most-cited search engines are Francité (26.7%), Nomad (20%), Yahoo (20%), and Altavista (20%).

The youth cyber clubs have also compiled and stored data on the Internet about discussion forums they initiated. These include:

- ICTs in our day-to-day lives, initiated by the Oussouye-based youth cyber club
- “Why students drop out of school at the intermediate level”, initiated by the Tivaouane youth cyber club
- ICTs in Development, initiated by Delafosse

While several other youth cyber clubs did participate in the first two forums, only the Kolda youth cyber club participated in the last discussion forum.

4.2 The effects of the project

It is certainly difficult to measure the real impact that the ICT project has had on the activities of schools, given the duration of the pilot phase (less than two years) and the constraints that have been identified (e.g. the lack or poor use of tools for management in certain youth cyber clubs). Using the initial objectives of the project as an entry point, this study attempts to measure progress (what has been done in all that was planned) and indicate whether the resulting trend has been one of success or failure.

Working from a set of indicators, this section of the study seeks to situate the level of progress for each activity.

a) Activity 1

Indicator: twelve (12) “youth cyber clubs” are established as part of a system (network) for electronic communication in the school setting.

Level of progress: This network boasts 22 youth cyber clubs at present, thanks to the project’s diverse partner base.

b) Activity 2

Indicator: This e-network is used to improve and intensify information flow within the network of FLE clubs, between the network and GEEP’s team of managers and between the clubs and external partners.

Level of progress: Each youth cyber club has an e-mail address. 5 of the 7 youth cyber clubs under study are currently designing their own web pages (Diofior, Kolda, Oussouye, Tivaouane, Delafosse).

- There is evidence of communication via e-mail between the youth cyber clubs themselves and between the clubs and GEEP’s team of managers (reports, mail).
- Three (3) target youth cyber clubs (Oussouye, Tivaouane, Delafosse) have already engaged in discussion forums that focused respectively on school drop-outs, **ICTs** in our day-to-day lives, and **ICTs** in development.
- The Kolda and Diofior youth cyber clubs do (through their FLE clubs) correspond with young people in France (Diofior), Egypt and Pakistan (Kolda). Last year, they were admitted as

members into a discussion group with young Belgians (Kolda) for the exchange of ideas on such themes as health, environment, the rights of the child, education.

- The national network of FLE clubs has since May 2000 been sharing experience (on environmental issues, youth activities, anti-personnel landmines and globalisation) with youth from Quebec, Burkina Faso, Chile and Paraguay on Club 2/3 Canada's site (through RIJ 2/3 – the International Youth Network 2/3).

c) Activity 3

Indicator: Build the skills of youth and their supervisors by training 60 trainers in the use of ICTs.

Level of progress: three training sessions have already been organised for over 100 youth cyber club facilitators (a total 166% of the initial objective).

d) Activity 4

Indicator: Sensitising 10 000 students, 150 teachers and 50 administrative officers to the importance of ICTs.

Level of progress: Considering that the number of people who have been sensitised in the seven youth cyber clubs under study have received training in each of the clubs, the level of progress will be as follows:

- Number of students who have received training in commonly used computer applications: 1025 (10%)
- Number of students who have received training on how to use the Internet: 195 (0.19% of target group)
- Number of teachers who have received training in commonly used computer applications: 93 (62%)
- Number of teachers who have received training on how to use the Internet 79 (52%)
- Number of administrative officers who have received training in commonly used computer applications: 9 (18%)
- Number of administrative officers who have received training on how to use the Internet: 4 (8%)

This data does not include all teachers and administrative officers who have received training (some youth cyber clubs have no logbooks on service delivery, while some have not been keeping their books well enough to provide reliable data).

If one considers only those who have received training on how to use the Internet, for example, the partial results from the 7 youth cyber clubs under study show a clear bias in favour of teachers. The discrepancy in levels of progress for teachers and administrative officers shows that there are difficulties at this stage.

e) Activity 5

Indicators: Improved school performance for students, teaching methods for teachers and documentation for the school authorities.

Level of progress:

Students' performance: When respondents were asked whether the youth cyber club had helped to improve their performance at school: 70.8% said Yes; 9.4% said No; 19.8% had no answer

On their part, several teachers, administrators and students said there was an improvement.

A school authority in Saint-Louis said: *“Last year, the history, geography and science teachers used the youth cyber club quite a lot. Incidentally, the school obtained particularly satisfactory results on these subjects during the baccalauréat”.*

A student from Saint-Louis said: *“Last year I used documents from the Monde Diplomatique on the Internet to prepare for the public exam on Population and Development, and I passed”.*

A teacher thinks: *“ the change in students comes from the fact that they can now access maps, data, and notes on interesting pieces of information and use them to improve their performance at school”.*

A student from Kaffrine says: *“Last year while I was in the Lower Sixth form, our programme dealt with development and under-development. We sought documentation from the Monde Diplomatique, and found out that we had information that was richer than what our teachers had given us. We used this information together and did very well at the exam”.*

Students use ICTs to seek information through documentary research and complement the information they receive in class. They think this information is more complete and up-to-date than what they receive from their teachers. Usually, students from the same class or level share the cost of undertaking documentary research on a theme in their curriculum via the Internet, including the cost of printing documents. This helps them to reduce cost and makes it easier for them to have access to these services.

