Globalization and information and communication technology in and for nonformal secondary education in Tanzania and Uganda

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In this study I examined the availability of Information and Communication Technology (ICT) facilities and the utilization of these resources in nonformal secondary schools in Tanzania and Uganda. We used a comparative, embedded-case study design. Questionnaires, interviews, and documentary reviews were used to collect data. Research respondents included the educational officials in the ministries of education, heads of institutions, adult educators, and adult students. The data were collected in Dar es salaam, Tanzania, and Kampala, Uganda. The required sample size was obtained through purposive sampling and then stratified. It was found that Tanzania and Uganda have seemingly good policies on *aims* for development and the use of ICT facilities in the provision of secondary education. The study found that none of the four centers (two in Tanzania and two in Uganda) had computer laboratory, and there were no computers means for teaching and learning. Only one center had computers but these computers were not used for teaching and learning. However, the study found that some of the adult students were computer literate and they used the skills in Internet cafes for various purposes but not for school-related learning. A comparative study of the two countries has found that they have many characteristics in common in terms of ICT developments and application. Both countries had "ICT in education" policies. However, implementation of these policies in nonformal secondary education institutions is far from practice. More investment and policy implementation is needed to make students in nonformal centers use ICT for learning.

Keywords: Information and Communication Technology, ICT, nonformal education, Tanzania, Uganda, globalization

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Introduction
There is a consensus among scholars belonging to different disciplines that the development, diffusion, and utilization of Information and Communication Technology (ICT) are having an impact on all aspects of human life (Warschauer & Matuchniak, 2010, p. 179; Calderaro, 2010, p. 23). ICT is a broad and all-encompassing concept in communication sciences. ICT is a form of technology used for communication and to transmit, store, create, share, or exchange information (The Ministry of Education and Vocational Training, 2007, p. 2; World Bank, 2002, p. 3). This is a broad definition covering such technologies as radio, television, video, telephone, and computers and Internet. While radio, television, and telephone play an important role in teaching and learning, the concern in this study is on computers, Internet and related services and applications. However, there are questions to which no simple answers are given:
a) Do all societies experience the information and communication revolution equally (access, use, and type of use of ICT facilities)?
b) Is there any policy for ICT use in education?
c) Is the use of ICT in teaching and learning in developing countries a reality? If not, what are the challenges?
d) Which approaches are in place for ICT in education?

Purpose and objectives of the study
The broad aim of the study was to investigate and provide knowledge about the role of ICTs in the teaching and learning in nonformal secondary education settings. Specifically, the objectives of the study were:

a) To examine the availability of ICTs facilities in institutions providing nonformal secondary education.
b) To investigate the nature and extent of utilization of ICT in nonformal secondary education settings in Tanzania and Uganda.
c) To explore whether the nature and utilization of ICT in adult teaching and learning at national and institutional levels are similar or different by means of cross-national and cross-institutional analyses.

Conceptualizing nonformal education
The conception of nonformal education (NFE) has been a concern of many scholars (see for example Carron & Carr-Hill, 1991; Coombs & Ahmed, 1974; Hamadache, 1991, p. 113; Kleis, Lang, Mietus and Tiapula 1974, p. 6; Rogers, 2005, p. 103) though a universally accepted definition is hard to find. The definition of NFE is not as straight forward as it may seem to be for formal education as Hamadache (1991, p. 113) noted:

The concept of nonformal education is by definition broad, even somewhat nebulous. But it would be impossible, indeed pointless, to give this concept a single, universal definition, as what distinguishes nonformal education is the variety of forms it can take on in response to the different demands and needs of different individuals or groups. Moreover, nonformal education can only be defined with respect to its function in a specific context. We must remember that

nonformal education was designed to compensate for shortcomings and contradictions in the traditional school system and to satisfy the often urgent needs overlooked by formal education.

<div align="right">— Hamadache (1991, p. 113)</div>

Although there is some truth in Hamadache claim, yet NFE can be defined to a lesser degree of precision. Some scholars have tried to do that and most seem to share similar conceptions. A starting point in an attempt to define nonformal education might be traced as far back as the 1960s and 1970s when Coombs and Ahmed defined nonformal education as:

Nonformal education is any organized, systematic, educational activity, carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population, adults as well as children.

