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## PanAf was present during elearning 2008 in Accra Ghana

E-Learning Africa is a conference organised by ICWE GmbH and Hoffmann & Reif that focuses on ICT for development, education and training in Africa. The event establishes and links a pan-African network of decision-makers from governments and administrations with universities, schools, governmental and private training providers, industry and important partners in development cooperation. A different African country serves as the venue each year. The first one took place in Addis Ababa in 2006 while the second was held in Nairobi, Kenya in 2007. The 3rd International conference on ICT for Development, Education and training took place from the 27th to 30th of May 2008 in Accra, Ghana. There were 1502 e-learning participants, from 83 countries. 80% of the participants came from African countries. There were so many projects and initiatives from all over Africa. It was an occasion for researchers to showcase the latest developments in e-learning.



Moses Mbangwana,  
PanAf program  
manager

International Development Research Centre (IDRC) was listed in the e-learning conference as one of those funding organisations supporting African participants. IDRC financially supported 19 participants from 12 countries in Africa (Algeria, Cameroon, Côte d'Ivoire, Congo Brazzaville, Central African Republic, Ghana, Kenya, Mali, Mozambique, Senegal, South Africa and Uganda) and 2 participants from Canada. A majority of these participants were researchers taking part in the Panafrican Research Agenda on the Pedagogical Integration of Information and Communications Technologies (ICTs). The PanAf project provides an unprecedented opportunity for knowledge networking - on the topics of ICT policy, training, use, impact, gender equity and sustainability of information and communication technologies in schools across Africa. Six papers were presented based on the data that has been collected across Africa and is found in the observatory.

can help policy makers and practitioners. It was a litmus test of the Observatory which proved that

the data in it can be used to write so many articles. The Observatory contains more than 160 indicators and each researcher chose only a single indicator, meaning that there is an important stock of data that can help students, teachers and practitioners to carry out further analysis. It was clear from the discussions that teachers and students alike need training in the pedagogical integration of ICTs. One important point that came up in all the presentations is lack of equipment in most of the schools that the researchers carried out their studies. In some schools, the use of ICTs was unheard of and in some where there were ICTs, Internet connection was a major problem. Most of the schools did not have ICT policies for one reason or the other. The fact that many people attended this session and judging on the quality of questions they asked was clear proof that the pedagogical integration of ICT is necessary tool for development in our schools today.

This event was used by the management team to discuss with partners who wish to collaborate with the PanAf project.

“The eLearning conference in Accra also gave the PanAf management team the opportunity to make new connections and to solidify nascent partnerships. With regard to the latter, we take great pride in announcing a formal knowledge-sharing agreement between the PanAf Observatory and the World Bank's infoDev [www.infodev.org](http://www.infodev.org). This partnership has a number of mutual added values for the organizations involved, among them: The PanAf Observatory will now host the 53 country reports on ICT

and education across Africa produced by infoDev last year.”

From the reactions of the participants concerning the importance of the eLearning Africa 2008, it was clearly seen that all of them were very impressed with their participation because it gave them the opportunities to network and learned new ideas. This paves the way for the management team to look for future conferences where researchers in the project can show case their research findings and continue networking.

The term e-learning is most frequently used to refer to computer-based training which incorporates technologies that support beyond that which would be provided by a single computer (Wikipedia, the free encyclopaedia). According to some student website in the UK, it could be

defined as follows:

- Knowledge passed through the internet, network or standalone computer. E-learning is the transfer of skills and knowledge.
- Any technology mediated learning using computers whether from a distance or in face to face classroom setting (Computer Assisted Learning).
- Using technology to deliver learning and training programmes.

Therefore, the term e-learning is used to label almost any technology-based learning programme and has been characterised as the next phase of digital revolution.

*Dr Mbangwana Moses Atezah,  
PanAf program manager*

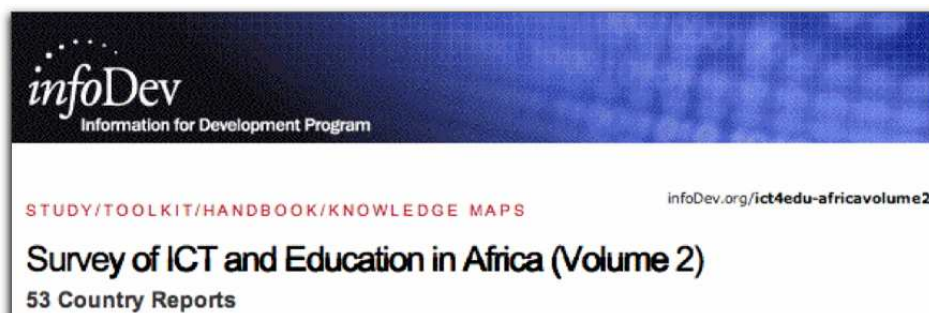
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Because of the PanAf project’s focus on applying specific indicators at a user (school) scale, the infoDev reports provide excellent national-scale summaries to compliment the data collected by our researchers and give an overview of the history of ICT and education initiatives for each African country.

A “long form” of content from each infoDev report will be available as a link on each country’s PanAf Observatory page; a “short form” summary will be available in new modern-mapping functions soon to be launched on both the PanAf Observatory and Google Earth.

Clearly, infoDev is delighted to have the opportunity to contribute to the PanAf Observatory’s knowledge-sharing facilities, and we are pleased to have access to this unprecedented continent-wide survey as well as a first collaboration between the PanAf project and the World Bank.

Look for the infoDev reports available now for each country on the Observatory at: [www.observatoireict.org](http://www.observatoireict.org).

*Prof Thierry Karsenti & the PanAf management team*

## Sources of funding for integration of ICTs in education in Cameroon

While ICT are gaining ground every day in education in Cameroon as elsewhere in Africa, the heads of some schools, either secondary or primary, are still asking themselves where they are to find the means to fund acquisition of the equipment that is too much of a burden for their taste. This brings us to examine the Cameroon model of funding for integrating ICT into education, with the intention of giving them some lines to follow in their turn.