.e1: Teaching methods

Teachers who use ICTs for teaching/learning have the tendency to:

- Key in their exercises, notes and exam questions all by themselves (this helps to cut down on the leaks before the examination)
- Provide their students with more up-to-date maps, graphics, notes and other data
- Encourage their students to undertake preparatory documentary research via the Internet even before they deal with topics in class.

Here is what a number of teachers had to say in this regard.

Teacher from Diofior: *“We can key information, surf on the Internet and expect to improve the ways in which we teach. We can make amendments to our material using documentary research if need be. I try to update my material each time I come across more current data”.*

According to a teacher from Saint-Louis, *“We have observed a clear improvement in the quality of documents. We used to work under very difficult conditions, using stencils or pens to draw diagrams. When we needed notes, secretaries who were not familiar with technical terms would type some of the material and produce unreadable work. Since I began keying material by myself, I produce more presentable documents. A lot has changed for students, for they can now access maps, statistical data and other material of interest to them. This certainly has a positive impact on their performance at school”.*

e2: Access to documents

Students can design guidelines (as in Kaffrine, Tivaouane, St. Louis), set up databanks for given exercises (at Tivaouane, Saint-Louis), or download material for exercises from other websites (all the youth cyber clubs).

e3: School administration gains in time, efficiency and energy spent on specific tasks have been the key changes ICTs have brought to this area (financial matters), notably in:

- Transmitting administrative documents, including letters, to superiors (School Inspectorate, Ministry Officials) via e-mail.
- Keying and printing various documents (notebooks, report cards, registers, etc.) that formerly meant hiring the services of a private printer.
- Setting up databanks (on lists of staff and students, memos,).

In view of the above indicators, the overall trend is a positive one. While it would be premature to say the project has been implemented successfully, one can rightly say the ground has been prepared for good results. Meanwhile, there is need to exercise caution. This trend can be reversed, in view of the major constraints that have been identified.

This study on youth cyber clubs highlights the diverse range of activities conducted for interpersonal communication (via e-mail), data collection, team work (teachers and students), use of professional services (in the school and out-of-school settings), publications on the Internet and self-learning.

These activities can open up new prospects for the school and community settings in certain cases, considering the positive impact they have had already on students and other users.

It is hoped that the necessary adjustments shall be made to the youth cyber clubs following the diagnosis of the study so as to consolidate the progress made so far.

CHAPTER 5: LESSONS LEARNED AND RECOMMANDATIONS

5.1 Lessons learned

The youth cyber club initiative holds some interesting lessons. This section of the report presents these lessons under the following four sub-headings:

5.1.1 Policy

- The project on youth cyber clubs, implemented with support from IDRC's Acacia project, contributes meaningfully to efforts by Senegal's education authorities to extend the use of ICTs through the PDEF's World Link project.
- The project's positive results can be used to inform decision-making among education authorities in Senegal before they embark on introducing ICTs in schools. The Director of Intermediate and Secondary education in Senegal echoed this wish at the Schoolnet Africa workshop, held in Okahanda, Namibia from 17-20 July 2000.
- GEEP's project is one that promotes partnership. It has been possible to implement the project largely because of the contributions made by partners with different backgrounds (national and international institutions, NGO collectives, SME, individuals). These contributions have taken different forms (supplying technological equipment, providing support for maintenance, training, and grants). Initially, Acacia was the sole partner in this project initiative. Following efforts by GEEP, other partners began joining in (at the central level), including some schools (at the local level).

This project is one with a strong community focus. It seeks, as much as possible, to give users from the community setting (out-of-school users) access to the cyber clubs. Each year, the project initiates a demonstration on ICTs for inhabitants of rural areas (rural cyber clubs) during FLE summer holiday camps in the rural setting.

5.1.2 Connectivity

By setting up youth cyber clubs in schools the project has created strong demand (for training and Internet services) that is often difficult to satisfy due mainly to:

- The lack of intranet facilities in some of the youth cyber clubs with a sufficient number of workstations
- The insufficient number of workstations in other youth cyber clubs
- The lack of skilled trainers in ICTs in the youth cyber clubs
- The frequent breakdowns resulting from poor maintenance or poor manipulation of equipment

The youth cyber clubs are open to all users who respect the conditions in force at the local level. To avoid competition among the various categories of users, the cyber clubs have reserved:

- Wednesday afternoons for students
- office hours, and sometimes Saturday afternoons and public holidays, for teachers
- Saturday afternoons, public holidays, working days from 12 p.m. – 3 p.m. and after 6 p.m., for out-of-school users, depending on the availability of the cyber club facilitators.

The youth cyber clubs are used mainly for teaching/learning, and to a lesser extent for private business and professional out-of-school activities. Word processing and search engines are the most frequently used services. Among those search engines, the most frequently used are Yahoo, Francité and Nomad.

