Contents

Women in ICT for Education in Africa

The focus of the December 2006 issue of IICBA's Newsletter is on women and ICT in the education sector. Advances in information and communication technologies (ICTs), such as the World Wide Web, have made it possible for people to be connected around the world. People write letters to their friends, family and loved ones less and less; instead, they log on to the Internet and e-mail, chat live, use Internet phone to talk to one another and use web-cams to see each other. Commerce has expanded their profits and influence with businesses selling not only physically in their country of origin, but virtually to the whole world via the Internet. There has been a dramatic increase in the number of technology-based models for developing and delivering educational programmes via distance education.

This issue examines the empowerment of women via ICT for education in Africa. The first paper by Ineke Buskens, *Gender Research in Africa into ICTs for Empowerment (GRACE)* is on a group of 14 research teams working in 12 African countries focusing on gender and ICT. The article poses some forward thinking questions based on Millennium Development Goal 3 that aims to promote gender equality and empower women. In the second article, Davetta Samuels asks *How has the onslaught of feminism influenced socio-political policy to mainstream*

women in the ICT arena? Samuels looks at the aspect of women and ICT from a feminist point of view. The third article by Titilayo Obisesan asks the question - *Why aren't more women teaching ICTs in school?* Obisesan conducted analysis via SchoolNet Nigeria as to why more women are not teaching ICTs in school. The article analyzes the type of courses mostly studied by women and the reasons why women do not study ICT-related courses.

The fourth article, *ICT and Gender in the Democratic Republic of the Congo (D.R.C.); an Emerging and Promising Struggle*, is written by Claude Ntanta. The article is based on the project called Least Developed Countries Initiative Cisco (LDC Initiative Cisco), a joint venture between the American giant equipment supplier Cisco Systems and the United Nations, represented by the United Nations Development Program (UNDP) and the United Nations Volunteers Program (UNVP). Statistics collected by Cisco answers questions such as - how many girls and women took the program; how many of them use the Internet; how many girls and women occupy management positions, and so on.

The fifth article, by Gisele M. Yitamben, asks the question - *Have women taken advantage of the digital revolution?* The article looks at questions such as - have the women taken

advantage of ICT in terms of acquisition of competencies? Unfortunately, the study shows that girls and women tend to study and work within the traditional framework of the sectors where they are always confined, in particular to office automation, the secretariat and design areas. The sixth article, by Brenda Muyanja and Lucy Orech from *Women of Uganda Network (WOUGNET)* answers the question, *Have women benefited from the digital revolution?* The writers argue that part of the reason women have problems benefiting from ICTs is lack of access, time and cultural constraints. In the seventh article, Okwach Abagi looks at *Gender and ICT in Africa: ICT Career Women Speak out about ICT, Gender and Education in Kenya*. The article encourages women in the ICT field by outlining what

specific prominent women working in the ICT field studied and worked, while pursuing their ICT career.

In the final article, Shane Etzenhouser and Bruktawit Tigabu present an ICT project they have worked on jointly, called *Whiz Kids workshop pioneers animation broadcasting technology in Ethiopia.* This ICT animation programme can be seen every Saturday morning on Ethiopian Television (ETV).

IICBA advocates for ICT initiatives by women to bring about gender equality. The understanding of societal and cultural constraints women face can lead to effective empowerment of women. Educational ICT training by women within current techno-cultural contexts via the school system

and enterprise will make sure that the African continent hears the voices of its women and girls. It also ensures that African women and girls are part of the development of shaping and structuring ICT in Africa and the 'global village'.

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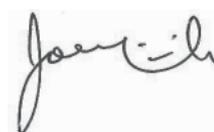
IICBA News in Brief

School Management and Leadership Training Workshop in Nigeria, 4-9 December 2006.

UNESCO-IICBA ran a training workshop for 36 school principals and inspectors drawn from 31 of the 36 regional states of the country and the capital Abuja. Thirteen of the thirty-six participants were women.

The workshop was opened on Monday, 4 December 2006, at 10:00am by Mr. Alhaji Wada Zakari, Academic Programs Head of the Universal Basic Education Commission (UBEC) of the Federal Government of Nigeria, and Mr. Abhimanyu Singh, Director of UNESCO Abuja Office and UNESCO Representative in the ECOWAS. Mr. Kabiru Isayaku, National Coordinator of TTISSA for Nigeria also attended the opening session. The venue of the workshop was Day Spring Hotel, Abuja. Mrs. Fagbulu of the UNESCO Abuja office was the facilitator of the opening session.

Each of the speakers in the opening session highlighted the importance of building the capacity of school managers for quality education. They also stressed the desirability of creating closer linkages between stakeholders in the education area and thanked UNESCO-IICBA for

organizing the training workshop. It was disclosed in the opening that the workshop was the first of its kind organized by an international organization.

Participants expressed their satisfaction with the content and organization of the training session and rated the workshop very highly. They stated that the issues discussed were very relevant to their work as principals and inspectors. They also liked the style and format of the presentations.

The workshop ended on Friday, 8 December 2006, with a closing ceremony attended by Dr. Anthony Maduekwe of UNESCO Abuja. He handed over certificates of participation to all participants and trainers.

UNESCO-IICBA/TTISSA ICT Training

UNESCO-IICBA/TTISSA and the College of Education of the Addis Ababa University jointly conducted training on integration of ICTs in education on 11-13 December 2006.

Prof. Tirussew Tefera, Dean of College of Education and TTISSA Coordinator, gave a welcoming speech followed by Dr. Joseph Ngu, Director of UNESCO-IICBA, who made the

keynote address. Dr. Butte Gottu, Acting Academic Vice President of the Addis Ababa University also made an opening speech.

The training was conducted at Addis Ababa University. Ashebir Desalegn, Project Officer at UNESCO-IICBA, explained how technology and teacher education were inter-connected. He also talked about the rationale and framework for ICTs and teacher education.

The training included a part on mainstreaming ICTs in education. There has also been hands-on workshop on education courseware and website development. At the end of the workshop the teachers produced their own educational website.

Hands-on ICT training for teachers

Gender Research in Africa into ICTs for Empowerment

GRACE is a group of 14 research teams working in 12 African countries focusing on Gender Research in Africa into ICTs for Empowerment, supported by a research grant from the International Development Research Centre of Canada. This two-year research project will be completed in April 2007.

The dream for GRACE is to evolve into a sustainable research network that will continue to engage research into women, ICTs and gender issues beyond the limited time frame of this project and will expand its base of participating researchers and countries beyond the current ones. Inspired by this vision, GRACE embraces a strong emphasis on research capacity building in all the phases of the research process. Furthermore, creating a nurturing research environment for junior researchers is a priority for all involved: for the Grace coordinating team as well as for the site projects' senior researchers.

GRACE is grounded in the concept that every team has the freedom to formulate its own research question and methodology in response to the researchers' assessment of their countries' specific needs and their own research passion. Because every team has its own research focus and brings very different talents and capacities to their work, the teams' research and research development processes are completely unique and differ greatly. The overall research question: "How do women in Africa use ICTs for empowerment?" has created a shared platform.

Because very little research into women and ICTs had been done in Africa, the networks' primary methodological focus is research of a qualitative nature, as this approach yields more in-depth insights than quantitative research and is able to highlight the various dimensions and aspects of phenomena.

Writing and Reflecting

The Grace researchers wrote their research reports for the writing and sharing workshop that took place in Durban, South Africa, from 2-15 June 2006.

Writing research results reveal how much one has learnt and to what extent this learning evokes the need for more data collection. For instance, various researchers have, on the basis of their data analysis, decided to deconstruct the concept of "empowerment" they had "built" their instruments of data collection (such as observation and interviewing) on.

Does "empowerment" only speak to the desire to rectify the various aspects of existing inequality between women and men, or does it also speak to the vision of a different world as for instance the task force working on Millennium Development Goal 3 in the Millennium Project suggests? Has there been archeological evidence of an alternative to the androcratic (patriarchal) systems we know so well as for instance the gylanic (partnership) society Riane Eisler (1995) speaks about in the *Chalice and the Blade*?