Effectively, in Cameroon the sources of funding for ICT equipment are varied; they either come from State allocated funds, from donations by associations and Non Governmental Organisations (NGOs), individuals or organisations (personalities, local elected representatives, businesses...) that constitute the educational community. So in Cameroon to date, some thirty high schools have been equipped with ICT thanks to a programme piloted by the Office of the President of the Republic (the General Leclerc and Essos Bilingual General High Schools in Yaoundé as well as the Joss High School in Douala that are involved in the PanAf project are examples), while the ICT policy of the Cameroon Ministry of Higher Education has facilitated equipment of the Multimedia Centres in public universities and some Private Higher Education Institutions (Siantou Higher Institute and the Catholic University of Central Africa).

Instead of waiting for their turn within the programme piloted by the Office of the President of the Republic, some high schools have followed the road of donations with interventions by NGOs, associations and business donors (the cases of Mbouda technical High School and Bangang High School). In certain cases they concern businesses associated with prominent citizens or members of the educational community. The path of twinning with schools in the North (the case of Bafoussam Technical High School) is not forgotten. The person who initiated the funding request is often either a partner or a staff member of the business and very familiar with the procedure to follow. It can also involve a politician (Mayor or Member of Parliament) who decides to use personal funds or those of the City, or else with credits allocated to him in the framework of parliamentary micro projects. In certain cases, the Parent Teacher Association (APEE) chose to increase the rate of annual contributions in order to set up the necessary fund to buy the equipment needed to open and run a computer room.

Private establishments make up the largest percentage of schools that have been equipped and are best provided for with ICT equipment. They make up the most numerous group with generously equipped computer rooms. The ratio of students/work station is the lowest for this group, and this allows for better follow-up. It is even recognised that possessing computers is increasingly an added value for these schools when they come to recruit new students. In the primary sector, apart from a few public « Champions » schools released back to the State by the Chantal Biya Foundation, and a few public schools with the wealthiest Parents' Associations in the Republic, to which we can add a public primary school in Garoua where the most prominent local citizen, Mme Haman Adama donated some computers, the schools with computer equipment are mainly in the private sector.

Finally it is shown by our field analysis that funding of ICT integration into education in Cameroon is largely dependent on private funds and partners, and that if we wait for public funds, effective integration of ITC into education is not going to be realised tomorrow.

*Antoine Michel Tsayem and Brigitte Matchinda  
ERNWACA-Cameroon*



*Brigitte Matchinda*

**“Funding of ICT integration into education in Cameroon is largely dependent on private funds and partners.”**

## Improving Malian teachers' pedagogical practice through distance learning: FIER



Yaba Tamboura

**“Distance teacher training through radio and ICT could be a response to the crisis situation that fundamental education is currently experiencing in Mali.”**

Distance training and learning are becoming more and more common strategies in educational systems, particularly in countries with exponential development of learners and teachers. In Mali, the programme for teachers' interactive training by radio (FIER) is one example. It is part of training provision (initial and continuous) for teachers aiming to improve the quality of education in Mali. It is of course evident that the role of teachers is central in the offer of educational services, particularly at the level of primary teaching.

The FIER programme is funded by USAID and implemented by the National Basic Level Education Directorate, (DNEB) through the Teacher Training Division (DEN) and the MOE de concentrated structures, that is to say the education academies (AE) and the pedagogical animation centres (CAP). The programme covers 544 schools, 52 CAP and 4 IFM in the Koulikoro, Sikasso, Timbuktu, Gao and Kidal Regions and the District of Bamako. Its objective is to contribute to strengthening the professional (pedagogical) skills of teachers and supervisors. It aims at:

- Training agents at MOE central and de-concentrated levels, creation of models of quality radio and digital training that is gender sensitive ;
- Use of radio and new technologies to offer male and female Malian first cycle teachers initial and continuous training sessions ;
- The FIER programme is not a total solution to the problem of teacher training. It is a part of a political vision of initial and continuous teacher training based on the following observations:
  - The low level of persons admitted to Teacher Training Institutes (IFM)
  - The unsuitability of programmes in relation to those of fundamental education
  - Gaps at the level of organisation and monitoring of practical placements
  - Unsuitability and/or non evaluation of teachers' pedagogical practices.

Teacher training policy envisages correction of these faults by opening up general teacher

training with a view to professionalisation. The objective is to facilitate teachers' adaptability to evolving and changing contexts, and preparing them for continuous education. This predisposition justifies introduction of ICT and digital pedagogy in the provision for initial training, with the perspective of continuous training throughout a teacher's career. Distance training presents the advantage of reducing costs and reaching a large number of teachers at the same time.

The challenge of schooling in Mali is not just quantitative; it is also qualitative and in this framework training trainers is an important element to take into consideration. Strategies such as distance teaching and through the radio and ICT are conductors of elements of quality. The level of the trainers, the increasing number of learners, call for new strategies enabling creation of an effective teaching-learning framework: radio whose usefulness in training is recognised, and Internet that is used by many professionals in their practice. FIER specifically targets the case of radio in Mali. In 2003, ERN-WACA carried out a study of the introduction of ICT in teaching in certain schools in Mali with promising results. Distance teacher training through radio and ICT could be a response to the crisis situation that fundamental education is currently experiencing in Mali.

Yaba Tamboura,  
ERNWACA-Mali

## Pedagogical integration of ICT in Kenyan educational institutions: A situational analysis

This article examines the success stories and challenges of using ICT in teaching and learning in selected schools in Kenya. Data was collected from managers of four primary schools and five secondary schools located in urban and semi urban areas of Kenya. Four of the schools were private while five were public. A cursory glance shows that computers have found their way into Kenyan schools either through donations or direct purchase by the school management. However, while it may appear that integration of ICT in teaching and learning processes is minimal, as evidence seems to suggest, there are achievements.