<div align="right">— Coombs and Ahmed (1974, p. 8)</div>

Additionally, Coombs and Ahmed's (1974) major contribution to the development of nonformal education is the recognition of the 'tripartite' parts of education, which is formal, nonformal and informal. But, they are criticized for considering the three as distinct and incompatible entities rather than supplementary and complementary (La Belle, 1981; Brennan, 1997). More contributions on the definition of nonformal education emerged as presented below:

Nonformal education is any organized educational activity outside the established formal system whether operating separately or as an important feature of some broader activity that is intended to serve identifiable learning clienteles and learning objectives.

<div align="right">— Okukawa (2006, p. 7)</div>

Any organized, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population, adults as well as children.

<div align="right">— Rogers (2005, p. 103)</div>

Here, nonformal education is simply any organized educational activity outside the school and college mainstream: whether or not the school and college system is graded and hierarchically structured is not the issue; activities in the formal and nonformal sectors may well share the same characteristics; and so on. The point is that the activities are supplementary or, in some cases, alternative to that mainstream.

<div align="right">— Carron and Carr-Hill (1991, p. 21)</div>

Nonformal education refers to organized out-of-school educational programs designed to provide specific learning experiences for specific target populations.

<div align="right">— La Belle (1975, p. 20)</div>

Nonformal education is any intentional and systematic educational enterprise (usually outside of traditional schooling) in which content, media, time units, admission criteria, staff, facilities and other system components are selected and/or adapted for particular students, populations or situations in order to maximize attainment of the learning mission and minimize maintenance constraints of the system.

<div align="right">— Kleis, et al (1974, p. 6)</div>

A closer look at all of the above definitions suggests that most of the authors just paraphrase Coombs (1968) or tried to make attempts to add some further precision, but still end up with problems of defining it as a residual category. What does this mean? This may imply that the meaning of nonformal education depends on what, in a given country/state/area, is considered inside the category to which it is residual but also it is a matter of time and place. Further, in these definitions NFE is considered to be a separate 'branch' of education but closely related to formal education. Further, common in these definitions are such features which are also related to Hamadache's (1991, p. 114) and that of Kleis, et al (1974, pp. 6-7) characterizations of nonformal education as shown below:

→ *The many and various forms that it takes.*
→ *The functional nature of its content, in relation to specific contexts, thus its receptiveness to the local environment and its ability to respond to its needs.*
→ *Specific objectives-often short-term-confined to one area, context or group; its curricula designed to meet specific, pre-established needs centering on the learner.*
→ *Flexibility in its implementation.*
→ *Heterogeneous target groups.*
→ *More flexible admission requirements than in the formal system*
→ *Activities that can be organized and systematic but are never routine.*
→ *Activities that are often organized on a one-off basis or performed within a shorter time frame than those in the formal system.*
→ *Use of volunteer or part-time educators and use of non-professional staff, paid or volunteer.*
→ *Self-sufficiency and participation.*

<div align="right">— Hamadache (1991, p. 114)</div>

→ *Not likely to be identified as – education.*
→ *Concerned with immediate and practical missions.*
→ *Occurs outside schools.*
→ *Proof of knowledge is by performance rather than certification.*
→ *Does not involve highly organized content, staff or structure,*
→ *Part-time activity of participants.*
→ *Voluntary participation.*
→ *Instruction is seldom graded and sequential.*
→ *It is usually less costly than formal education.*
→ *Does not usually involve customary admission criteria.*
→ *Selection of mentors is likely to be based more upon demonstrated ability than on credentials.*

→ *Not restricted to any particular organizational, curricular or personnel classification.*
→ *It has potential for multiplier effects, economy and efficiency because of its openness to utilize appropriate personnel, media, and other elements which may be available in a given situation.*

— Kleis, et al (1974, p. 6)

The way Hamadache (1991, p. 114) and Kleis, et al (1974, pp. 6-7) have characterized nonformal education should be seen as a starting point in discerning complex nonformal education. However, there are some issues presented which are also applicable in the formal education. For example, the issue of voluntarism might be seen as relevant especially for teachers even in the formal education system. For example, there have been practices of teacher voluntarism in the formal education system too especially when the government cannot employ all graduate teachers. The only difference is the degree or quantitative aspect of teachers who volunteer. Moreover, post primary education is a mere right and not compulsory, in Tanzania for example. This denotes some sort of voluntarism on the part of learners and parents who need such education.