And if researchers would choose to approach the concept of empowerment in line with a vision of a different world, which would have profound consequences for the way they would "frame" their research findings, conclusions and recommendations, what kind of world would be coherent with what the research respondents have expressed as dreams for themselves?

And would the researchers in their desire to be respectful towards their respondents' voices, take their words to be truly representative of authentic conceptualizations and perceptions and thus strive to be as participatory as possible? Or would the researchers take into account that in androcratic societies women's options are necessarily adaptive preferences informed by their socialization into those societies' biased conceptualizations and perceptions of them and their capabilities as Martha Nussbaum (2000) states in *Women and Human Development – The Capabilities Approach?*

And would researchers be willing and able to take into account that their own perceptions and conceptualizations could also be adaptive preferences informed by their own socialization processes as citizens, activists and scientists in androcratic societies? And what would be the effect of this reflection be on their writing?

And in their attempts to write coherently, would the researchers be able and willing to acknowledge that their "ways of 'knowing', would reflect moments of silence (no voice), received knowledge (listening to the voice of others); subjective knowing (the inner voice); procedural knowledge (the voice of reason: separate and connected knowing) and constructed knowledge (integrating the voices), using the categorization of Women's Ways of Knowing constructed by Belenky et al (1986)?

Living and Working as Native Anthropologists

Doing qualitative research can be challenging and confrontational, especially when researchers turn to their own communities. The sociological admonition to "turn the normal anthropologically strange" in order to sharpen the observation to prevent glossing over significant issues because one has gone blind to them, can get a sharp and ironical edge in the case of "native anthropologists".

The researchers' "lives and work" within their various contexts do speak to the general research question: "How do women in Africa use ICTs for empowerment?" in a general sense. None of the Grace researchers would be able to do the work they do, empowering themselves, if it were not for their use of ICTs. Most of the researchers are women.

It can thus be expected that the research journeys have lead to introspection and self reflection, more than would normally be the case in qualitative research when women do research with women. And while this extra involvement may have given quite a few of the Grace researchers more than they bargained for, it has made the research journeys more worthwhile and the sharing we will do in the upcoming writing workshop something to look forward to. Furthermore, the more the researchers will have invested of themselves in the research process, the greater the chance will be that the research results will not only be of excellent quality, but will also lead to products that will be able to stimulate change and transformation in others.

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References

Belenky, M. F., Clinchy, B., Goldberger, N. and Tarule, J. Women's Ways of Knowing: The Development of Self, Voice and Mind. Basic Books, New York, 1986.

Nussbaum, M. C. Women and Human Development: The Capabilities Approach. Cambridge University Press, 2000.

Eisler, R. The Chalice and the Blade – Our History, Our Future. Harper San Francisco, 1995.

How Has the Onslaught of Feminism Influenced Socio-Political Policy to Mainstream Women in the ICT Arena?

Technology always involves people and their social systems. So when you use technology in education, remember that processes, approaches, rules and ways of organising things are just as important as the devices with coloured lights and screens that we call hardware.

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2001-2004

Divisions based on gender have existed since the beginning of time. Gender awareness and sensitivity is a relatively new phenomenon that has highlighted the discrepancies between the sexes. Feminist ideologies have attempted to create an egalitarian society and have made great strides since the 1960s.

This article will take its point of departure from the different feminist movements and then articulates the impact of gender based socio-political policy on the ICT education component. Lastly, the article will engage in discussion of how to involve women in the development of ICTs.

As stipulated in Welfare Theory (Fitzpatrick, 2001:140) there are three schools of thought in regards to feminism. First, there are those that believe that society simply is a 'gender division' and that all societies can be characterized in terms of fundamental gender conflict (Daly, 1979 in Fitzpatrick 2001:140). Second, there are those that relate gender to class, race and ethnicity etc. (Davis, 1982 in Fitzpatrick 2001:140). Third, there are the 'post-feminists' that argue that the battle for gender equality has almost been won and that it is time for individual women to shape their own destinies rather than the older schools of feminism collectively whining about being victims of men (Fitzpatrick, 2001:140).

It is the second and third schools of thought that have given rise to important variants such as, *liberal feminist*, *Marxist* and *socialist feminist*, *postmodernist* and *post-structuralist feminist* (Fitzpatrick, 2001:140).

Liberal feminist from Wollstonecraft (1759-97) to Friedan (1983) used the language of liberalism to promote gender-related issues and political equality (Arnot & Dillabough, 1999:168). A critique of liberal feminist is that it does not take into account the systems it operates within, which were developed by men and are dominated by men and embody masculine principles.

The *Marxist feminist movement* launched itself in the late 1960s and asked a core theoretical question - How best to analyze women's oppression under capitalism? As part of the answer, capitalist modes of production were key to explaining gender inequality, since it grounded gender oppression in the overall organization of the social reproduction of labour on which Catherine MacKinnon eloquently builds her theory of women's subordination (Gimenez & Vogel, 2005:6-8).

This theory can be criticized for underestimating the strides individual women have made within capitalist society.

The *socialist feminist* began in the early 1970s, and argued that gender is understood as socially constructed. It "connects institutionalised heterosexuality with the gender division of labour and the patriarchal relations of production" (Ingraham, 2005:204). Socialist feminist takes a closer look at the social context of capitalist and patriarchal relations as well as modern education and its links to capitalist social formations leading Bourdieu and Passeron (1977), Bernstein (1977), Bowles and Gintis (1976), Althusser (1971) to criticize the school system as 'hegemonic' state institutions producing highly variegated and stratified workforces, leading *socialist feminist* to study women's invisible labour (mothering and housework) which in turn incited *socialist feminist* to develop politicized cultures of resistance (Arnot & Dillabough, 1999:174).

One can criticize *socialist feminist* for encouraging university students to bring about change in the future instead of they themselves changing the present situation.

Postmodernist feminist is considered the third wave of feminism pioneered by women of colour and ethnicity in the 1980s and 1990s who viewed themselves as 'outsiders' within the feminist movement, and wanted to celebrate diversity and contingency by taking into consideration class, race, nationality and sexuality (Mann; Huffman, 2005:60). *Postmodernist feminist* theory can be criticized for dividing women into smaller, less effective sections increasing complexity.

Foucault and Derrida have pioneered *post-structural feminist* theory. Another strong influence comes from French feminist theorist, Kristeva and Irigaray, who drew from Lacan (Griffiths, 1995:227). *Post-structural feminists* reject the notion of the fixed self and opt for the idea that the self is positioned, can position, and positions others via the interplay of multiple and constantly shifting discourse and subjectivity at particular times and places (Francis, 1999:383). This theory can be criticized for exaggerating the positioning of the self and reducing women's plight to the status of philosophical debate.

The feminist theories previously presented will now be situated into every day life situations to better articulate the present-day impact of the movement on gender based socio-political policy in the ICT and education component.

Feminist theory has led women to advocate for their rights and has been highlighted in a number of international conferences – one of

them being the World Commission on Culture and Development, convened by UNESCO and chaired by Javier Perez de Cuellar, the former UN secretary general. The commission stated that the barriers preventing women's progress are: 1) limited access to education; 2) discriminatory appointments and promotion practices in the workplace; 3) the stress of dual domestic and professional roles; 4) family attitudes; 5) career interruptions; 6) cultural stereotyping; 7) alienation from male-dominated management culture; 8) continued propagation of the glass-ceiling syndrome; 9) absence of adequate policies and legislation to protect women's rights (UNESCO, 2000:3). The World Conferences on Women in Mexico (1975), Copenhagen (1980), Nairobi (1985), and Beijing (1995) have played a major role in the struggle to influence socio-political policy. The Beijing Platform of Action listed ongoing areas of concern for women: 1) their poverty and unequal access to social services; 2) their vulnerability to violence; 3) their absence from social and economic decision-making and power structures; 4) society's failure to recognize their rights; 5) the image of women in the media; and 6) insufficient mechanisms to promote their advancement (UNESCO, 2000:7).