From the data collected, school managers cited acquisition of ICT infrastructure, ICT skills of the school manager, provision of ICT skills to learners, investment in educational software, and training of teachers in ICT skills and the school's ICT policy as their main areas of success.

The nine schools that participated in the survey have various ICT equipment that included computers, printers, photocopiers, LCD projectors, smart boards and internet connectivity. They all have computer laboratories where some are networked. A relationship between the ICT skills of the school manager and ICT awareness and usage among teachers and learners was observed. Providing all learners with computer literacy skills is another achievement. Although the ratio of computers to learners is quite low in most schools, an attempt has been made to fit all the classes in the school timetable. In most schools, learners have been allocated between 40 minutes and 100 minutes a week for computer lessons. Investment in educational programmes such as the Encarta Encyclopedia has revolutionized learning in some of the schools. It was reported that learners are able to access more information and hence enhance their learning. The training of teachers in ICT has been consistent in the schools where the principal has ICT skills or very keen interest. This gives credence to the fact that leadership is critical in change management. The School Principals in such cases act as role models to teachers and learners by championing ICT.

Several challenges were cited as hindering the achievement of the school's ICT –related goals. Time to prepare ICT teaching materials is difficult to find because of the loaded curriculum. Converting manual teaching notes to ICT format requires both time and skill. Teachers feel that this is also an added load and because

there is no special reward and it is not part of the school curriculum, there is no motivation. The numbers of computers are seen as a major barrier in that learners have to share the few that are there when they have classes. Frequent power black outs interrupt lessons and even examinations yet the schools cannot afford to buy UPSs or standby generators. This causes frustration among learners and teachers as they lose unsaved data, and time is lost. All the schools cited the lack of a unified school curriculum and reference materials especially at primary level. The schools use a localized curriculum prepared by the ICT teacher or by suppliers such as Computers for Schools Kenya (CFSK). This means the skills are limited to how much the ICT teacher knows.

Resistance by teachers to use ICT in teaching and learning due to technophobia was cited in all the schools. This applies mainly to the older generation teachers. This could probably be linked to the teacher training curriculum which does not include ICT integration as part of its curriculum. Computer viruses is another universal problem, which is exacerbated by learners who sneak in discs from cyber cafes, lack of expertise to clean them and the high cost of anti-virus software. This disrupts learning as the computers shut down frequently. Public schools complained of the lack of government employed teachers, hence they hire, thus draining the scarce resources which could have been used to upgrade the ICT facilities. In addition, parents are not willing to pay any extra fees because of free primary education. They feel it is the responsibility of the government.

From the discussion above, it appears ICT in Kenyan schools is largely internally driven. The initiative emanates from the school management, Board of Governors and Parents Teachers Association and the learners themselves. This is possibly due to the realization that ICT is the way of the future and the young generation must be exposed to this knowledge if they have to be competitive in the labour market.

The government seems to be lagging behind because, whereas computer studies has been introduced in secondary schools as part of the national curriculum, it has not kept up with the provision of the necessary infrastructure both physical and human resources. Private schools, however, are ahead in ICT use because they have control over their own resources. They also use ICT to maintain a competitive edge in the market because parents tend to associate



*Dr Christopher Gakuu*



*Dr Harriet Kidombo*

***“Private schools, however, are ahead in ICT use because they have control over their own resources.”***

the use of ICT with good academic performance.

It is obvious, therefore, that the Ministry of Education should urgently develop an ICT in education national policy to streamline this important area of learning. The Ministry needs to provide ICT teachers to schools and reward those who have the skills and are already offering services so as to motivate them. It might

also help to include integration of ICT in teaching as part of the teacher's annual performance appraisal to encourage them to acquire the skills.

*Dr. Christopher Mwangi Gakuu and Dr. Harriet J. Kidombo, School of Continuing and Distance Education, University of Nairobi*

## A preliminary look through a gender lens at PanAf Observatory data

### The importance of gender analysis of ICT data



Nancy Hafkin

The PanAf Observatory is to be congratulated for its commitment to the collection of sex-disaggregated data. If I am counting right, there are 17 data sets with sex-disaggregated data. Researchers participating in this project may not be aware of the uniqueness of this because it has been part of the project from the beginning, but what they are doing by collecting sex-disaggregated data is still the rare case, much more often not done than done.

The PanAf approach is very much in line with international standards being established, in particular by the Partnership on Measuring ICT for Development ([www.itu.int/ITU-D/ict/partnership/](http://www.itu.int/ITU-D/ict/partnership/)).

The last meeting of the Partnership held in Geneva at the end of May 2008:

... highlighted the importance of gender-disaggregated ICT data and demonstrated how much we don't know about the gender gap and how to address it. The gender gap is wide in both developing and developed countries, whether or not there is high or low Internet penetration. There are different reasons for the gender gap, and more data can show differences that can help analyze and understand the gender gap. As a result, it was suggested that some core ICT indicators, such as ... **access to ICT in education** should be measured for both men and women. **Further attention must be paid to collecting gender and age-disaggregated data**, in particular regarding ICT use by households, ICT use by employees, **ICT in education** and e-government[emphasis supplied].

Gender analysis essentially means separating gender as a category and examining a given phenomenon to see if the results are different for men or for women. Although the first phase of data collection for the PanAf Observatory project is not yet complete, we can undertake a preliminary gender analysis of the data from some of the sex-disaggregated indicators.

I chose to examine indicators that are important for looking at gender equality in access to ICTs — examining the gender category 9 indicators of whether teachers and students have access to computers. I will also take a preliminary look at other sex-disaggregated indicators related to ICT usage for which data collection is still underway, such as teachers' computer-literacy (as indicated by the proxy of their having e-mail addresses), whether they are using computers in their teaching. If there are significant gender differences in the statistics on any of these indicators, it means less than maximum utilization of a country's human resources for economic and social development. At the individual level it means barriers to entering the information/knowledge society.