What is nonformal education is designated for? Further understanding of nonformal education might be seen in the role or the different purposes it plays. Hamadache (1991, pp. 116-120) lists three major functions, two of them being of interest here: broadening access (reducing the length of compulsory education and/or school day, community centers supplementing formal schools, programs in areas with low school enrollment); and second chance programs (access to education for mobile populations). In the classification, nonformal secondary education falls into both functions, that is, broadening access (by reducing the length of compulsory education and/or school day) and also offering second chances. Brennan (1997, pp. 190-194) suggests that nonformal education may be seen as operating into three different but related forms: complementing formal education; nonformal education as an alternative; and nonformal education as a supplement. Talking in relation to nonformal education as a supplement, Brennan (1997:193) has the view that:

This type of nonformal education is of a more recent origin and reflects the world situation after the fall of communism and the globalization of economies and trade with emphasis on competition and development. This type of nonformal education is a response to the issue of the changing role of governments and the private sector in the life of the nation and its economy and the acceptance of education as a commodity…

— Brennan (1997, p. 193)

Although Brennan claims that nonformal education reflected the situation after the fall of communism, in developing countries nonformal education also reflects the ability of the country to enroll all age-going school population taking into account resource constraint and mismanagement.

In defining nonformal education, therefore, it is important to consider the various forms and types, participants and the aim of the program nonformal education is serving. For the purpose of the this study nonformal education is defined as a type of education provided to children, youth and adults who

are/were excluded in the formal education/school system for various reasons and now are pursuing such education for various reasons (labor market, for example). It is noteworthy that nonformal education especially when considered as supplementary depends largely on the size and functionality of the formal education system in the country concerned. In this context, nonformal education plays a relatively important role in widening access to education facilities.

Globalization and ICT
There is a close link between globalization and ICT development. It is the ICT that overcome spatial constraints to communication and makes the world "borderless". ICT development has impact in almost all aspects of life. No wonder that some sociologists claim that we are living in the informational societies resulting from information revolution (Castells, 2010). According to Castells (2010), the informational revolution is characterized by information as its raw material; pervasiveness of the effects of the new technologies; the networking logic of any system or set of relationships using these new information technologies; flexibility; and the growing convergence of technologies into a highly integrated system.

So how does ICT manifest itself in social, political, economical, and educational life? According to Dale, the economic position of a country is a key factor in mediating the effects of globalization (Dale, 1999). The same applies to ICT. Nation-states with a relatively well developed economy will enjoy the sweet side of ICT while countries with a weak economy will enjoy less.

While weak ICT development is the reality for many nation-states, one is frequently told in the literature on globalization that the current global economy, which manifests itself in national and regional levels is characterized by informationalism; globalism; interaction of informationalism and globality; and profitability and competition (Castells, 2010). ICT comes with several challenges. For example, a few people will now handle a task, which previously required many. This means redundancy to some employees and in worst scenario, unemployment. On the other hand the same ICT will mean higher pay and good working conditions for those who are employed in ICT—intensive economic activity and also competitiveness and profitability to the firm or government. In education, the development of ICT might mean the following:
a) Increased access to educational facilities (for example, distance learning);
b) Virtual classes, schools, and universities;
c) Increased educational demand, especially by adults;
d) ICT as a taught subject or discipline;
e) ICT as a resource.

There are reasons to believe that ICT has increasingly transformed the way teaching and learning is organized in the developed world. However, much less is known about the practicality of ICT in education in the developing world taking into account that "…there are large areas of the world and considerable segments of the population, switched off from the new technological system…" (Castells,

2010, p. 32). Most of these segments of the population Castells is referring to belong to the developing world.

The digital divide
The first question in the list above (in the introduction section) has led to different terminologies in addressing the different inequalities in accessing, using, and applying ICT resources. Calderaro (2010, pp. 23–27) came up with four types of inequalities related to ICT. Calderao named these:
a) Digital access divide (gaps in accessing ICT facilities);
b) Digital skills divide (gaps in skills necessary for using ICT facilities);
c) Digital diffusion divide (gaps in time between and among individuals to adopt ICT);
d) Digital participation divide (unequal participation by people in using ICT facilities)

While in developed world there is concern about a "digital divide" among different social groups, in developing countries the problem is lack of computers and infrastructural development. The digital divide existing between developed and developing countries is obvious. However, there is also a digital divide within the developing world and when it comes to education there is a digital divide between and among different disciplines. For example, a student studying computer science and engineering might have privileged access compared to a student studying languages or educational sciences. Also there are of course differences among families. For example, Warscheur & Matuchniak (2010, pp. 183–184) found in the United States of America that families with higher income and education have broader and faster Internet access.