The World Telecommunications Development Conference organized by the International Telecommunications Union (ITU) in Malta in 1998 commented on the findings from the five-year review of the Gender Task Force it established. The findings were posted on the UN website WomenWatch in 2000, and reported that traditional facets of discrimination still existed. Women employed in ICT-based professions worldwide tend to hold low-paying and less prestigious positions. Therefore, women need to be actively involved in the definition, design and development of new technologies (UNDP-APDIP, 2006:9). After the report, two feminist lobbying groups worked tirelessly to highlight women's issues and get the World Summit on Information Society (WSIS) to add women's concerns to their agenda. After many political setbacks, a strong commitment was made in paragraph 12 of the Declaration of Principles (DoP), which affirms that the development of ICT provides

enormous opportunities for women, who should be included in the process. But the call to include a provision for a significant number of women in the respective bodies and fora was ignored as was the recommendation for financial mechanisms to help bridge the digital divide (UNDP-APDIP, 2006:6-9).

It is obvious that feminist theory still has room to inspire lobbyists to engage in the implementation of projects about how to involve women in the development of ICTs. One way is the top-down approach – feminist lobbyist can effectively lobby governments to acknowledge gender biases and implement gender-equality laws, rules and regulations.

Another approach is the bottom-up approach whereby the education system could be the vision integrating women's issues into all facets of education. At present, women studying at the tertiary level are concentrated in health-related fields of study and education studies, while all facets of engineering is still dominated by men (UNESCO, 2000:61). Consequently there is a clear need to educate more women in ICT development and policy making by enhancing their career opportunities in the computer-engineering genre. This would entail changing socio-cultural attitudes and equalizing family responsibilities so that women can pursue their careers.

Over the years, the onslaught of feminist theory has influenced socio-political policy to mainstream women into the ICT arena and women's issues have become high profile, but more work needs to be done. Feminist lobbyists could confront the socio-cultural norms in many developing countries that pressure women to get married at a young age and start families ahead of professional considerations, as well as care for the elderly, young and sick. Feminist lobbyists could also work with the communities to change the socio-cultural norms that deem it unacceptable for women to leave their families to pursue higher education via study abroad programs. Feminist lobbyists can also work on "the prevalent belief, especially among men, that educated women cannot be controlled as easily (by them), and that education opens opportunity for women to obtain material independence from men" (UNESCO, 2000:74).

With the achievement of gender equality more women would have the opportunity and freedom to hold managerial decision-making positions and work in male dominated fields, such as ICT development and engineering, positively contributing to the economic development of their countries.

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References

African Network of Scientific and Technological Institutions (Jul. 2005) *State of Science and Technology Training Institutions in Africa*, Nairobi: Regal Press Kenya Ltd.

Arnot, Madeleine; Dillabough, Jo-Anne (Summer, 1999) "Feminist Politics and Democratic Values in Education", *Curriculum Inquiry*, Vol.29, No.2, pp.159-189.

Economic Commission for Africa (Feb., 1998) *African Women and Economic Development: Investing in our Future*, Addis Ababa: ECA.

Daly, M. (2001) 'Gyn/Ecology' in Fitzpatrick, Tony (ed.) *Welfare Theory*, Hampshire: Palgrave Publishers Ltd.

Davis, M. (2001) 'City of Quartz' in Fitzpatrick, Tony (ed.) *Welfare Theory*, Hampshire: Palgrave Publishers Ltd.

Dillabough, Jo-Anne (Sep, 1999) "Gender Politics and Conceptions of the Modern Teacher: Women, Identity and Professionalism", *British Journal of Sociology of Education*, Vol.20, No.3, pp.373-394.

Fitzpatrick, Tony (2001) *Welfare Theory*, Hampshire: Palgrave Publishers Ltd.

Francis, Becky (1999) "Modernist Reductionism or Post-structuralist Relativism: Can We Move On? An Evaluation of the Arguments in Relation to Feminist Educational Research", *Gender and Education*, Vol.11, No.4, pp.381-393.

Gimenez, Martha; Vogel, Lise (January 2005) "Marxist-Feminist Thought Today", *Science & Society,* Vol.69, No.1 pp.5-10.

Griffiths, Morwenna (Apr. 1995) "Making a Difference: Feminism, Post-Modernism and the Methodology of Educational Research", *British Educational Research Journal,* Vol.21, No.2, pp.219-235.

Huffman, Douglas (Jan. 2005) "The Decentering of Second Wave Feminism and the Rise of the Third Wave", *Science & Society*, Vol.69, No.1, pp.56-91.

Ingraham, Chrys (Jul., 1994) "The Heterosexual Imaginary: Feminist Sociology and Theories of Gender", *Sociological Theory,* Vol.12, No. 2, pp.203-219.

Ladel, Julie; Jerome, Thibault (1999) *Scientific, Technical and Vocational Education of Girls in Africa*, Paris: UNESCO.

Lee, Lisa (2005) "Tackling Technology's Image Problem Among Young Girls", *The International Journal of Sociology and Social Policy*, Vol.25, No.10/11, pp.119-130.

Lorde, Audre (January 2005) "Age, Race, Class, and Sex: Women Redefining Women", *Science & Society*, Vol.69, N.01, pp.60-74.

Mejri, Hoda (Nov., 1999) *Sixth African Regional Conference on Women*, Addis Ababa: ECA.

Roseneil, Sasha (Jun.1995) "The Coming of Age of Feminist Sociology: Some Issues of Practice and Theory for the Next Twenty Years", *The British Journal of* Sociology, Vol.46, no.2, pp.191-205.

SADC Region (Oct. 2004) *Seventh African Regional Conference on Women*, Addis Ababa: ECA.

Sutherland, Kate (Jan. 2005) "Marx and MacKinnon: The Promise and Perils of Marxism for Feminist Legal Theory", *Science & Society*, Vol.69, No.1, pp.113-132.

UNDP-APDIP (2006) *Gender in the Information Society: Emerging Issues*, New Delhi: Reed Elsevier.

UNESCO (2000) *Women, Power and the Academy: From Rhetoric to Reality*, New York: Berghan Books and UNESCO publishing.

Why Aren't More Women Teaching ICTs in School?

I just concluded a survey of schools in Abuja metropolis of Nigeria on the use of ICTs in education. My survey tool consisted of two questionnaires. One was designed for the school principals and the other for the ICT teachers in the schools.

After administering these questionnaires and collecting data, I started work on the data analysis. During this process, I realized that of all the ICT teacher respondents in the survey, 0% was female.

Interestingly, we involve a number of women in the Teacher Development Training programme which we organize from time to time in my organisation, SchoolNet Nigeria on use of ICTs in education. And among these women, we have quite a few active ones that are drawn as facilitators for other training programs for their colleagues.

These women make use of ICTs with some having personal computer systems and internet access in their homes (which is an expensive expenditure in Nigeria). They also use these facilities and other ICTs made available in the school for teaching their subjects such as geography, home economics and English language, to mention a few.

It is therefore worth being concerned about why there aren't more women teaching ICTs in schools despite their familiarity with the subject.

This issue can be traced to olden days when women had challenges gaining access to formal, education, particularly in many African and Asian countries. And women that were fortunate to have formal education were still reminded of a set primary function of a woman by the society which is getting married and tending to the needs of their husbands and children.

This mindset determined the type of courses mostly studied by women. Any course assumed to be time-demanding, highly intellectually tasking or require drudgery such as medicine and technology were informally tagged non-female courses and many women shied away from these courses.

When we put into consideration the fact that in order to teach ICT in a school, one would require a formal professional qualification in an ICT-related course, then we can explain why there are few women teaching ICT. This is because few women enroll to study ICT-related courses.

A study on Women in Technological Society: a Challenge to the Modern School by Dr. Sergey Gorinskiy carried out in Russia showed that more boys than girls think about future career in ICT and girls pay less attention to technology out of school and don't see connection between technology and their future career. Instead, they aim more to attain better grades at school rather than to develop their technological capabilities.

Finally, women face a great difficulty in being accepted as authority figures in the field of science and technology. Based on this, most women that study ICT usually take up job opportunities in the corporate business sector where they can still get instructions on their jobs rather than take the challenge of being the instructor.