Some youth cyber clubs have taken full advantage of decentralised cooperation (via their communes) or opportunities at the local level to upgrade their equipment. Difficulty in accessing servers during office hours (from 8 a.m. – 12 p.m., and from 3 p.m. – 5 p.m.) is one of the major difficulties facing youth cyber clubs.

5.1.3. Training

The 5-day training delivered in one stretch to youth cyber club facilitators does not provide them with the necessary skills to implement and oversee training in a satisfactory manner.

Training in the youth cyber clubs is hindered in large part due to:

- The lack of workstations (computers and ancillary equipment)
- The lack of appropriate material for training (group training, for example)
- The unavailability of trainers (because of tight schedules in their respective areas of activity)

Some youth cyber clubs have forged partnerships with computer-selling SMEs to improve the quality of training they offer. The cost of training in youth cyber clubs is lower than in the private for-profit sector, yet most students in the rural setting are often unable to afford training even at low cost. As **ICTs** training has not been institutionalised in schools, it is not considered a part of the curriculum and appears instead as extra work for youth cyber club facilitators.

5.1.4. Content development

GEEP has deployed a considerable amount of energy to develop content for its activities and adapt it to the needs of students and teachers at the local level. Although content development is still in the embryonic stage, students and teachers can adapt material from other sources to their teaching/learning needs.

Youth cyber clubs produce a varied range of material. Most of the material is on schoolwork or FLE club activities. It is either published by GEEP, downloaded or produced by teachers, and sometimes, by students themselves.

Youth cyber clubs give youth direct access via the Internet to useful material on subjects of interest to them. However, this can be problematic where students extract material from Internet based sources without the advice of the teacher(s) in the discipline concerned.

The project has made it possible for certain schools that host youth cyber clubs to develop a series of new curricula and extra-curricula services that could yield revenue if managed appropriately (design and production of guidelines, cards, receipts, report cards, etc.).

The project has brought about changes in the host schools, particularly:

- In school management (software for staff management, keying class lists, designing and producing various work documents, e-mail)
- In teaching/learning (developing guidelines, databanks, various materials, documentary research to complement and upgrade classroom lessons and data).

Respondents said that these changes can have a positive impact on students' performance at school, but the scope of impact still needs to be defined clearly.

The results obtained from the different youth cyber clubs suggest that all the clubs are operational in spite of the several constraints they are confronted with. But, they do not all have the same level of dynamism.

The Dakar and Kaffrine youth cyber clubs appear to be less dynamic than the others. This may be because the Dakar club was opened behind schedule (April 2000) and students in Kaffrine were persistently on strike between February, March and April.

The other youth cyber clubs seem to have been well accepted by and integrated in the activities of the host schools. But, in view of the results obtained in Internet training and students' requests for services (students are the main project targets), they (the students) are not the main users of the facility. Instead, it is the teachers who use the youth cyber clubs while students benefit from the work they do.

The youth cyber clubs in Oussouye, Kolda, Diofior and to a lesser extent, Tivaouane, are inclined towards community-based users, probably because of their geographical location and administrative status, and the lack of private for-profit cyber outfits in these localities.

5.2 Thinking ahead

At the **policy level**, it would be interesting to work with public authorities on designing possible national strategies that would draw from the experience of this school networking initiative. These national strategies could then help formulate national policy on the application of **ICTs** in schools. It is indeed important to note that, in this respect, the World Link programme does not have the same objectives or approaches as this project.

It would be interesting also to think about partnership, a fundamental dimension of this project, in terms of durability and sustainability. The bulk of funding for this project comes from development partners. But, if they decide to phase out funding for the project, what measures shall be taken to replace them? If the State adopted a clear policy on the application of **ICTs** in schools, the situation would be less problematic and an environment for innovative types of partnerships would be enabled (public-private partnerships for example). Even then, what kind of partnership would public authorities propose to promote?

Obviously, the fact that some of the youth cyber clubs are community-oriented provides a means of encouraging them to move towards a more profit-oriented service delivery aimed at making them self-reliant. But, what measures should be taken to ensure that this option does not hinder the orientation of these cyber clubs towards the school setting?

Connectivity

In view of the constraints identified, how would the youth cyber clubs continue to operate when the prices they charge cannot even cover running costs? What strategies should be implemented to address this situation? What guidelines should the project develop in this regard for the youth cyber clubs?

It is true that the cyber clubs have planned their activities in a way that prevents clashes between various users. How could the existing schedules be reconciled with the possibility of giving each user unlimited access to the cyber facility?

Because of the difficulties in connecting to servers, it would be interesting to look into the possibility of using other providers, even if this is more costly. How can this be arranged? Is it worthwhile? It would be essential to know beforehand the running costs of the youth cyber clubs (cost of connection, consumables, and repairs) and in what proportion these costs can be covered.

Training

Training is probably the project's weakest component. Training has been noted to be inadequate, often unsuited to users' needs and conducted with little or no regard for concerns related to maintenance". The cyber club facilitators themselves have frequently expressed these inadequacies. Furthermore, students are, most often, not able to afford the prices charged for training at the youth cyber clubs. In view of all these challenges, what strategies could be put in place to address them?

Training puts yet another burden on facilitators and students who already have heavy workloads and tight schedules. In what ways can the training be institutionalised? In other words, how can a training curriculum that combines current school curricula and activities by GEEP become part of the timetable?