### Looking at the indicators through a gender lens ...

#### Gender indicators - Category 9

#### Female learners with access to computers (indicator subcategory 9.1)

Of the 90 schools for which we currently have data for this subcategory on the Observatory, we looked first at the situation of single-sex schools. Did either girls or boys attending single-sex

schools have a better chance of access to computers than if they attended mixed-sex schools? Here we see a slight advantage for boys attending single-sex schools. Of the four all-boys' schools in the sample, three showed that all the students had computer access, while at the one remaining school, none of the students had access. At the eight all-girls' schools reporting, five reported that all their students had computer access, while in two others roughly 1/3 and 2/3's of the all-female students respectively had access, and in one very large girls' school in Central African Republic, none of the students had access,

Separating out the single-sex schools, in the remaining 78 schools, the overwhelming majority (71.8% or 56/78) of schools reported that 100% of both male and female learners had access to computers. Somehow this statistic seems unrealistically optimistic. One way to verify this is to examine whether the statistic is meaningful in terms of number of computers accessible to learners at the institution. Is there a reasonable ratio of computers to students? This could be investigated by a small number of qualitative interviews to see if female students feel any discrimination in their access to computers. An additional nine schools (11.5%) had no computer access for either male or female students. Thus, in 83.3% of our cases, there was no statistical gender difference in learners access to computers.

The remaining fourteen reporting schools (17.9%) fell in between the situations of computers-for-all and computers-for-none, with some interesting cases. At the Groupe Scolaire Emmanuel in Cote d'Ivoire, 75.5% of female students had access to computers, while male students, who constituted 26.8% of the student population, had no access at all. At the Lycee technique du 1er mai in the Republic of the Congo, a majority of female students had access (50.1%) while an abysmal less than one percent (0.8%) of male students were using computers. At the latter school, there was a huge gender imbalance in enrolment- 3209 boys as compared to 61 girls. Perhaps almost all the computers at the school were allocated to secretarial training in which the majority of girls enrolled. In both these cases, one with few male students and the other with a large number, males were disadvantaged in access to ICTs. This result illustrates that gender analysis is not a code word for looking at the situation of women, but rather an exercise that looks at differential impacts on both men and women. It would be interesting to investigate what is behind these fairly rare situations of little or no computer access for male students at mixed-sex schools. In most (11) of the remaining cases, males and females had access to computers in relatively close proportion to their numbers in the school. In two cases, however, boys had significantly greater access to girls (26% to 18% in one case and 46 to 36% in another).