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ICT and Gender in the Democratic Republic of the Congo (DRC): an Emerging and Promising Struggle

The Millennium Summit organised in 2000 by the United Nations had given rise to the Millennium Development Goals (MDGs). Their implementation has led to the setting-up of a great number of development-related projects throughout the world.

Among them, there is the project called Least Developed Countries Initiative Cisco (LDC Initiative Cisco), a joint venture between the American giant equipment supplier Cisco Systems and the United Nations represented by the United Nations Development Program (UNDP) and the United Nations Volunteers Program (UNVP).

This non-profit-making project, which lies within the Information and Communication Technologies (ICT) domain, struggles against the digital divide which exists between the developed and the developing countries. More precisely, it consists in establishing Cisco Training in the Southern countries in order to allow the populations of beneficiary countries access, with reduced conditions, to ICT training. The first training module with which the project started is called CCNA (Cisco Certified Network Association). It enables learners to learn the design, implementation and management of any computer network. In other words, it enables the training of the computer networks administrators.

In addition, the project requires all created training establishments to develop a program on gender, which shall promote the training of women in the program. In general, it is recommended that female students account for 30% of the trainees.

The Democratic Republic of Congo, which benefited from this project, with the assistance of UNDP Kinshasa, opened in May 2001 its first local academy established at the University of Kinshasa (Unikin), the capital city. A program had indeed been set up to respond to the gender issue. And two years later, the proposed strategies prevailed because the local Academy of Unikin graduated women trainees indicating a shift, from the near zero situation for women in the ICT field.

The Image of Congolese Women in ICT Sector

An information work on the women condition in ICT was conducted in the field by a United Nations Volunteer, appointed to the project during 2002-2006. The information collected was the following:

A. What is the part occupied by young girls at the higher or university level in ICT subjects?

The girls are more interested in business-oriented computing compared to other subjects such as design and programming. And even for management, there is a great number of girls in first year of university, but the numbers decreased and became less and less in subsequent years.

B. What is the part occupied by women in management sectors or in computer services of companies in the capital city? The percentage varies from 0% to 10%.

C. What is the part occupied by women in public cybercafés?

More or less 25% - they are mainly female students at higher education or university level as well as professional women.

D. What is the part of women associations, which work for the promotion of women in ICT? 1/500.

E. How many professional women have a mobile phone? - 80%.

F. How many professional women have e-mail? - More or less 5%.

G. How many female students have a mobile phone? - 75%

H. How many female students have e-mail? - 35 %

Without any doubt, the Congolese women present, at the least, a very alarming image in the whole ICT sector, but the combined efforts provided by the actors through this project open new prospects and give hope for an improved condition.

It is advisable to indicate that among the graduates registered so far, we find not only young ladies but also married women and some professionals.

Another element, which allows us to be hopeful, is that a Computer Science Club of the Unikin Academy Graduates was set up in 2005. The main objective is the promotion of women in project planning and ICT.

An additional information: since 2006, a new training module on the assembly of computers and maintenance called ITE was launched in the Academy of Unikin.

The Academy of Unikin was elevated to the rank of Regional Academy with 3 local academies in provinces and an academy in Brazzaville, making it a new sprawling organisation, which certainly contributes to the extension of the Gender Programme.

Can We Really Expect an Improvement?

The determination showed in the framework of the projects and the work achieved in the field constantly encourages the promotion of women in ICT sector. Therefore, there is good reason to expect positive results by the 2015 MDG deadline.

by Claude NTANTA
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Have Women Taken Advantage of the Digital Revolution?

Various countries have taken advantage of the advent of Information Communication Technologies (ICTs). For some, the political goodwill was frankly displayed and translated into true telecommunication policy reforms. As for Cameroon, it shows a significant delay regarding the density of fixed and mobile telephone. Despite the major obstacles to profit from the advantages of the digital revolution, there are a few lucky women who have been able to take advantage of ICT.

1. Is the Use of the Internet Widespread?

In Cameroon, the rate of Internet users in the population was only 0.16% in December 2004. Lack of infrastructure confines the use of Internet only to some large cities of the country, particularly Douala and Yaounde and some main provinces or prefectures. In addition to the quality of the telecommunication services and their prices, which do not encourage the use of Internet, there is the prohibitive cost of software and of data-processing equipment. These items are regarded as luxury products and are taxed as such at 39.25 % (customs duty and VAT).

Very few people have a telephone line and a computer, that can allow them to have an Internet connection from home. Access to Internet is thus done in public places such as cybercafés. The statistics carried out in two cybercafés show that the number of women who use the cybercafés is higher than that of men, which is around 70%. These women go there not only to exchange messages with their friends or parents, but also to take part in discussion forums. Some professionals use it to search for information and partnerships. Thus, Internet is generally used as a means of direct and instantaneous communication.

However, it is regrettable that many Net surfers do not take advantage of the huge amount of resources the Internet offers due to lack of appropriate training.

2. Have Women Taken Advantage of ICT in Terms of Acquisition of Competencies?

The advent of ICT is transforming habits and creating new employment opportunities, mainly in the installation and utilisation of telecommunications infrastructure, and the elaboration of contents.

An example experienced in the field is the case of the vocational centre for ICT training of ASAFE Knowledge Academy (AKA) in Douala, Cameroon.

AKA is an ICT training centre which has been operational since 2001. It intervenes in technical fields such as networks interconnection, structured wiring, fibre optics and copper, the configuration and maintenance of systems, programming, and office automation.

2.1 ICT, a Fallacious Sector?

The acquisition of competences in ICT has not escaped from the weight of the traditions and from prevailing stereotypes.

Many women think of the acquisition of competences in terms of the very mimetic framework of the sectors where they are always confined, in office automation, the secretariat and design. They prefer to follow the beaten tracks. As soon as things seem new, they tend to avoid them. The choice of acquisition of competences in the fields, such as the interconnection of the networks and wiring is systematically rejected both by the girls themselves and by the parents who would have to decide for their daughters or even by the employers.

To see a girl or a woman holding a screwdriver is at the same time surprising and unusual. Often the parents do not want to shake off their thinking due to conformism or ignorance. Therefore, when a man comes to look for information with AKA in office automation, he hastens to say that it is for his wife, his sister or for his daughter. When women come to register their children, they direct the girls towards office automation and the secretariat areas. A company director confessed that he could never employ a girl or a woman to install wires.

Role Played by AKA in the Demystification of ICT among Women

AKA chose to play a part in encouraging women to take advantage of the advent of ICT. It actively plays a part at 3 levels: first at the orientation service when the people concerned address it; second during the training; and finally after the training.

At the Time of Orientation

AKA has established a policy of positive discrimination at the level of training in technical fields such as wiring, telephony and networks interconnection. Women pay for these trainings, half of what a male learner pays. This price is approximately equivalent to that of the training in office automation and web design. Therefore, for a woman, the choice to study office automation or wiring is not any more a question of price, but of choice or personal will in order to express herself and to undertake a fulfilling and more remunerative career.

Generally, parents do not go to orientation and ask questions about job opportunities before deciding what their children will study. This is unfortunate, since orientation services always take time to indicate the advantages that some courses have over others in the labour market.

Sometimes stubbornness causes many girls to study office automation or secretariat. Then, after graduation, they realize that they are not able to find employment in this saturated sector. So, they return to university and take another education such as technical training, which is in great demand. At this point, the girls concentrate on their studies and ignore "gossip", from their society.

During the Training

AKA has chosen to recruit female trainers in technical fields. This procedure strongly helped to encourage girls to integrate these high value added courses. This decision has, however, sometimes involved losses of earnings for the institution. AKA has learned from past experiences what the expectations of the students are and have adapted their program to decrease the amount of losses. An example of loss of earnings occurred when some people working in a large company were interested in being trained by AKA and came to take information in order to be registered in networks interconnection. Before registering, they asked to visit the centre to make sure that AKA was well equipped, and to meet the trainers. AKA knew from past experiences that generally people wish to make sure that the trainers are men, so the person responsible for the orientation service asked them to register and gave them an appointment in the classroom during the training hour.