Educational policies and ICT
Policy statements regarding the development and utilization of ICT in education, especially for the formal education system, seem to be fairly common and also exist in developing countries. For example, Tanzania and Uganda have policy documents guiding the development and use of ICT in education. However, what happens at a practical level has not been examined. Even the policy itself is not exhaustive and inclusive enough to give a clear picture of the development of ICT in and for education and viable and measurable strategies to achieve stated goals.

The use of ICT in teaching and learning requires some conditions to be met. These conditions include the ICT infrastructural development (both software and hardware, power supply); human resource development; teachers' attitudinal change; national or societal, sectorial, and school systems change to accommodate ICT development and use; and Internet reliably available, affordable, and accessible (connectivity). However, these preconditions are not met in most developing world. Referring to education in general, Kessy, Kaemba & Gachoka (2006) state that ICT in education is underutilized in Tanzania, Kenya, and Zambia. The authors mentioned the reasons for such under utilization as being costs, poor infrastructure and lack of resources, government policy, corruption, cultural attitudes and ignorance, dynamic nature of technology, lack of skilled human resources, students' limited computer knowledge and perceived difficult in the integration of ICT in education. What is the case for the use of

ICT in nonformal secondary education in Tanzania and Uganda? The current study attempted to answer the question as findings indicate.

The absence of ICT and lack of application of ICT resources, in developing countries is an illustration of the digital divide (Chinn & Fairlie, 2007; Pelgrum, 2001; Norris, 2001). Note should be taken that there are inequalities in access not only to education but also to ICT facilities (especially computers and Internet) between institutions, individuals, and societies. Pelgrum (2001) produced, in a worldwide survey, a long list of obstacles to ICT. Some of the obstacles were: insufficient number of computers; low quality teacher training; teachers' lack of knowledge and skills; difficulties to integrate in instruction; lack of interest of teachers; insufficient teacher time; and not enough training opportunities (see Pelgrum, 2001, for a list of countries that participated in the study and the design of the study).

Taking into account the socio-economic contexts and the importance of ICT infrastructural development in world economy as a whole, the questions to ask in the present study include: has ICT transformed teaching and learning in any way at all in the nonformal secondary education centers in Tanzania and Uganda or are they entirely cut off from this alleged worldwide trend? Do nonformal secondary education centers have necessary infrastructures and computer laboratories? Are students in nonformal secondary education centers computer literate? And if students are literate, do they use computers and the Internet for learning purposes? Though these questions merit inclusion in the present study, there are admittedly grounds for not expecting much presence of ICT. Such centers are not financially well resourced and the types of exams for which they prepare are not likely to require ICT skills. The same situation exists for students in the mainstream formal secondary schools.

Methods

This study used an embedded case study design in the sense that multiple cases were used. The study is comparative in nature—comparing national policies and practices of adult education. As a result case study research was thought instrumental in explaining each case which later formed a basis for comparison. The general purposes and rationale for comparative education and comparative education research have been well documented (see, for example, Arnove, 2002; Bray, 2007, pp. 15–38; Kandel. 1933, p. xix; Noah, 1984, pp. 551–557; Phillips, 2000, p. 11; 1999; Phillips & Schweisfurth 2006, pp. 14–22). For most of these educational comparativists the purposes of comparative educational studies are as summarized by Fairbrother:

…understanding our own and other countries' educational systems; improving, developing, and reforming educational systems, policy, and practice; predicting the success and consequences of educational change; and developing tools to aid in each of these endeavours through the construction of theoretical frameworks
— Fairbrother (2005, p. 6).

As a scientific endeavour, Thomas (1998:3) argues that most comparative studies have four general aims—namely, description, explanation, prediction, and

evaluation. Generally, these are not only confined to comparative education research; rather they are for all scientific studies and they are the rules of the game. Practically, only some of these rationales are addressed in a single or particular study. This has been the case in the current study. The comparative aspect in this study was first, meant to describe the situation and offer possible explanation on the existing phenomenon of adult education in the two countries. It was to offer explanation of the current policies and practices of adult education in the two countries and discern similarities and differences. Third and last, was to develop a comparative framework, which is relevant and reflected the situation in developing countries in relation to causal-effect linkages between globalization and adult education in these countries.

Some scholars in comparative studies have been claiming that comparing is human nature; others as far as globalization is concerned have stated that

…[g]iven the infancy of our efforts to understand globalization and the complexity of the phenomenon, it seems sensible to ask not only for an intensification of our interdisciplinary awareness but also for a comparative approach to the sociology of globalization.