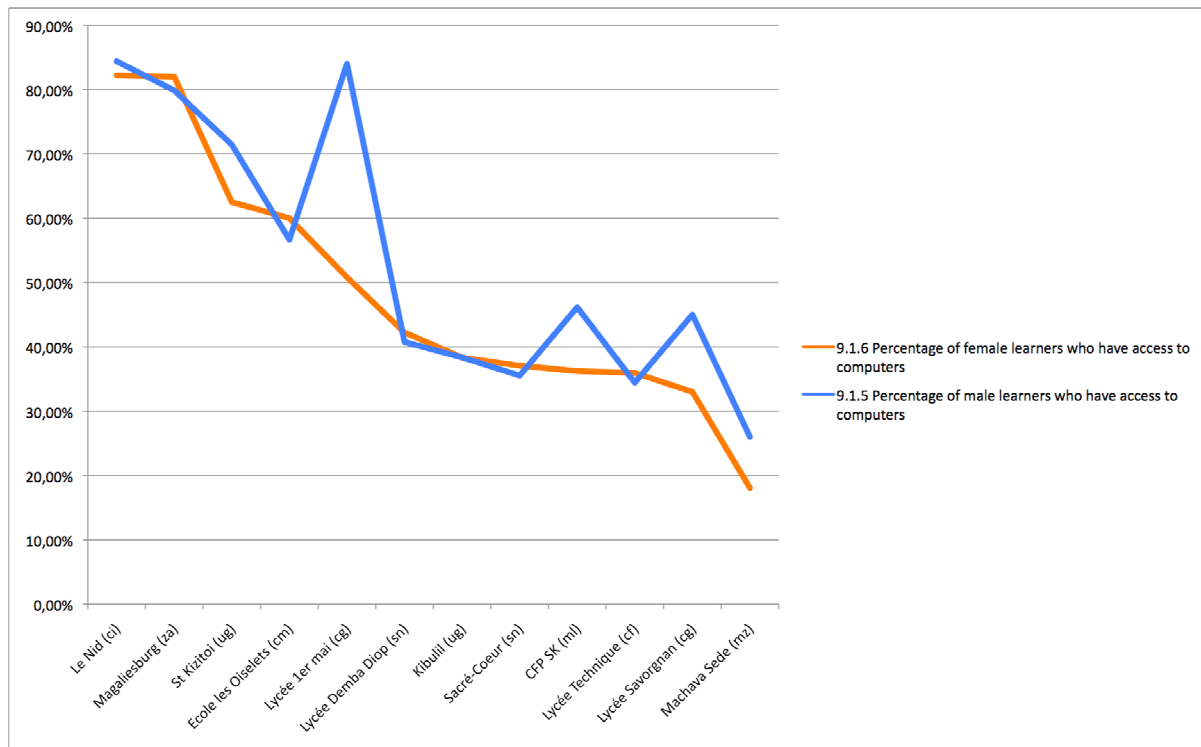


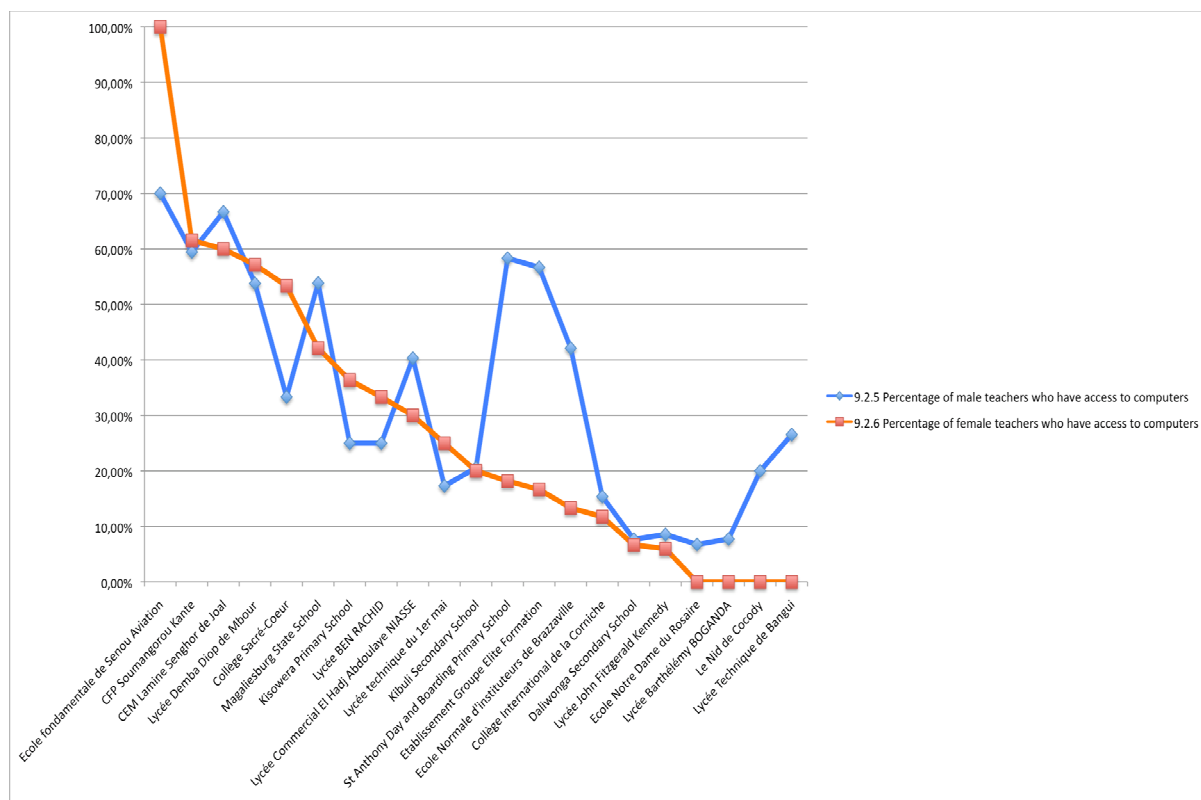
Figure 1: Comparison of M/F learners' access to computers at selected schools

**Teachers' access to computers, by gender (indicator subcategory 9.2)**

Ninety-one schools with both male and female teachers reported on this indicator. Thirteen schools (14.3%) had no computer access for either male or female teachers, and one all-male-teacher school had no computer access for faculty. Fifty-six (61.5%) of schools reported full and equal access for all teachers. Thus in 75.8% of cases (combining the "all-haves" with the "none has") there was no measurable difference between male and female teachers' access to computers. Looking at the remaining 21 schools, spread over seven countries, in four cases (19%) female teachers had no computer access at all while relatively small

numbers of male teachers (ranging from 6.8% to 26.6%) had such access. These cases were most notable in Congo and Central African Republic. Further investigation is needed to find out the reasons for the disparity. One possibility is that computer facilities were available only to teachers of certain subjects, all of whom happened to be men. Of these twenty-one cases, in all but two instances the disparity was in favour of male teachers, and in six of the cases, the disparity was large (as much as 40% in two schools in Uganda).

Figure 2: Comparison of M/F educators' access to computers at selected schools



### Other indicators

We will learn a lot more about gender differentials in ICT in education in Africa when all the data is in for indicator categories 3, 4, 5, and 6 (Teacher-training, ICT use and Impact). The above analysis has looked only at quantitative indicators of access; the remaining categories deal with the vital area of usage, particularly through the application of qualitative instruments, including recorded interviews and discussions with educators and learners. When we have the data on teachers with e-mail addresses, we will be able to see if there are striking differences between men and women on this indicator. If there are, qualitative questions will have to be addressed such as: were e-mail facilities not easily available to teachers at the school? Did teachers have to use cybercafés for e-mail? Were women teachers reluctant to use cybercafés for cultural reasons? Did they not have the time or the disposable income? When we look at the data disaggregated by sex on teachers using ICT in (subcategory 3.5), for example, we will see whether there is any difference between male and female teachers in using ICTs in teaching and look for the gender issues if such differentials appears.

Subcategory 4.1 on weekly hours of ICT use by educators for academic purposes may also reveal gender differentials. In the data collected to date, there is already an interesting finding in the two cases where women's ICT usage in teaching exceeded that of men, it was by the largest measure of any of the cases of gender disparities in usage: in these two cases, women's usage at institutions in Cameroon and Senegal was three and five times, respectively, that of their male educator counterparts! The data from subcategory indicator 4.2 on average hours per week of ICT use by learners by gender should also lead to useful observations. If these numbers turn out to be the same for male and female students in the majority of cases, they should probably be verified through closer analysis of qualitative data.. We anticipate that completion of these initial rounds of PanAf fieldwork will yield an unprecedented open, online data resource that can be used to make important observations and subsequent recommendations for eliminating gender differentials in ICT in education in Africa.

**Conclusion**

This article attempted a brief gender analysis of some of the data collected to date under the PanAf project while looking primarily at indicators specifically in the gender category. The aim was to illustrate that the crux of gender analysis is identifying differentials in impact of results on the basis of gender. The basic question being asked is given the same variables, are the results different for men and women? Gender analysis is not an attempt to identify discrimination against women, but rather to see if there are differences in results on the basis of gender. Sometimes the results show women to be disadvantaged, but at other times it can be men in that situation.