When the female trainers started giving their courses, the above-mentioned people asked whether they were the assistants in charge of introductions before the arrival of the real teachers. Without answering them directly, the person responsible for the orientation service responded that the introduction would extend over several weeks. Weeks passed and their various questions, sometimes even absurd ones always found attentive and appropriate answers from the female trainers. Gradually, the quality of the courses AKA provided made them forget that the trainers were women.

At the end of the training, after succeeding to international certification, one of the learners confessed: "Teacher, if at the time I was registering I was told that it was a woman, I swear that I would have asked the institution to refund me my money immediately. But, by attending your classes and following your advice, I confirm that you are a master in your field. I can praise myself today to have had you as a trainer". This is an exceptional case, but AKA has had many painful experiences where potential students did not even continue

with the course because the trainers were women.

To integrate ICT technical training in all facets of learning, AKA has chosen a methodological approach that integrates technical training in all fields and courses. In office automation, the training programme includes the use and preventive maintenance of computers, scanners, webcam, etc. and some interconnection concepts. The female learners are obliged to touch the screwdriver very regularly during their training. AKA also added personal development courses and periodic meetings during which development and research projects are conducted forcing students to debate and to express themselves in public. The program helps students overcome their feelings of inferiority.

After the Training

Some reports were made after the women finished their vocational trainings. While very ambitious men try to offer their services to the most prestigious companies, women are often shy, lack self-confidence, doubt their capacities and become intimidated on the first occasion. Moreover, very qualified women prefer working under the supervision of men; they often do not like to take risks and settle in carrying out orders.

AKA, through its partnership network with its client companies, push

women forward to undergo trainings in companies where they are led to develop solutions, and to take initiatives. They are therefore encouraged to make themselves appreciated for what they can do and not for what they are. In brief, they are encouraged to sell their competences at their right value on the labour market. Presently, four of the largest companies in Africa hire women graduates from AKA to maintain their data-processing network departments. Ninety percent of AKA graduates find immediate employment after graduation or have become self-employed.

In conclusion, in the current state of existing infrastructure, women have started to profit from the opportunities of the digital revolution. They acquire new competences; they find more fulfilling employment that gives them more visibility. However, it should be noted that to really take advantage from the opportunities generated by ICT, governments must clearly commit themselves through targeted programs and public awareness campaigns, to facilitate women's access to ICT so that they become competent in this field.

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Have Women Benefited from the Digital Revolution?

The digital revolution refers to the sweeping changes brought about by computing and communication technology during the latter half of the 20th century (Wikipedia.org).

The digital revolution marked the beginning of the Information Age and the transition from storage of information on fixed materials such as books for words and phonograph records or audiocassettes for audio, to the digital format, which is readily stored on a variety of media. Of equal importance to the revolution was the ability to easily move digital information between media, and to access or distribute it remotely through the use of a variety of information and communication technologies (ICTs).

In this paper, we address the question as to the benefits women have derived from the Digital Revolution based on the experience of Women of Uganda Network (WOUGNET).

WOUGNET is a non-governmental organization initiated in May 2000 by several women's organisations in Uganda to develop the use of ICTs among women as tools to share information and address issues collectively.

WOUGNET's mission is to promote and support the use of ICTs by women and women organisations in Uganda, so that they can take advantage of the opportunities presented by ICTs in order to effectively address national and local problems of sustainable national development.

WOUGNET activities are carried out under four main program areas: Information Sharing and Networking, Technical Support, Gender and ICT Policy Advocacy and Rural Access. WOUGNET is supported by a number of partners including the Association for Progressive Communications (APC), Dimitra Project/FAO, Hivos, I-Network/IICD, Kabissa, and the Technical Centre for Agricultural and Rural Co-operation ACP-EU (CTA).

Presently WOUGNET has 92 women organizations as members. The members are located in urban areas and/or district towns and in rural areas where there is limited access to ICTs, in particular, the Internet.

Women in the Digital Age

The ability to easily and rapidly share information on a global scale brought with it a whole new level of unlimited opportunities through ICTs.

One area in which Ugandan women have achieved a breakthrough is the use of mobile telephones. This is an area where women have access - though not as widely nationwide as it should be. Through the use of mobile phones, women have been able to have access, create and exchange information.

However, in some cases, the mobile phone is perceived by men as a potential threat to the balance between themselves and women. This has caused sentiments of mistrust and hence disruptions in household relationships, especially in terms of breaking the control over women (GRACE, 2006).

In addition, mobile phones and other forms of ICTs have widened women's economic opportunities through providing new forms of employment opportunities, access to markets, and access to distance education. ICTs also allow for sharing information that can be used to promote economic empowerment.

Women are also using electronic communication for networking to promote their business interests. Federations of business and professional women, such as the Uganda Women Entrepreneurs Association Limited (UWEAL), have joined in business-to-business networks that enable them to develop partners, suppliers, advisors and networking contacts all over the world.

Challenges for Women in the Digital Age

While there have been huge benefits to society from the digital revolution, especially in terms of the accessibility of information, there are a number of concerns. Expanded powers of communication and information sharing, increased capabilities for existing technologies, and the advent of news technology brought with it many potential opportunities for exploitation and exclusion (Mottin-Sylla, 2005). This is especially the case for women in developing countries like Uganda.

WOUGNET members report that many of their own members do not have access to ICTs. Even where ICTs may be available, women have often not benefited due to time and cultural constraints arising from their gender roles within a community. In addition, it has been widely shown that poverty is highly feminised, implying that females form a dominant section of the poor (WOUGNET, 2007).

According to Mottin-Sylla (2005)

"Intuitively, nobody can deny the existence of gender disparities within the ICT sector, mostly against women … in truth, women, including those in Africa, are absolutely capable – if they are given the same opportunities – of the same ICT skills as men. The marginalisation of women in the ICT sector, like in other sectors, is not due to men or women, but to the unequal opportunities given to women, which prejudices them." (Mottin-Sylla, 2005)

There are a number of factors that have hampered progress of women in the digital era (GRACE, 2006). One key factor is high illiteracy. Women need basic literacy and numeric skills in order to read and compose simple messages, navigate the Internet and execute commands in most software applications.

The dominance of international languages on the Internet, computer hardware and software excludes access to the majority of the population, especially women with little or no formal schooling that would allow them to learn and use international languages. Language has been identified as one of the top barriers to Internet use for women.

In addition, the role of Ugandan women is limited to the private, domestic and social spheres that are given little or no value. On the contrary, the gender roles assigned to men pertain to the public, economic and legal spheres, and their concerns are thus given more value. This does not allow for equal benefit from the digital revolution.

Women are largely responsible for all the reproductive work within the households and only partly in productive occupations. Thus, they have limited time to spend outside the homes, including accessing ICTs.

Private, home-based use of computers and Internet are currently available only to the economically well off people in developing countries. Equipment, connection and maintenance costs are generally far beyond and are an obstacle to the economically disadvantaged people, especially women.

On the other hand, the geographical location of public ICT centres or sites also affects women's access to information technology. Women's free access to public places is limited by the multiple roles and responsibilities, heavy workloads and all sorts of social customs to an extent that even when public ICT centres are established, their access and use is seldom granted to women.

Stories from the Field

In order to enhance women's participation in the digital revolution and to address some of the challenges highlighted above, a number of women organizations in Uganda have undertaken ICT programs.

We begin with an example from WOUGNET's Rural Access program. This program aims at improving rural women's access to ICTs, as well as strengthening and building their capacity in ICT use and application.

In 2005, a project on "Enhancing Access to Agricultural Information using ICTs (EAAI)" was initiated with support from CTA. The project is implemented in twelve villages in Apac District, Northern Uganda, targeting grassroots women farmers as the main beneficiaries. Its main objective is to develop and improve information and communication systems so as to enable easy access to agricultural information for rural women farmers in Apac district. ICTs in use include community radio, radio cassettes, audio/video cassettes, CD-ROMs, and these are complemented by regular face-to-face meetings.