— Gullén (2001).

In the same article, the author went on arguing that:

We need to engage in comparative work in the dual sense of using multiple methods of data collection and analysis, and of applying our theoretical and empirical tools to a variety of research settings defined at various levels of analysis. The differences and similarities across such settings ought to give us a handle on the patterns according to which the causes and effects of globalization change from one setting to another. Without a comparative approach, the literature on globalization promises to remain as puzzling and contradictory as the phenomenon itself.

— Gullén (2001)

The plan was to have two institutions from each country—one being a government institution and the other being a private or non-governmental organization (NGO) institution. We found that in Uganda there were no institution established by the government. Therefore, both institutions chosen in Uganda were private. The study aimed at interviewing all four heads of institutions. This goal was met, but some of the heads were reluctant and they even refused to be voice-recorded. The researcher had to agree not to record the interview in those cases. Four adult educators were accessed 103 students from each adult education institution completed a questionnaire, with a total of sixteen questions. The questionnaires were distributed and the responses were as indicated in Table 1. Another group accessed was that of officials (here referred to as policymakers) in the ministries responsible for adult education. The plan was to interview two officials from each country. I managed to access one policymaker from Tanzania in the first-round of data collection. The second Tanzanian policymaker was then not accessible due to other duties, but that official was reached in a second round of data collection.

In Uganda four policymakers were accessed in the first phase of data collection—three from one of the two ministries dealing with education, namely Ministry of Education and Sports (dealing with all education matters except adult education, especially with literacy programs) and the Ministry of Gender, Labour, and Social Development (dealing with adult literacy). Again, in Uganda there was an added complication of no staff on the establishment of any ministry who had a designated responsibility for out-of-secondary school students. The officials contacted would therefore refer me to others without anyone thinking he was the right person to speak to and get authoritative information from. It was like snow-balling.

Table 1. Sample size

Category	Uganga			Tanzania		
	Government	NGOs	Total	Government	NGOs	Total
Officials in the Ministries related to adult education	4	0	4	2	0	2
Heads of Institutions	0	2	2	1	1	2
Adult educators	0	8	8	3	2	5
Adult students	0	78	78	68	66	134
Total	4	88	92	74	69	143

Findings and Discussion

The study was conducted in Tanzania and Uganda. The findings are presented based on the two countries. Findings in Tanzania are discussed first followed by those of Uganda.

Tanzania

Policy Provision

Two policies have been studied: the National Information and Communications Technologies Policy (NICTP) and the Information & Communication Technology Policy for Basic Education (ICTPBE).

The Ministry of Education and Vocational Training conceives ICTs as "...forms of technology that are used for communication and to transmit, store, create, share, or exchange information" (Ministry of Education and Vocational Training, 2007:2). This is a broad definition covering such technologies as radio, television, video, telephone, and computers. Soon after independence, primary and secondary schools were provided with radios to enable students to listen to educational programs designed by the Ministry of Education in collaboration with Radio Tanzania Dar es Salaam—the only state radio in the country at the time. Such media and programs were also used in adult education. There were radios, cinema, zonal newspapers aimed at reaching adults up to rural areas. A detailed account of radio programs, newspapers, and cinema is given by Bwatwa, Paul & Mlekwa (1989). However, those activities were not geared to adult secondary education.

The mission of the NICTP for Tanzania was to become a hub of ICT infrastructure and solutions that enhance sustainable socio-economic development and accelerated poverty reduction both nationally and globally. The overall task is "To enhance nation-wide economic growth and social progress by encouraging beneficial ICT activities in all sectors through providing a conducive framework for investments in capacity building and in promoting multi-layered co-operation and *knowledge sharing locally as well as globally.*" (Italicized is my own emphasis). In the ICTPBE it is stated:

In light of the many challenges Tanzania has to overcome in order to provide quality education for all, ICT should be given high priority. Unless action is taken soon, the country will fall further behind in the global information society, be unable to participate in the knowledge economy effectively, and its people will lack the skills they need for life in the digital age.
                    – Ministry of Education and Vocational Training (2007, p. 3)

T*he Ministry is thus promoting the introduction and integration of ICT in the education sector. ICT will play an important part in improving the lives of people in Tanzania and in creating job opportunities. There are many initiatives throughout the country benefiting from ICT. The major goal is to build a highly skilled and educated workforce with aptitude and skills in the application of ICT in everyday life. For this reason there is need to provide schools, colleges and other educational institutions with the know-how and resources that will include them in the knowledge society"*
                    –Ministry of Education and Vocational Training (2007, pp. 1-2).