With regard to content, GEEP has made significant efforts on the Internet, and on material in its area of activity. Nevertheless, it would be interesting to know how the youth cyber clubs make use of this and the impact this has on the management of FLE clubs.

Similarly, the youth cyber clubs produce teaching/learning materials by adapting information from external sites. Does this have any effect on performances at school or on the management of FLE clubs? In much the same way, can the youth cyber clubs be given credit for the brilliant performances of students in Diofior and Saint Louis? In other words, is there a direct relation between student/teacher access to **ICTs** and positive results in teaching/learning? Certainly, considerable progress has been made if one considers the level of achievement in the implementation of project activities. Nevertheless, to be able to measure this progress against Acacia's underlying objective, it would be interesting to know the extent to which the project has enabled behaviour change. In other words, can the early project accomplishments highlighted in this study be considered as factors of change aligned with the Acacia philosophy? We should be looking for ways of knowing whether the schools that host the youth cyber clubs have the necessary conditions to make this philosophy a reality.

All these questions give us food for thought that could form the basis of subsequent research exercises aimed at enhancing the project's sustainability. However, before moving to the implementation phase, this study seeks to make a few suggestions.

5.3 Suggestions/recommendations

In view of the findings in this study, the research team has made a number of suggestions towards sustainability, working on the assumption that the application of **ICTs** in schools will be institutionalised. The suggestions are presented under the study's four target areas.

5.3.1 Policy

The State should:

- See to it that there is coordination between initiatives by GEEP and MEN, by installing a common network (youth cyber clubs and World Link)
- Ensure that all material and equipment for the school networking initiatives is tax free
- Encourage private donors to promote school networking initiatives
- Enable youth cyber clubs to take full advantage of the facilities offered by SONATEL to World Link (tax exemption, free installation of telephone lines and connection fees less than 50.000FCFA every two months).

5.3.2 Connectivity

The State could set up a server for schools.

The project could also:

- Network all computers in each youth cyber club
- Upgrade technical equipment by forging meaningful partnerships, while inviting contributions from the Parents' Association (quota on school fees) and the host schools (part of the administrative department's budget should be allocated to the youth cyber clubs)
- Recruit an expert on **ICTs** for each youth cyber club, or failing this, see to it that teachers/supervisors can give more time to the youth cyber clubs
- Negotiate with SONATEL the possibility of suppressing VAT from bills sent to the youth cyber clubs.

5.3.3 Training

The State should institute refresher courses for youth cyber club animators/trainers.

School authorities should include training as a curricula activity, use video projectors and giant screens to deliver group training, use curricula subjects, as much as possible, as mediums for training students in the use of **ICTs**.

Education authorities should include **ICTs** in the curricula of teachers' training institutions (initial training).

5.3.4 Content

The State should encourage the design and development of content adapted to the local system and the national policy for education and training.

The project should set up a committee for curricula development and validation at the local level, encourage the exchange of content among youth cyber clubs, and promote service delivery at the local level.

CONCLUSION

Perpetuating the experience of youth cyber clubs is going to be a logical next step. This is a wish expressed strongly by users. It is also the request of youth cyber club managers and the authorities of host schools. Nevertheless, attempting to popularise this initiative would be quite challenging. Through its findings, this study shows that introducing **ICTs** in schools and grassroots communities in Africa is a useful and feasible endeavour (the continent has for long been left out of the technological bandwagon). The initiative is one that could be summarised as “LEARNING TO ANTICIPATE AND INNOVATE”, one in which all Acacia youth cyber clubs would like to participate.

Other partners have understood the key importance of this initiative and are already taking concrete steps to replicate the Acacia programme. A case in point is the programme by School One Line, an American NGO whose initiative builds on the lessons learned from the pilot project on youth cyber clubs. Recently, a new cyber club was set up in CEM Banque Islamique with six workstations, while the cyber clubs in Lycée Blaise Diagne (Dakar), and CEM Kolda (Kolda) both received two workstations each to upgrade their equipment.

The students and teachers who shall be using the new equipment in these cyber clubs are certainly going to commit themselves a lot more to producing curricula suited to the history, institutions, culture, and geography of their regions and country. This material could then be published on the Internet.

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APPENDICES

Appendice 1: Some views expressed by students, teachers and out-of-schools users (Excerpts from interviews)

Following the institution of new curricula, our colleagues of the history and geography departments engaged in documentary research on curricula themes ... We who are in the science department have not yet done so, even though we plan to consult the French site: this week's exams and tests. But, I see a problem with that, for if the science laboratory engages in documentary research we will spend plenty of time on the Internet and I just wonder who is going to pay the bills. We need to discuss this with the administrative department.

205 – As there is no permanent staff, the room is closed most of the time when we the supervisors have lessons ... The room is not utilised in a rational manner ... It is on Wednesday afternoons that attendance is at its peak ... Last year, towards the end of the school year just before the baccalauréat the demand from students was extremely high, especially from those who were seeking admission in universities abroad via the Internet.