A rural multi-purpose telecentre has also been established – Kubere Information Centre – to support information dissemination and project coordination activities. The main activities include the generation, collection, repackaging and dissemination of local agricultural content and content in the local language - Luo, building the capacity of rural women in the use of radio, radio cassettes, mobile phones and SMS, computers and the Internet.

A number of WOUGNET members have also embarked on ICT training for women. For example, Ntulume Village Women's Development Association (NVIWODA) conducts ICT training workshops. NVIWODA itself participated in a Train-the-Trainer session conducted by WOUGNET and moved on to develop its own training sessions. It is from such workshops, like the NVIWODA workshops, that more women have discovered the use and effectiveness of something as simple as having an e-mail address. In addition, the women are trained and equipped with entrepreneurial skills and hence are capable of influencing and making decisions.

After realizing that while significant efforts were made by government and NGOs to disseminate information on a range of issues to promote sustainable development for all, a lot still needs to be done. Most of this information, particularly relating to women's economic empowerment, is not readily accessible. In response to this need, the Council for Economic Empowerment for Women in Africa – Uganda (CEEWA-U) developed an ICT Project to bridge the information gap between information sources, institutions with information and the end users. The project facilitates linkages with women at the grass root level and assists in establishing the impact of government policies and programmes and how the use and application of ICTs create an avenue for bridging the information gap.

With initial support from International Development Research Centre (1999-2001), CEEWA-U was able to mobilize women and pilot-test the project in three districts, namely Mpigi, Wakiso and Kampala in Central Uganda. During this period, CEEWA-U sensitized and created awareness among women entrepreneurs about the role ICTs play in empowering and strengthening their ability to run and manage their lives and businesses.

Another WOUGNET member, Isis Women's International Cross-Cultural Exchange (Isis-WICCE) builds the skills and capacity of women to enable them to be knowledgeable, and to effectively contribute towards addressing the issues affecting them. The action-oriented and cross-cultural training offers women activists from conflict-ridden countries working on women's human rights issues the opportunity to meet and share ideas, exchange skills, experiences and strategies, and plan on future networking.

Isis-WICCE's aim has been to create a vanguard of women with the knowledge of human rights, and the ability to investigate and document the experiences of women in a sensitive manner, and use the documented information for effective advocacy. The international level training focuses on international humanitarian law, human rights law, gender specific sesearch methods, advocacy and coalition building. Regional level training adds to this the issues of conflict analysis, conflict

management and conflict resolution. Skills in using ICTs for advocacy and redress is provided in all the training that Isis-WICCE runs.

Another women's organisation, Uganda Media Women's Association (UMWA) operates a radio station 101.7 Mama FM which now covers a radius of 450 Km around Kampala city and targets particularly women between the active age of 15-45 and the general public. It aims at advocating for women, broadcasting educational programmes, offering a channel for development communication, and offering training/ practical experience for particularly female communicators.

Have Women Benefited from the Digital Revolution?

The short answer would be yes and no, because it is only the minority of women that indeed have access to ICTs.

However, if one considers the group of women that have had access, these have surely benefited whether they were in rural or urban areas.

If we take, for example, the rural women farmers associated with the Kubere Information Centre in Apac who are using a variety of ICTs, one can see the benefits.

For example, women farmers are using mobile phones to coordinate their activities and to seek information. A woman farmer may make a phone call to the agricultural expert to inquire about some problem she has got with her crops in the field. This action enables her to take appropriate action to save her crops so that she does not lose her whole field, in case it is a problem that could destroy a garden.

With the same mobile phone, a rural woman farmer can call the veterinary officer to describe a disease that has attacked her animal, talk about her location and invite the veterinary officer to her home to treat her animal. In this case, she treats a disease that may be contagious to other animals.

The women also use mobile phones to find out market prices and source for markets available for their produce and to make comparison between available markets so that they can take informed decisions to sell their produce.

Other ICTs in use by the rural women farmers in Apac District include radio cassettes that are used to share information on health, education, market information and agricultural information, to mention but a few. With Internet access, the women who have the skills to use email and the Internet get informed on issues of interest to them and are able to take appropriate action.

However, for those women who do not have ready access to ICTs, the digital revolution has essentially passed them by.

Concluding Remarks

While the digital revolution is a window to many social and economic opportunities and benefits, in general, the majority of women are yet to realise such benefits. It is therefore both essential and urgent that ICT experts and technicians become aware of, and trained in, gender issues. Conversely, those responsible for policies of social promotion (of women and men) need to become aware of, and trained in, ICT issues.

Women's ability to exercise their responsibilities, use their capacities, and realize their projects will depend on efforts to reduce poverty and exclusion. Being able to take advantage of opportunities available as a result of the digital revolution is particularly critical in order for women to progress.

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References:

1. Council for Economic Empowerment of Women in Africa – Uganda (CEEWA-U), http://www.wougnet.org/Profiles/ceewau.html

2. Isis Women's International Cross-Cultural Exchange (Isis-WICCE), http://www.wougnet.org/Profiles/isis.html

3. Mottin-Sylla M. (2005). The Gender Digital Divide in Francophone Africa, a Harsh Reality. Senegal: ENDA

4. Ntulume Village Women's Development Association (NVIWODA), http://www.wougnet.org/Profiles/nviwoda.html

5. Uganda Media Women's Association (UMWA), http://www.wougnet.org/Profiles/umwa.html

6. Uganda Women Entrepreneurs Association Limited (UWEAL), http://www.wougnet.org/Profiles/uweal.html

7. WOUGNET (2006). GRACE Report on the Uptake and Impact of the CD-ROM 'Rural Women in Africa: Ideas for Earning Money'.

8. WOUGNET (2007). Research Report. Uganda Country-based Research, Policy Support and Advocacy Partnerships for Pro-Poor ICT.

Gender and ICT in Africa: ICT Career Women Speak out about ICT, Gender and Education in Kenya

Information and Communication Technology (ICT) has become a potent force in transforming social, economic and political life globally. There are strong indications that ICTs can be effective mechanisms that enable less-industrialized countries, like those in Africa, to 'leapfrog' stages of development. Among other things, "*ICT have made it possible to find fast access to, and distribution of, information as well as new ways of doing business in real time at a cheaper cost*. Even with this potential, the issues of social inclusion and exclusion have emerged as a dimension of the range of critical issues which need more research and debate as we progress into the 21st century. In particular, there is need to have practical interventions that would shed more light on the linkage between ICTs and the concept of human development in general and the effect of ICTs on women's empowerment in particular.

In the last five years, the spread, acquisition and access to Information, Communication Technology (ICT) have been growing very fast in Kenya. Currently, there is a continued high demand from the public, young and old, women and men, to acquire relevant skills to access ICTs. This is because there is a close link between such skills and employment and/or career progression in and outside the country in both public and private sectors. The growth of the ICT sector has been phenomenal, from mobile phones to internet services among other. Besides, the growth of training opportunities has also skyrocketed. The institutionalization of ICT by the Government of Kenya is at an advanced stage, with a draft ICT policy in place. Mainstreaming ICT at work place in both public and private sectors has become a culture and a good business practice.

With all the encouraging development of ICT in Kenya, there is limited research and debate on gender and ICT in general, and how women appropriate and benefit from this development revolution in particular. There is limited information on how mainstreaming ICT in development sectors have impacted on women compared to men at the work place, either in public or private sector.

It is from the above context that a study was designed to investigate how career women in ICT have accessed and are appropriating ICT and have been empowered career-wise. The study was undertaken by Gender Research in Africa into ICT Empowerment (GRACE) Network, a research and capacity building project in 12 African countries supported by International Development Research Centre (IDRC).

Our interest was to establish and describe how women have ventured into and are managing ICT as career in Kenya, and how such women have managed to deal with the technical and social challenges in the world of work. A case study methodology was used, where identified women were engaged in series of informal discussions. The study relied on key informants purposively selected professional women in ICT, either as owners, CEOs or technical persons. We used qualitative techniques, capturing the 'voices' and experiences of the respondents through focus group discussions and in-depth interviews.