The conclusion we have begun to draw from this preliminary look at quantitative data currently available on the Observatory is that there do seem to be gender differences in access to computers in schools by learners and educators. This statistical data in itself may not reveal the full extent of gender differentials. Qualitative research, such as that currently underway to inform PanAf indicators in categories 4, 5 and 6 will enrich the knowledge available on the Observatory through the analysis of responses to questionnaires and recorded interviews undertaken by expert researchers in the field. Throughout their analysis of questionnaires and recorded interviews in the remaining data collection, researchers are advised to keep their gender lens open, always looking for gender differences and the reasons therefore.

*Nancy Hafkin*  
Member, ERNWACA PanAf Scientific Committee

***“The conclusion we have begun to draw from this preliminary look at quantitative data currently available on the Observatory is that there do seem to be gender differences in access to computers in schools by learners and educators.”***

## Regulative attribution of ICT uses and knowledge of its components in State Universities in Cameroon



Joseph BOMDA

**“There is reason to fear that the struggle for appropriation and effective integration if ICTs may be perceived as that for access to Internet and to computers.”**

Faced with a new situation, Man always tries to find a cause or an objective. Perceptive predisposition, notably: *social thought, feelings, expectations and previous experiences* that are inherent in him help him avoid thinking too much and to proceed by simplification to knowledge, explanation and understanding of the reality around him.

With regard to ICT, should he have norms and expectations to regulate interactions?

In a study funded by ERNWACA in 2006, 12 Deans, 4 Directors, 3 Vice - Rectors, 222 Students, 87 Teachers, 42 Heads of department and 11 Managers of Multimedia Centres of State Universities in Cameroon were faced with this question.

All talk of *monitoring* or *blocking certain sites*. 71.7% of Heads of department recommend this, compared with 98.7% of Teachers, 21% of Multimedia Centre Managers, and 48.1% of students.

Generation conflict ? The study did not envisage trying to answer this question. But this result could constitute a new research orientation.

The deans, directors and vice – rectors follow each other’s lead. Analysis of the contents in quantifying verbs recurring in their discourse give the following results: *Code (100 %)* ; *filter (100 %)* ; *encrypt (100 %)* ; *monitor the sites (75 %)* ; *orient users (100 %)* ; *restrain ICT users’ freedom (90 %)* ; *lock (80 %)* ; *envisage a system that would block sites (50 %)* ; *avoid misuse (60 %)*

In considering these results, from their point of view, what enters into composition of ICT? Answers such as those expressed in figures in the above table underscore e-mail and the computer in particular which alone provide average positive choice of more than 45%

From this it will be observed that the existence of a form or reductive perceptive selection of ICT to Internet and computers. Dean M... thinks that, « *if some sites are not locked, that could greatly contribute to our children losing control of their behaviour. So it is urgent to ensure calm arbitration, locking of certain harmful sites to guarantee continuity of desired behaviour and maintenance of traditions that our ancestors bequeathed us.*” However Dean Y ... does not share this line of thought because, he says, « *in*

*principle, there should not be restrictions unless we see that an activity is harmful for the system*», these remarks provide a subject for reflexion.

Consequently, there is reason to fear that the struggle for appropriation and effective integration if ICT may be perceived as that for access to Internet and to computers. Therefore there is an urgent need to make known the components of ICT and their specific advantages.

Joseph BOMDA,  
ERNWACA-Cameroon

## Teaching technology and/or teaching with technology in Congo ?

Results of a study carried out in the framework of the PanAf project show that in most schools and institutions for training of trainers in the Congo, the types of courses used are reduced to one tendency: that of introducing information and communication technologies as a new subject and making it a systematic form of teaching. It is for this that we met among teaching programmes titles such as:

- Educational technology (taught at the ENS with an hourly volume of 54 hours per year);
- Initiation to computers (taught in general teaching establishments for example at Savorgnan de Brazza High School with an hourly volume of less than 27 hours per year).

These results confirm that in Congolese schools, in general these types of teaching are given with one sole aim « to teach technology» and not to use ICT to make it a « regular use by students and teachers involved in active learning. Technology is not used to support, improve or make teaching and learning activities more meaningful. »

« Teaching technology rather than teaching with technology » limits the skills of Congolese student in this area to accumulating knowledge of technology. But nothing proves that they will be proficient when it comes to using this knowledge outside the school context.

Of course, understanding, knowledge is indispensable and its acquisition remains a priority. But the capacity to use this knowledge in various situations, that is to day the corresponding skills, are equally decisive and their development must be affirmed as such.

Learning information and communication technologies (ICT) should not be situated only in a vision of knowledge of common techniques for utilitarian professional purposes, but as a means of developing an aptitude for researching, validating, sorting information. It is indispensable « to teach technology and to teach with technology » to develop a critical mind, capacity of discernment, essential in a world saturated with information.

Awareness should be developed in which the world doesn't respond to a magic word but to rational laws, making scientific forms of learning

so important.

We have already said that « ICT facilitates not only treatment of information, but also its transmission for learning and educational development purposes ».

At the moment the types of courses given in Congolese schools are teaching technology and/or with technology. It is important to place the two notions side by side: teaching technology and teaching with technology.

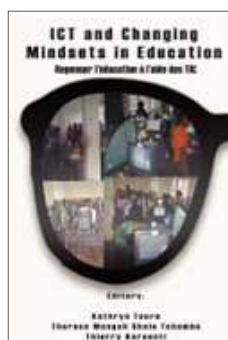
*Dr Samuel MAWETE,  
Ecole Normale Supérieure, Brazzaville*



Samuel Mawete

**“Teaching technology rather than teaching with technology limits the skills of Congolese student in this area to accumulating knowledge of Technology.”**

## Book: ICT and Changing Mindsets in Education Edited by Kathryn Toure, Therese M.S. Tchombe, Thierry Karsenti



*ICT and Changing Mindsets in Education*

The debate is no longer whether to use information and communication technologies (ICT) in education in Africa but how to do so, and how to ensure equitable access for teachers and learners, whether in urban or rural settings. This is a book about how Africans adopt and adapt ICT. It is also about how ICT shape African schools and classrooms. Why do we use ICT, or not? Do girls and boys use them in the same ways? How are teachers and students in primary and secondary schools in Africa using ICT in teaching and learning? How does the process transform relations among learners, educators and knowledge construction?