It further states, though adult education is not explicitly referred to:

...Although this policy is limited to basic education, the Ministry recognizes that it is linked to related activities in vocational training, higher education, regional administration and local government, as well as ICT activities in other areas and sectors
                    – Ministry of Education and Vocational Training (2007, p. 2).

Furthermore, the NICTP acknowledges the persistence of digital divide among Tanzanians. It states:

This digital divide is evident within nations, and between the developing and the developed world. The current Tanzania ICT situation requires urgent steps to enable Tanzanians to participate meaningfully in the knowledge economy, recognizing that Tanzania has low levels of human capital development, local content creation; ICT infrastructure and access, which together lead to high costs of participation
                    –Ministry of Communication and Transport (2003).

Concerning ICT in education a Tanzania policymaker (TZ/PM) commented as follows:

TZ/PM/1: In fact I can look that in both sides. In one way it can help in development if we are going to adopt the culture that will enable us to develop. If we have this culture of using computer Internet, it will help us in our development. On the other side we leave the culture, which we think will ruin or not contributing to our development…

TZ/PM/1: ... It is easier for somebody who is in Mbeya to learn the same thing as a person at the University of Dar es Salaam. OK?

The policymaker had the utilitarian perspective of ICT in relation to development. The policymaker conceives ICT as both an opportunity and a threat if misused. To this adult education policymaker, ICT is a potential tool in developing but she had not mentioned how important ICT is in learning. Additionally, nowhere in the policy documents examined, is there any explicit mention of the importance of ICT specifically for adult education-notwithstanding the importance of adult education in Tanzanian history of education.

The Practice
The Lubaga Center has been assigned by the government to make use of ODL (open and distant learning) to offer continued education to the increasing number of adults who are not in the formal secondary school system.

The way the Commonwealth of Learning has characterized ODL is relevant and applicable to the Lubaga. Thus, there is a need for ICT to be in place. As noted, ICT is broad and encompasses different kinds of media. For the purpose of this study computer and related services are of special concern because ICT is one of the important aspects of globalization in order to make the world "connected" hence the vision of "a network society" (Castells, 2000). Therefore, a number of questions were asked to informants about ICT. The first question was about the existence of computer laboratories in institutions.

Table 1.1 shows that 111 informants out of 134 accessed, directly or indirectly indicated no awareness of any computer laboratory at their institution. The heads of the two institutions (Lubaga and Subira) confirmed the lack of such computer facilities that might be accessible to students.

Table 1.1 Computer laboratory and available computers at both Centers

		Quantity of available computers					
		Not stated	6–10	11–15	No PC	I don't know	Total
Does the Institution have a computer laboratory?	not stated	12	0	0	0	0	12
	yes	6	0	1	0	4	11
	no	92	1	0	9	9	111
	Total	110	1	1	9	13	134

The heads of these institutions said there were no computers to be used mainly *by students*. My visit at the Lubaga Center revealed that almost all staff offices at the national headquarters of this government-established institute are installed with Internet-connected computers regardless of the duties of the office bearer.

At Subira Center, there were no computers at all. Even the head of the institution had no computer. There was a television set in the head's office, which might or might not also be meant for teaching and learning purposes.

Table 1.2 Computers with Internet connection

Responses	Frequency	Percent
not stated	33	25
yes	4	3
no	96	72
Total	134	100

It was intended to collect information on the availability of Internet services on the available computers. Table 1.2 shows that while 72 percent of adult students at the two institutions said that the computers were not connected to the Internet, 25 percent left the question unanswered. In the absence of any computer laboratory, computers might still be placed in classrooms and offices. I visited some classes and offices and saw no computers in classrooms and in offices at Subira center while at Lubaga center there were some in staff offices. All in all, one can safely conclude that students had no access to computers at their centers, but that does not mean that these students had no access at all somewhere outside their center.