In this article, we summarize the 'voices' of some of the career women in ICT as they talk of gender, ICT and the empowerment of women in Kenya. One of them is Gilda Odera, the CEO of Skyweb Technologies Ltd. Gilda's early schooling started here in Kenya, from primary right up to high school. She studied her A-levels at Statehouse Girls High School. From there she went to the University of Nairobi. She majored in Sociology and graduated in 1989 with an upper second class honors degree. Through her vision, passing to succeed and focus, she managed to rise through the ranks and is now heading an ICT business, with a gender policy and/or affirmative action towards the promotion of women in ICT.

The other was Ms. Njeri Rionge, director and CEO of Wananchi Online, Nairobi Kenya. Njeri, after her secondary education, attended three different universities, namely Laverne University in Athens, Greece, Northlake in Texas and then USIU in Kenya. After joining the Laverne University in Athens, Greece, she took some courses which she thought were important. In Northlake University, she did some other "high impact courses" as she calls them. She knows herself to be forward thinking and has always done computer science with a marketing bias at certificate level, and she has very many certificates of high impact courses. She calls herself a business person, who believes in forward thinking and that has put her where she wants to be today as a business person. The last course she did in 2002 was Corporate Governance. Prior to that, she did Collective Index which is a human resource tool, Customs Service and Marketing, and Managing for Results.

The third participant was Winnie Omondi, Senior Systems Analyst in the Post Bank. Her position was the most senior among five women in the Post Bank. Within an ICT department of 33 officers, there are only 5 women in post. Most of the top posts are held by men, though she also thinks that because they are very technical fields, most women tend to shy away from them, possibly because they are not sure of themselves. Winnie says her education was fairly straightforward with no interruptions. Her primary education was in Kisumu town, after which she moved on to the Kenya High School where she did her 'O' level. She then joined the Aga Khan Academy where she did her 'A' level. After her A level, she joined the Kenya Polytechnic in 1987 (being in the IT pioneer group), for a diploma course in computer science. She says that she was the only woman in a class of 25 and other college mates always wondered why she was in that class. Winnie later joined the University of Nairobi where she did a bachelor's degree in commerce, (management option).

Gender Issues and ICT in Kenya

Although the three professional women did not face obvious gender discrimination or stereotyping during their school days, they believe that girls were and are still facing a lot of challenges that are gender based. They hasten to add that the challenges they faced while in school were normal. These had largely to do with the biological changes which occur, especially during puberty, which if not well managed, tend to affect girls' performance in their work at school. This is particularly serious at high school, in cases of mixed secondary schools, where boys and male teachers harass female students.

Such harassment at times continues in their careers, especially in male dominated organisations. Gilda points out that cultural and traditional perceptions and practices have influenced how girls are trained and placed career-wise. In many societies in Kenya, like in other African countries, many girls do not have access or have limited access to schooling. And even those with access tend to shy away from doing mathematics and sciences, Gilda asserts. Due to this, it becomes difficult and challenging to narrow the gender gap in ICT at the work place.

"I know many girls who faced gender discrimination. But not in our family. At home, my family has been very open in terms of the way my parents brought us up. There has been nothing like this is a boy and this is a girl.

We (my other two sisters and myself) were the first children, so we were all taken to school. We were supported and we all graduated and there was nothing like discrimination like you are reaching this stage or you can't do that. My parents were very open. And the sky was the limit for us. This was the song and advice. And my parents really empowered us to a very large extend because all of us are entrepreneurs. All of us are now employed. So we have that spirit and my father has always encouraged me …"

Winnie points out that one of the major gender issues in ICTs is one of perception. The societal expectations that are gender-biased put pressure on women in ICT and the kind of jobs they pursue. The perception by both ICT users or by her male colleagues has been that the kind of work she does is for men. She states that most people normally expect a male person to be in a managerial position, especially in an ICT organization. This is something that is engraved in the minds of both women and men. She adds that "People expect a woman to be in a lower position, especially that of a secretary, but when they discover you hold a senior position, they get very surprised".

Our discussion with women in ICT also indicated that the under-representation of women in ICT is the same everywhere, not only in training institutions, but even in ICT workshops, conferences and seminars. Thus, opportunities to enhance women's knowledge and skills in ICT are generally limited if not gender-biased.

Taking ICT as a career, to a large extent, comes down to doing well in mathematics and sciences in school. In many countries in SSA, just like in Kenya, the lack of interest in ICT often manifests itself at school level in terms of subject choice. In Kenya, there is a noticeable decrease in the number of girls choosing sciences, especially at university level. Girls' performance in such subjects is also low at both secondary and high school levels. Growing gender gap in the choice of subject, both at school and higher education level, seem to be a concern for many women in ICT.

The key informants observed that there continues to be a growing gap in the choice of professional training subjects in ICT related courses. Generally, many women would avoid technical subjects in ICT compared to men. Many women tend to be interested in customer care related subjects in ICT. Even those who have trained as technicians, tend to avoid the 'techie' job. This is something that needs to be addressed. It needs concerted and joint efforts from the government, the private

sector and all the players in ICT sector to reduce this gender gap. Besides, ICT professionals who are women have to come out and make deliberate effort to create a social climate to convince young women to develop interest in ICT and concentrate in building their careers in this sector.

The three professionals in our study observed that the gender gap in the digital divide is of increasing concern and a challenge to African governments and other major players in ICT sector. Currently, the access to and use of ICT is directly linked to social and economic development. The poor, women in particular, tend to be marginalized by ever changing ICT environment.

Conclusion

It is imperative to ensure that women in Africa are targeted and empowered to understand the significance of ICTs and use them. Without full participation in the use of information technology, women are left without the key to participation in the global world of the 21st century. There is a strong justification for mainstreaming gender into any education system in Africa.

It is our thesis that the main issue/question is not so much how women and men access and use ICTs, or how they are valued as workers; rather, it is how our knowledge and perceptions of careers and the world of work has been shaped by gender, and more particularly, by male domination. Engendering our socialization and education in particular is the first step towards making ICTs women-friendly. Education and policy reforms in this direction are desirable in Kenya, as in many African countries.

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Whiz Kids Workshop Pioneers Animation Broadcasting Technology in Ethiopia

Meet Tsehai, Ethiopian giraffe and the star of Whiz Kids Workshop's serial animation for children, *Tsehai Loves Learning*.

Tsehai is a yellow giraffe with orange polka dots who goes through life learning new things every day from her mother, her father, her little brother Fikr, and Gash Ayli, the Wise Turtle who lives next door.

Tsehai is the star of the show. Children learn with this lovable giraffe as she identifies the letters of the alphabet, laments the death of a life-giving tree, and comes to understand the importance of washing hands.

More than two years ago, Bruktawit Tigabu and Shane Etzenhouser had the vision of making hand-made puppets and then filming them to bring a new learning tool to young children in Ethiopia. Now that dream is a reality.

But having a dream and making it a reality were two different things.

Bruktawit was formerly a school teacher at Two Wings Academy teaching science and English. When she and her husband, Shane, married, they crafted the idea of creating a show together. Shane had long dreamt of making a puppet show, but the dream had not yet taken shape. As Shane and Bruktawit began to work together, they were compelled by the fact that hardly any educational options are available for young children in Ethiopia. Many children do not go to school at all. There are no freely provided Kindergartens. So, only children from families who can afford it have access to early childhood education. The couple also found a wealth of research into how to educate young children through television.

With these ponderings, they brought together Bruktawit's magical gift of interacting with young children with Shane's computer programming skills, and a new creation was born—Tsehai, the giraffe who loves learning and can instill that love into other children.

Bruktawit and Shane created Tsehai and her world of animal characters from socks, paper maché, dyed fabrics, and computer animation.

With hours and hours of hard work, staying up through the night filming, animating, writing music, editing, testing, and re-editing, the two labored and created a puppet animation show that is now being broadcast to an estimated of more than 2 million children across Ethiopia.

The work doesn't stop there—after Whiz Kids Workshop produced a complete production, they spent days and days trekking back and forth around the city, during the long arduous process of seeking support for *Tsehai Loves Learning*.