This collection by 19 researchers from Africa, Europe, and North America explores these questions from a pedagogical perspective and specific socio-cultural contexts. Many of the contributors draw on learning theory and survey data from 36 schools, 66000 students and 3000 teachers. The book is rich in empirical detail on the perceived importance and appropriation of ICT in the development of education in Africa. It critically examines the potential for creative use of ICT to question habits, change mindsets, and deepen practice. The contributions are in both English and French.

Book is available on:  
[www.amazon.com](http://www.amazon.com)  
 or [www.africanbookscollective.com](http://www.africanbookscollective.com)

## Book: Education for All in the Evolution of a Society: Case of Congo Brazzaville by Samuel Mawete



*Education for All in the Evolution of a Society: Case of Congo Brazzaville*

Around the notion of accountability, Samuel Mawete, rich with experience, treats education issues with a new approach focusing on social, economic and cultural dimensions. This book is a reflection on a major debate about relevant characteristics of Congolese society. Abstract: The system of values of a society is above all a choice of society. It is fundamentally evolving and we are all co-creators in it. We can very well choose a different future by building on values different from those in progress.

To achieve this, we must resort to education of all, different from education for all. In Congo, we teach but we do not educate. An intelligent education should instead be based on values, not just on the facts. The restructuring of Congolese society requires a reconsideration of Educational Sciences.

Book is available on  
[www.publibook.com](http://www.publibook.com)

## PanAf website becomes a webportal

The PanAf website has been redesigned to become a **web portal on the integration of ICTs in education**. In addition to offer you the news on the use of ICT in education in Africa, this web portal has been enriched with useful sections offering Internet resources on:

- 1/ ICT and Learners
- 2/ ICT and Educators
- 3/ Repositories

You can visit the website at at:  
[www.panaf-edu.org](http://www.panaf-edu.org)



Homepage of PanAf website available at  
[www.panaf-edu.org](http://www.panaf-edu.org)

## Kathryn Toure to take on new responsibilities

Kathryn Toure wraps up seven years as Regional Coordinator of the Educational Research Network for West and Central Africa (ERNWACA) in September 2008. She was the network's seventh coordinator and the longest serving since ERNWACA was founded in 1989.

She met several challenges including the revitalization of the network. Other achievements include operationalisation of the Board of Directors and the regional scientific committee, diversification of partnerships, and development of human resources. Ernwaca Cafés to share research findings and promote public and policy dialog were institutionalised. National and transnational projects led to peer reviewed publications and the Journal of Educational Research in Africa (JERA) will be launched this year.

Her tenure has been guided by concerns for collaboration and for quality and was marked by recognition from the Economic and Monetary Union of West Africa (UEMOA) as a regional Centre of Excellence.

The network's 400 member researchers serve 14 countries in West and Central Africa to promote African expertise and improve the conditions for education research. ERNWACA staff and members wish Mrs. Toure well in her new position in Dakar as Regional Director for West and Central Africa of the International Development Research Centre (IDRC).



Kathryn Toure

## Observatory: Quality control

The quality of data is an essential requirement that guarantees the scientific rigour of the Observatory's data and their credibility. Hence the need to set in place a rigorous process of quality control. This process can be detailed as follows:

- Project indicators, methodology and instruments have been developed by a pan-African group of experts and partners from the University of Montreal.
- National teams of researchers proceed to collect data and their initial analysis.
- These research teams are supervised by a national committee in an academic partner institution.
- Available on-line data are submitted to formal and informal verification based on the wiki-style of the database
- The data are supported by free access to primary documents such as digitalised questionnaires and interviews conducted.
- A cycle of successive feedbacks is supervised by the team directing the project at ERNWACA and the University

of Montreal.

- Data are not « validated » (although they are immediately available on-line) until they have been examined by the project international scientific committee.



Homepage of Observatory on ICTs in Education available at:  
[www.observatoireitc.org](http://www.observatoireitc.org)

## The « pioneer » ICT schools



Lamine Diarra

**“ICTs are taught, but are not generally used to enrich teaching, although innovative initiatives do exist.”**

Research confirms a potential for promoting new pedagogies and ways of learning, encouraging opening minds and innovation, diversifying the offer of education and thus contributing to improving the quality of education. In 2005-2006, ERNWACA and the University of Montreal, with IDRC financial support, conducted a study in five West and Central African countries (Benin, Cameroon, Ghana, Mali, Senegal) to understand: condition of access (1) ; educational approaches in the classroom (2) ; the effects of integration on teaching and learning, (3); factors contributing to sustainability of integration of ICT into schools (4).

Multiple case studies were conducted, above all with a qualitative approach, in 8 schools in each of the five countries. Among the principal methods of data collection are questionnaires and interviews (both by group, but also semi-directive individual) with administrators, teachers, pupils and parents. For three years, the project mobilised some thirty researchers from ERNWACA, others from the University of Montreal, about 66 000 pupils and 3 000 teachers. Directors of secondary and primary schools, teachers, pupils and their parents from the 36 pioneer schools were interviewed and video-recorded. The project has some 100 hours of videotaped class observation, 600 interviews, more than 40 000 questionnaires, hundreds of documents, etc.

The multi-case study was very relevant because it highlighted the similarities and particularities of cases studied, factors that can facilitate comprehension of the dynamic existing between integration of ICT and success of schools in the specific context of African countries.

From detailed analysis of all the data collected, the following observations have become clear:

### **Very limited integration of ICT into teaching school subjects**

Computers and Internet are introduced into schools, but the human, material and financial resources are wasted during the initial phases. Although many teachers are wary of these new tools, many use them to prepare and enrich courses. The pupils, generally willing to use a computer and Internet, use these tools for electronic messaging and to research topics developed in classroom subjects.