Table 1.3 Different Internet uses (*N=134*)

Responses/Email uses	Emailing	Chatting	Administrative	Academic purposes
not stated	51	51	57	49
most used	10	7	10	10
more used	7	4	4	7
used	5	7	4	7
rarely used	6	9	4	4
not used at all	20	21	20	20
missing system	1	1	1	2
Total	100	100	100	100

Table 1.3 shows responses to a question asking them to rank their own different uses of Internet services in general (for example at an Internet café or in a home). About half left the question unanswered, very probably because they had no access at all. On each sub question concerning usage, another some 20 percent answered "not used at all." On the other hand some 24–28 percent of these 134 persons did mention some use for academic purposes—approximately the same proportion as for email use. Given their lack of access to email at their institution, it seems unlikely that email would serve an academic purpose for any appreciable number of students. However, the skills acquired in email could potentially have such use. Otherwise the table shows some use for "administrative purposes" presumably referring to needs in their own private life.

The findings suggest that there are good policy ambitions on ICT in education, which also should apply to students in adult education, but the implementation of that ambition is lacking in these two institutions. Probably, the employment of ICT in adult education is not practical at the moment due to lack

of facilities and connectivity. Such usage as may occur by students it is clearly not a part of any systematic training provision of access for them—at these institutions of nonformal secondary education for adults.

Uganda

Policy Provision

In addressing the response to globalization at national level in relation to ICT in education in Uganda, several policies were reviewed. These documents included: the Constitution; Poverty Eradication Action Plan (PEAP) 1, 2 and especially 3 (Ministry of Finance, Planning and Economic Development, 1997; 2005; 2009) the National Information and Technology Policy, the National Technology Bill; the Computer Misuse Bill; and the Policy on the Information and Communication Technology in the Education sector. Of relevance to the study are the policy on Information and Communication Technology in the Education sector and the National Information and Communication Technology. Information collected in the field and documentary surveys have indicated a good number of institutions dealing with the issue of ICT. Some of these institutions are: The Uganda National Council for Science and Technology, The Ministry of Education and Sports; National Information Technology Agency; and the Uganda Communications Commission without undermining the role played by the Ministry of Finance, planning and Economic Development. The Ministry of Education and Sports (2005) in the Policy on Information and Communication Technology in the Education Sector conceives ICT as:

...electronic means of capturing, storing, communicating information, manufacture and assembly'. ICTs are based on digital information and comprise computer hardware, software and networks. There are other technologies, which deal with information like the 'intermediate technologies' based largely on analogue information held on electro-magnetic waves such as radio, television and telephony; 'literate' technology based on information held as written word such as books and newspapers and ' organic' technology based on human body such as the brain and sound waves. These technologies are now merging rapidly as they join the digital world.

– Ministry of Education and Sports (2005, p. 10)

The policy statement of the National information and communications technology policy is that "The Government of the Republic of Uganda recognizes the important role information and ICT play in national development. Government consequently unreservedly commits itself to champion the development and use of ICT in Uganda.". The vision, as stipulated in the National information and communications technology, is to have "a Uganda where national development, especially human development and good governance, shall be sustainably enhanced, promoted and accelerated by efficient application and use of ICT, including timely access to information" (Ministry of Works, Housing and Communication, 2003:32). Enriched by the national ICT policy, the vision of the Information & Communication Technology Policy for

Education sector is "Mainstreaming of ICT in the Education Sector" whereas the mission statement is to "Provide equitable access to quality education and timely accurate information using ICT". The policy, however, admits that:

As a matter of fact, ICT still remains the tool for the future, which should be developed as a matter of urgency. The basic goal is to improve and broaden equitable access to information, communication and technology as a way of creating new opportunities for socio-economic development in the country. The policy objectives outlined below are meant to cascade the implementation of ICT Policy to the end users.

– Ministry of Education and Sports (2005, p. 15)

The survey of the documents indicates that there is a government concern with ICT but also that the integration of ICT in the formal education system so far has been given little attention by the government, and that there is hardly any mention at all about the potential of ICT for publicly run adult education. ICT investment in the nonformal education is seen as a task of the private sector. One policymaker (UG/PM/1) said:

UG/PM /1: In fact there are few programs using ICT in adult education apart from radio programs and in some cases in TVs. The programs are incidental; they are not planned and not run by the government. You find people identifying a topic of interest and discussing it on the radio or TV. That is all. The government is mainly involved during literacy week and only gives statements especially on literacy week and literacy international day to all these TVs and radios. Otherwise utilizing radios as government has not played a good role...computers of course in urban areas are very useful, but in rural areas it is very difficult apart from these phones. Nowadays it is notable that adults are coming to class because they want to learn some functions about the phone. So ICT is driving people to join adult education classes. Apart from computers being expensive, in rural areas first of all there is a problem of electricity. So it is mainly in urban areas, in rural areas there is not much regarding computers.