304 – We are going to continue offering our services to earn income ... The school authorities have withdrawn completely from the management of the youth cyber club ... We need money to maintain machines and buy consumables ... In fact, the funds we get are not substantial. We shall call in college clubs to key in their cards ... The school authorities too must pay to process report cards, exam papers, etc. They could allocate a proportion of their budget to us. We need to discuss this at the college managers' meeting, because the room has rendered considerable service to the college.

303 – Last year I was in the lower sixth form. The geography curriculum included development and under-development. We downloaded material from *le monde diplomatique* and had a rich variety of information to complement material the teacher had given us. We passed our geography exam with flying colours.

- Students are more practical. They are making great progress. They have developed a journal all by themselves using the computer.

We are in a commercial school that delivers computer training. Students in the fifth form learn about computer technology in theory. It is only in the upper sixth form that they begin to use the computer. The youth cyber club offers them the opportunity to acquire advanced practical training. I think there is need for more workstations.

- Last year the students in my class prepared an expose with material drawn totally from the Internet. I know this because I ask them often to quote sources, and they gave me web sites they had used.
 - On certain issues, I get information from students. I certainly cannot verify how authentic the information is because I do not use computers. I use my good judgement to evaluate what they tell me and encourage them to continue using the computer.
- By going to the youth cyber clubs students, teachers and administrators have a better understanding of the mechanisms for accessing and processing information. This enables school authorities to better manage staff and other issues, as well as school activities and projects for the year etc.

Q303 – It is true that with access to the Internet and word processing, teachers and students have quick access to knowledge and can improve their performance if they manage this knowledge well.

Q304 - In order to ensure sustainability in this zone, the project should:

- Reduce cost considered exorbitant at present
- Strengthen the capacity of the cyber clubs by providing more workstations to attract several users
- Promote project activities in other services (administrative and other staff).

Q 301 – The project enhances our teaching/learning efforts. We can do so many things, such as read newspapers, the history of our country and the world, prepare our presentations and upgrade our knowledge.

Q 303 - Yes, in the sense that I can contact people all over the world. I am able to undertake research on key figures the world over and learn about other cultures.

Q 301 – Yes, it helps us to learn more and enhance our level of general knowledge, to prepare our presentations and read papers.

Q 303 – Yes, it influences school performance. Since I started going to the youth cyber club I have learned many things. Authors and libraries no longer have secrets for me.

304 – Increase the number of workstations ... Let State authorities intervene and ask SONATEL to reduce telephone bills. The State should also waive VAT for youth cyber clubs.

209 – There should be an appropriate policy for informing more people. Services should be made more accessible to target groups.

304 – There should be a more vigorous effort to sensitise students, teachers, administrators and parents so that they contribute to render the project sustainable by increasing the number of workstations and diversifying the activities of youth cyber clubs.

206 – Word processing enables us to key in our notes, documents and other resources. The Internet enables us to update our notes on history and geography, to develop our general knowledge, to do research in areas where there is almost no documentation in Oussouye. Yes, the Internet is indispensable, quick and practical for communication with people all over the world.

302 – Going to the youth cyber clubs helps improve our club activities through training or use of computers (word processing, spreadsheets, mapping), correspondence with other clubs in Senegal and the world, documentary research on subjects for presentations or conferences through the Internet.

303 – Going to the youth cyber clubs enables students to get information on all issues just like their contemporaries across the world, and enhances performance at school.

Q210 - Since we cannot access the Internet easily during office hours, our partners in France provided us with another connection. But, it is difficult to get a line here. We have been asked to pay a deposit of 200.000FCFA for the line.

- Q210 - Computer training does not feature on our school curriculum. Training students in the use of computers appears therefore as extra work.
- Q301 - Solution 2000 provided us with software to set up a documentary database for library resources. We have started to key in the data. Last year, plans were underway to computerise this.
- Q304 - To popularise the use of computers, training should be delivered to an even greater number of people using video projectors with giant screens. One such device would be enough (in theory) to train several students at a time.
- ICTs could be useful in the rural setting. It would be possible to seek other techniques through the Internet for use in rural areas. Farmers could, for example, use their time better during the farming season when they need to work on their farms.

Appendice 2: Presenting GEEP

GEEP is an NGO of researchers, teachers and experts on population, environment, citizenship and sustainable development issues and phenomena. It is a network of resource persons who see themselves as a force for social mobilisation, particularly among young students. GEEP seeks to promote Family Life Education (FLE) among students and teachers, to raise awareness of sexual health, environmental preservation and behaviour change at the secondary and higher levels, and to promote public awareness of the interplay between population, environment, citizenship and sustainable development.

In its activities for students and teachers, GEEP faces challenges every day on specific issues and the population and development field.

To address these challenges recognising the key role of education and training in mobilising people against underdevelopment, GEEP has designed a specific programme for youth aimed at:

- Raising awareness of population issues and phenomena to promote behaviour change in reproductive and sexual health
- Taking environmental education to the school and rural settings through community-based environment-friendly initiatives
- Developing leadership skills among youth through civic education and human rights education
- Setting up an international inter-school network for education on sustainable development.

Mr. Babacar Fall, Senior lecturer at Ecole Normale Supérieure and co-ordinator of GEEP, is in charge of the pilot project on youth cyber clubs in the school setting in Senegal.