Seeking funding has been even harder. Bruktawit and Shane eeked out a living for years without a salary and faced obstacles head-on in seeking to pioneer something that no one had ever tried before. The constraints of funding placed much pressure on Whiz Kids Workshop to cater to each particular donor needs. But Bruktawit and Shane wanted to stay true to their vision of a balanced 5-prong approach to child development which includes social, academic, socio-emotional, physical development as well as personal values.

For each door that opened, a hundred other doors closed, and Bruktawit and Shane had to summon all their courage to persevere despite the challenges they faced.

Whiz Kids Workshop had its first break-through when UNESCO supported the production of four episodes on environment, the value of water, water conservation, and sanitation.

Last October, Bruktawit was selected to receive professional training in animation. She traveled to Kenya to attend a 5-week, UNESCO-sponsored "Africa Animated 3.0!" where she learned about developing a concept, script writing, directing, animating, keeping originality and a special "African take" on animation. Shane was also sponsored to attend a portion of the training.

Bruktawit found the experience one of the most challenging in her life. She learned how to develop creative production under time crunches and stress, how to work closely with participants from all over Africa, how to accept and incorporate criticism on creative productions. By the end of the training, participants had each created a two-minute animation regarding

Tsehai learning to read with her neighbor Gash Ayli
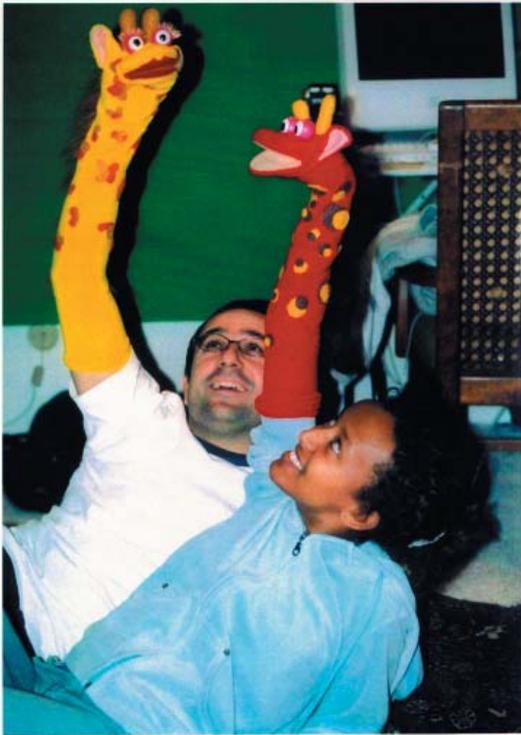
quality of the show will improve after incorporating what she has learned.

Furthermore, she says, "After people complete an intensive training like this, they say, "This is easy". They can do it. They can express their feelings and messages in a creative and interesting ways. I want to establish that kind of opportunity for training that allows and encourages young women to come forward and attend animation training. I am the first Ethiopian to participate in this training, and one of few women. More than just saying something, I want to do something - I want to make "Africa Animated" happen here in Ethiopia."

And she is doing something.

Each week, Shane and Bruktawit train a group of adolescents, age 11-17, equipping them with state-of-the-art animation programming skills. After 4 months of training, Bruktawit finds that the youth are starting to become very comfortable and confident with the animation software. Bruktawit and Shane feel they are training these Ethiopian youth to become the nation's next generation of animators. In the
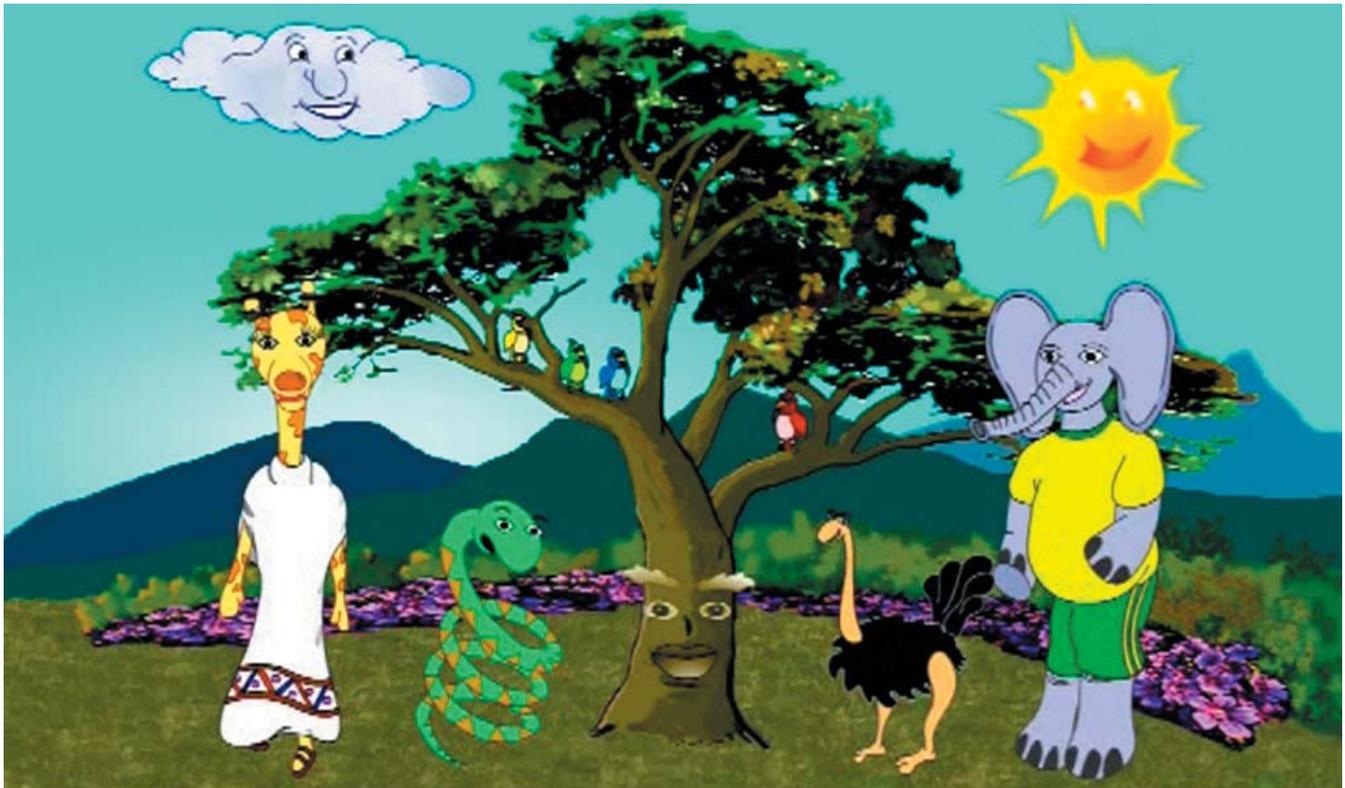
future, they would like to put the youth's work on their television show, in a "From Kids to Kids" animation section of the series.

Whiz Kids Workshop is truly pioneering a new area of information and communication technology for Ethiopia. But Bruktawit and Shane are not letting these skills stay only with themselves, or the youth they train. They are also training a cadre of Ethiopian professional-level animators.

"Now that production demand is expanding, so are we. We have hired an audio editor, video editor, and an animator - and instead of just doing it, now we are learning how to teach people what we do."

Bruktawit and Shane are passionate about contributing to Ethiopia's future, and that passion is reflected in *Tsehai Loves Learning*. Upcoming episodes of the show centers on personal values like truthfulness, patience, and joyfulness can be seen on Ethiopian Television (ETV) on alternate Sundays and Saturdays at 9:00 am. Whiz Kids Workshop is also developing future story lines on child labor, HIV/AIDS and nutrition.

Bruktawit Tigabu and Shane
Etzenhouser
Director, Whiz Kids

the environment in teams of two. Bruktawit says, "Now I am not afraid of technology. I feel confident to try out any new software, and I feel I can teach people what I have learned ."

Bruktawit has utilized the experience to enrich her ability to produce high-quality, engaging Ethiopian animation for *Tsehai Loves Learning*. She feels that the production

From the UNESCO funded episode "Keep it Green"