Many learn to use software such as Word, Excel and PowerPoint and a few even develop websites. But overall, there is very limited integration of ICT into teaching of school subjects. ICT are taught, but are not generally used to enrich teaching, although innovative

initiatives do exist. We have noted the potential of ICT to change the school environment and transform teaching methods towards more active pedagogical methods.

### **A need to elaborate national policies encouraging pedagogical use of ICT in Africa**

Teacher training, cornerstone of successful integration of ICT into schools in Africa  
Secondary and primary school teachers should look for and find initial training in order to use ICT to enrich their teaching. This is why ERNWACA and the University of Montreal have undertaken a second phase of the project focusing on research-action and concerning teacher training for pedagogical use of ICT and its impacts on skills developed and learning. Its implementation will be carried out together with dissemination of the results of phase I which is being continued through writing scientific articles and a book by the researchers of national teams taking part in the project.

### **Vision and leadership at the national level and at school level**

As most educational innovations require, vision and leadership are needed – at national level and at school level – and increased autonomy at all levels. An appropriate policy should guide ICT development to improve the quality of education.

### **Development of appropriate content**

We need national and regional initiatives to develop appropriate content for education in Africa.

Lamine Diarra  
ERNWACA Regional office

## Towards an African Research Agenda for ICTs in Education: Interview with Pr Thierry Karsenti

Thierry Karsenti, M.A., M.Ed., Ph.D., is Director of the Interuniversity Research Centre on Education and the Teaching Profession (CRIFPE). He is the Director, with Kathryn Touré (ERNWACA), of the Panafrican Research Agenda on the Pedagogical Integration of ICT. Besides holding the Canada Research Chair in ICT in Education, Professor Karsenti is also a Full Professor at the University of Montreal. His field is the Integration of ICT into Teacher Training. His techno-pedagogical accomplishments and innovations in teacher training have been recognised in Quebec and Canada through a variety of excellence awards.

**eLA: Could you explain the background of the project and what is the role of the co-ordination team within the network?**

**Thierry Karsenti:** The PanAf Observatory is a project that networks ICT in education researchers across Africa, and creates an open space in which to share new, high-quality, user-scaled data in the field. The project began in late 2006 as an initiative of Canada's International Development Research Centre, [www.idrc.ca](http://www.idrc.ca), and currently brings together research teams in 15 countries. To ensure efficient operation, scientific rigour and a collaborative international spirit, the project is co-managed by the Educational Research Network for West and Central Africa, [www.ernwaca.org](http://www.ernwaca.org), and the Centre de recherche inter-universitaire sur la formation et la profession enseignante, [www.crifpe.ca](http://www.crifpe.ca), at the Université de Montréal.

**eLA: What are the main activities of the network?**

**Thierry Karsenti:** The project's primary activities involve data collection and summary analysis from hundreds of African educational institutions to gain an enhanced understanding of the role of ICT in teaching and learning across the continent, as well as to develop capacity-building opportunities to support a culture of collaboration and publication among African academics and institutions.

**eLA: What are the main issues addressed by the PanAfrican research Agenda developed by the network and how do you support them?**

**Thierry Karsenti:** The project focuses on ICT in education themes including: policy, access, training, impact and sustainability; it also

applies both integrated and targeted approaches to important development issues, particularly gender. These varied themes and issues are addressed using a broad set of research indicators, and a mixed quantitative/qualitative methodology.

**eLA: What has been the scientific output so far and how do you disseminate results through the (African) research community and beyond?**

**Thierry Karsenti:** The output of the PanAf project thus far has been to collect an unprecedented set of national and institutional scale data, and to share it in an open, online Observatory, [www.observatoirectic.org](http://www.observatoirectic.org). The project has also provided both continuing and subject-specific capacity-building opportunities for many of the researchers involved.

**eLA: Who can get involved (and how)?**

**Thierry Karsenti:** The goal of the Observatory is to encourage knowledge-networking, provide open access to current data, and allow users from African institutions to update information that reflects their experiences with ICT integration, in real time. To this end, African researchers, development practitioners, school directors, educators, even students, are encouraged to get involved, and should contact Toby Harper-Merrett [toby.harper-merrett@umontreal.ca](mailto:toby.harper-merrett@umontreal.ca).

**eLA: Are there any connections or co-operations to other Africa-related research networks in the field, such as the KALAfrica initiative of Kaleidoscope?**

**Thierry Karsenti:** While IDRC, ERNWACA, Université de Montréal and the initial partner institutions in Africa have extensive existing research networks in the field, the vision of the Observatory is to provide an open mapping of African schools confronting the realities of the pedagogical integration of ICTs, to give them voice, and to share their knowledge globally. To this end, new connections, collaborations and partnerships are always encouraged.

eLA: Prof Karsenti, many thanks.

February 18, 2008

From eLearning Africa 2008 News Portal  
[www.elearning-africa.com/newsportal/english/news103.php](http://www.elearning-africa.com/newsportal/english/news103.php)



Prof. Thierry Karsenti

**“The goal of the Observatory is to encourage knowledge-networking, provide open access to current data, and allow users from African institutions to update information that reflects their experiences with ICT integration, in real time.”**

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[www.panaf-edu.org](http://www.panaf-edu.org)

***"Let us use these ideas to ensure that our reconstruction and development go ahead in harmony." Nelson Mandela***

### News in brief ...

#### **International scientific committee**

The PanAf project intends to structure the international scientific committee of the PanAf project so that it will be made up of English-speaking and French-speaking members from various regions throughout the world (Sub Saharan Africa, North Africa, Europe, Americas, etc.). The meeting of the scientific committee is anticipated for the end of September 2008.

#### **Publication on challenges and successes of integration of ICT**

A publication will soon be launched on the successes and challenges of integration of ICT in the 110 schools taking part in the project « Panafricain agenda for research on pedagogical integration of ICT ». The contents of this publication will come from analysis of data collected in the Observatory.

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