Appendice 3: The education system in Senegal

Senegal's constitution stipulates that education and training policy is the prerogative of the State. The Ministry of National Education, and Technical and Vocational Training defines and implements this policy with assistance from a Minister Delegate and the Minister of Higher Education and Scientific Research.

The State provides a public service by so doing, and sees to it that Framework law No 91-22 of 16 February 1991 is applied accordingly, and that an efficient education and training system is in place. It ensures that norms are respected and seeks actively to involve various players, and to solicit private, individual and collective initiatives in an equitable and meaningful manner.

Senegal's education system includes six main sectors that fall under the formal and non-formal sector.

The formal Sector includes

- The basic level, with:
 - Three classes in preschool: “petite, moyenne and grande section”
 - Elementary classes including: Cours d’Initiation (CI), Cours Préparatoire (CP), Cours élémentaire year one (CEI), cours élémentaire year two (CE2), cours moyen year one (CM1) and cours moyen year two (CM2).
 - Intermediate education delivered in intermediate schools for four years (from 1st form to 5th form). The student population at this level is close to 25% of total student population.
- Three years of **comprehensive secondary education** for intermediate level graduates, including the “séconde, première and terminale” that offer high school education in the Arts (série “L”) and the Sciences (série “S”) for the baccalauréat.
- **Technical and vocational training** in technical high schools and vocational schools
- **Higher education** for high school graduates attending university and higher institutions of learning. These institutions train executives and technical experts.
- **Special delivery** is being established progressively in the system and is most noticeable at the elementary level. This makes it possible to address the needs of a special category of the population that had been marginalized until now.

At the central level, the education and training sector is organised around two ministries and one ministry delegate that are respectively in charge of:

- Higher Education and Scientific Research
- National Education, and Technical and Vocational Training. This department includes a ministry delegate in charge of literacy education and Technical and Vocational Training.

There are ten “Inspections d’Académie” (school inspectorates) to coordinate education initiatives in the country's ten regions. At the divisional level, departmental inspectorates for national education (IDEN) implement education policy at the community level. There are 41,

instead of 30, such inspectorates given the need for effective management of school children in specific urban areas such as Dakar.

- ***The non-formal sector***

It includes:

- Literacy education
- Community based schools
- On-the-street schools also known as “écoles du 3eme type” (schools of a 3rd category) are in the experimental phase.

Functional literacy addresses the needs of persons over 15 years. Coordinated by the Cabinet of the Minister Delegate for National Education in charge of Literacy and Vocational Training, this sector covers a variety of initiatives implemented by several different NGOs, organisations, agencies, cultural associations and Ministries. In 1993, the government of Senegal designed a national programme to fight illiteracy (71% in 1988) during a colloquium in Kolda.

Community based schools are an innovation and part of a strategy to experiment alternative models of education for out-of-school children or early school dropouts between ages 9 and 14. They deliver a complete cycle of pro-practical and pre-vocational basic education in national languages and French for a period of four years.

Schools of a 3rd category are another kind of non-formal school, including on-the-street schools, organised by non-formal and non-standard agencies. Although it has not been able to institute better organisation, the education system is trying to accommodate these schools.

Appendice 4: Data collection tools

ACACIA-GEEP

QUESTIONNAIRE (Students)

Dear student,

We are conducting a study on the use of Information and Communication Technologies (ICTs) in schools in sub-Saharan African countries, and are asking you to help us find the right answers to some of the questions we may have.

The information you are going to provide by filling this questionnaire is certainly going to help us focus our work on the needs and concerns that you and your teachers may have on ICTs.

Thank you for accepting to give up some of your time to fill this questionnaire.

Instructions

- Read through the questionnaire before you fill it
- Mark in your answers in the space provided
- Use figures in ... to answer some of the questions
- Write out the answers to the questions with

• SECTION 1: IDENTIFICATION

101. Region:

102. Age

103. Sex: Male Female

104. Are you are a member of an FLE club?

1. Yes 2. No

SECTION 2: INITIAL TRAINING

201. Have you received initial training in ICTs?

1. Yes 2. No

202. If yes, where did you receive the training?

1. At home 2. At school 3. In a private for-profit centre
4. Other (explain)

203. If you received your initial training in the school setting, which agency delivered the training?

1. Acacia-GEEP
2. Génération Informatique Scolaire
3. World Link Programme
4. Other (explain)

205. What was your initial training based on?

SECTION 3: USING ICTs

301. Which product or service do you find most useful when you use ICTs (One answer only)

1. Word processing 2. Search engines 3. Games
4. E-mail 5. Other pedagogical applications (maps, graphics)

302. Give reasons

303. Do you use the computer?

1. Yes 2. No

304. If yes, for what reason?

1. Yes
2. No

305. Where do you most often use the computer?

1. At home
2. At school
3. In a private for-profit centre
4. Other (explain)

306. How frequently do you use the computer? (One answer only)

1. More than once per day
2. More than one time a week
3. Once per week
4. Once per month
5. Less than one time a month
6. Not at all

307. For how long do you use the computer each time?

1. Less than 30 minutes
2. 30 mins – 1hr
3. Over 1hr

308. Do you need help to be able to use the computer?

1. Yes
2. No

309. If yes, by whom?

310. Do you use the computer for word processing?

1. Yes
2. No

313. If yes, what was the subject of the last document you processed? (Give subject or title)

314. Do you use search engines on the Internet?

1. Yes
2. No

315. If yes, which ones do you use most frequently?

316. What do you most often look for during web research?

1. School material (explain)
2. Reproductive health (Sexuality, contraception, STDs)
3. Environment
4. Other (explain)

317. On the elements you targeted in your research, can you give the web sites you last consulted? Give name of web site, and if possible, the title of the document)

1. Subject on school curriculum
2. Reproductive health
3. Environment
4. Other (explain)

318. Have you ever used e-mail?

1. Yes
2. No

319. Have you used e-mail to subscribe for a new e-mail address?

1. Yes
2. No

320. If yes, give your e-mail address

321. Have you used e-mail to send/receive mail?

1. Yes
2. No

322. If yes, what was the subject of the last message you sent/received?

323. Have you been part of a chat group?

1. Yes
2. No

324. What was the last subject for discussion in your chat group?

325. On which web site was this discussion organised?

326. Do you use the computer applications for entertainment?

1. Yes
2. No

327. What was the name of the game you selected the last time?

328. Do you use the computer's other teaching/learning applications (graphics, maps, translation)?

1. Yes
2. No

329. What school curriculum subjects do you generally deal with when you use these applications?

330. Does the use of ICTs improve your performance at school?

1. Yes
2. No
3. I do not know

331. If yes, how?

332. Do you think you are well skilled to use all computer products and applications?

1. Yes 2. No

333. If no, which are the areas where you need further training?

- Word processing
- Search engines
- E-mail
- Games
- Other pedagogical applications

SECTION 4: ACCESS

401. Do you think your school is sufficiently equipped to host all students who want initial training in the use of ICTs?

1. Yes 2. No 3. I do not know

402. At your school do you have access to computers?

1. Easily 2. With difficulty

403. If access is difficult, why?

404. Who has easier access to the NICT facility in your school (give one answer only)?

1. Students 2. Teachers 3. Administrators 4. No answer

SECTION 5: PERCEPTION

501. Do you consider the computer as (give one answer only)

- 1 – the tool of the future
- 2 - the driving force in the future
- 3 - the remedy of the future
- 4 – Other (explain)

502. Give reasons for your choice

SECTION 6: IDRC

601. Did you know about IDRC before this intervention in your school?

- 1. Yes
- 2. No

602. When?

INTERVIEW FORM (USERS)

IDENTIFICATION

	SCHOOL	
Number of students interviewed:	1. Male	2. Female
Number of teachers interviewed:	1. Male	2. Female
Number of administrators interviewed:	1. Male	2. Female
Other(s):	1. Male	2. Female

1. ACCESS

- 101. What are the conditions of access to the youth cyber clubs?
- 102. What do you think of them?
- 103. Are there any private for-profit cyber cafes around the school? How many people have access to these cyber cafes?

2. TYPE AND QUALITY OF SERVICE

- 201. What services does the youth cyber club offer?
- 202. Are you satisfied with the services offered in the youth cyber club?
- 203. If yes, why?
- 204. If no, why?
- 205. Which are the services you are most satisfied with?
- 206. Why?
- 207. Which are the services you are least satisfied with?
- 208. Why?
- 209. What do you think about the way the youth cyber club is managed?

3. IMPACTS

- 301. Does the youth cyber club add value to your learning/teaching/school management?
- 302. Does the youth cyber club help improve the activities of your FLE club?
- 303. Does the youth cyber club help improve your performance at school? How?
- 304. In your opinion, what measures should be taken to make the project sustainable?

READING GRID

REGION:

TOWN:

SCHOOL:

NUMBER OF STUDENTS:

- **FEMALE:**
- **MALE:**

1. INITIAL STAGE

101. Surface area (in m²):

102. Number of workstations (computers and related equipment)

103. Origin of workstations (name of donor(s))

104. Beginning date

Month Year

105. Type of difficulties encountered at the beginning (technical, financial, material problems)

106. Opportunities seized during the initial phase

2. OPERATION

201. Monitoring and evaluation mechanisms

202. Type of services offered by the youth cyber club

203. Profile of users

204. Number of users trained at the cyber club

205. Conditions for access to services

206. Services requested

207. Daily frequency of requests

208. Peak activity days and hours

209. Average time each user spends on services

210. Constraints/problems encountered since the youth cyber club was opened

3. IMPACTS

301. Institutional changes observed in the host school since the institution of the youth cyber club.

302. Changes observed in teaching/learning in the host school since the institution of the youth cyber club.

INTERVIEW GUIDE

(PROJECT MANAGER)

- 1 - Does Senegal have a national education policy on the use of ICTs in schools?
- 2 - If yes, explain.
- 3 - Are there any other initiatives for introducing ICTs in schools other than your project?
- 4 - If yes, explain.
- 5 - Is there any relation between your project and these other initiatives? Explain.
- 6 - Does your project have a curriculum and a programme for the application of ICTs in the education field?
- 7 - If yes, explain.
- 8 - Is your project aligned with national policy on the application of ICTs in schools?
- 9 - If yes, in what way?
- 10 - How does your project train teachers and students?
- 11 - What changes has your project brought to the field of education?
- 12 - What are the main accomplishments of the project?
- 13 - How has your project influenced national policy? Or how has national policy influenced your project?
- 14 - What major difficulties is your project facing today?
- 15 - How do you intend to render the project sustainable?

GRID FOR DATA ANALYSIS

POLICY

1. Project conformity with national policy for the application of ICTs in schools.
2. Project characteristics in relation to this policy.
3. Characteristics of other projects or initiatives for the application of ICTs in schools (similarities and differences with the youth cyber clubs project)
4. Project contribution to the implementation of national policy.
5. Project target areas.
6. Other project target areas.
7. New activities developed in the school following the introduction of the project.
8. Institutional changes (at the local and national levels) resulting from the implementation of the project.
9. Other details related to the application of ICTs in schools.

CONNECTIVITY

1. Type of equipment put in place in schools.
2. Access to the equipment (conditions, number, sites, periods, attendance).
3. Connection.
4. Profile and number of users.
5. Reasons why they use the facility.
6. Partners and their contribution.
7. Achievements, successes, constraints, failures.
8. New activities in connectivity.
9. Partnerships for connectivity.
10. Challenges in Connectivity.
11. Other details on connectivity.

TRAINING OF TRAINERS

1. Profile of trainers in ICTs
2. Profile and number of project trainees at the local and national levels.
3. Contents of training.
4. Partnerships for training.
5. Application or non-application of training received.
6. Appraisal/judgement on training.
7. Type of materials and their suitability for training
8. Other details on training.

CONTENT/CURRICULA

1. Content of activities in cyber clubs.
2. Initiatives on content.
3. New activities developed in this domain.
4. Partnerships for curricula development.
5. Changes in teaching/learning approaches caused by the project.

3. MANAGEMENT AND OPERATION

301. *Were monitoring and evaluation mechanisms put in place at the beginning of the project?*

- 1. Yes
- 2. No

302. *Are there any formalities to fulfil before using the cyber team?*

- 1. Yes
- 2. No

303. *If yes, which ones?*

304. *Who uses this equipment?*

- 1. Students
- 2. Teachers
- 3. Administrative authorities
- 4. Other (explain)

305. *What are the services or products offered to users?*

306. *What products and services are requested by*

- 1. Students
- 2. Teachers
- 3. Administrators
- 4. Other (explain)

307. *In the management of youth cyber clubs, what is the level of responsibility for*

- 1. Students
- 2. Teachers
- 3. Administrators
- 4. Other (explain)

308. *In your opinion, how was the project received by*

- 1. Students
- 2. Teachers

3. Administrators

4. Other (explain)

309. In your opinion, who benefits the most from the equipment in the youth cyber clubs? (judging from frequency)? (Give one answer only)

1. Students

2. Teachers

3. Administrators

4. Other (explain)

310. What factors boost the activities of the youth cyber clubs?

311. What factors hinder the activities of the youth cyber clubs?

4. IMPACTS

401. How many users have been initiated in the use of computers since the project was launched?

1. Number of students

2. Number of teachers

3. Number of administrators

4. Other (explain)

402. How many users have been initiated in the use of the Internet since the project was launched?

1. Number of students

2. Number of teachers

3. Number of administrators

4. Other (explain)

403. Has the youth cyber club had an impact on the behaviour of students?

1. Yes

2. No

404. If yes, how?

405. Has the youth cyber club had an impact on the behaviour of teachers?

1. Yes

2. No

406. If yes, how?

407. Has the youth cyber club brought about changes in the way the school is managed?

1. Yes 2. No

408. If yes, how?

409. Has the youth cyber club influenced the performance of students at school?

1. Yes 2. No 3. No answer

410. If yes, how?

411. Has the project given rise to new activities in your school?

1. Yes 2. No 3. No answer

412. If yes, explain

413. Are you satisfied with the way the project is being implemented?

1. Yes 2. No

414. If yes, why?

415. If no, why?

5. LESSONS

501. If this youth cyber club project were to be taken all over again, would there, in your opinion, be any changes?

1. Yes 2. No

502. If yes, which changes?

ACRONYMS

ACACIA: Communities and the Information Society in Africa

CEM: Collège d'Enseignement Moyen

Club 2/3: Agency for Development Education and Cooperation

EFA: Education For All

ELSA: Evaluation and Learning Systems for Acacia

EVE: Environmental Education

FLE: Family Life Education

GEEP: Group for Population Studies and Education

LEA: Student Leader and Animator

PRT: Technical Relay for Training

IDRC: International Development and Research Centre

ICT: Information and Communication Technologies

UNFPA: United Nations Population Fund

PRS: School networking project

PDEF: Ten-year Education and Training Programme

SME: Small and Medium Enterprises

NGO: Non- Governmental Organisation

PDIS: Extended Health Development Programme

SSPS: Statistic Package for Social Science