So, the use of ICT, particularly computers, as a tool of teaching and learning is limited for various reasons as indicated in the quotation. The findings suggest that there may be policy ambitions on ICT in education but the practical part is difficult to implement and not much in evidence. The employment of ICT in adult education is not practical at the moment due to lack of facilities. In this regard the response of adult education institutions to globalization in terms of ICT is limited. So, while there is faith in beneficial potential of ICT for the teaching and learning process, it is not seen as implementable yet. One policymaker said:

UG/PM /2: "The use of ICT especially computers in education is very important. When used in education, computers help to consolidate computer literacy, reduces the problem of inaccessibility to information but also it opens the door to other sources of information. But the problem is that the government cannot afford to buy computers to all educational institutions in the country, as you know computers are very expensive. I think the feasible and practical way is to introduce cost sharing in buying computers. This might be very practical in higher learning institutions. I am uncertain on the practicality at lower levels of education and adult education you are

dealing with. The government is aware of the potential of ICT in education that why there is a government policy on it."

Similar observations about education in general are made by Kessy, Kaemba & Gachoka (2006) who state that ICT in education is underutilized in Tanzania, Kenya, and Zambia. Reasons mentioned, especially, regarding computers in education are: costs, poor infrastructure and lack of resources, government policy, corruption, cultural attitudes and ignorance, dynamic nature of technology, lack of skilled human resources, students' limited computer knowledge, and perceived difficulty in the integration of ICT in education.

What occurs in Practice?

To assess the practicability of using computers in nonformal secondary education institutions in Uganda, two questions were asked: *Does the institution have a computer laboratory*? This was a Yes/No question. Since, an institution might not have a computer laboratory, but might have computers elsewhere, I further asked: *What is the number of available computers at the institution?* In retrospect I realized I should also have asked more specifically whether the computers were for students to use, and I should have asked to see the computer facilities. The notes from interviews with head of institutions and the now existing questionnaires from students, do admittedly not now give a very clear picture. At both locations, all the educators mentioned there were computers laboratories in the school and some did mention that there were computers. Whatever they may have had in mind, it clearly could not have been computers for students to use. It could be they were not telling the truth or it could be they had in mind installations that only teachers could access. In any event, at each institution it was clear that there was no computer laboratory or any other location in the school at which students could have had access to a computer for their educational use.

The response to both questions from adult students from both institutions are presented in Table 1.4a, which shows that 15 out of 18 adult students who filled the questionnaires at Wandegeya center indicated that there was a computer laboratory at their institution. At Banda center 14 adult students out of 60 mentioned that their institution had computer laboratory. Contradictorily, in the same institution 24 adult students who filled in the questionnaires mentioned that there was no computer laboratory at Banda center. Close to quarter of all adult students (in both institutions) did not answer the question. Information from the head of institution at Wandegeya center is in line with those adult students who indicated that there was no computer laboratory at that institution. The same applied to the head of institution at Banda although I managed to see two PCs in his office, one was used by the personal secretary and the other was used by him. Also, when I went to another center owned by the same proprietor, I observed several computers but I could not access them to see their functionality.

Apart from the availability of computers, information was collected on the availability of Internet services to the available computers. Most of the respondents did not answer the question about whether the computers were connected to the Internet or not. Presumably because there was no computer

laboratory in the first place (Table 1.4a and b) at which students could have had any school-based access to a computer.

Table 1.4a Availability of computer laboratory (*N=78*)

	Does the institution have computer laboratory?			
	No answer	No answer	No answer	No answer
Wandegeya center	2	1	15	18
Banda center	20	14	24	58
Total	22	15	39	76

Table 1.4b Availability of computers (*both institutions, N=78***)**

	Available computers								
	No answer	1-5	6-10	11-15	16-20	21+	I don't know	No PC	Total
Wandegeya center	14	1	0	0	1	0	2	0	18
Banda center	40	3	6	2	5	1	2	1	60
Total	54	4	6	2	6	1	4	1	78

The head of institution at Banda center had the opinion that adult students should bear the cost of acquiring and maintaining computers but was worried about the economic capacity of most adult students' ability to pay in addition to school fees. He said that some of his students are facing financial problems in paying the existing fees and others cannot afford at all. "The situation might even be worse when we will increase fees. That will constitute an automatic expulsion of most of my students," he added. The informants were asked to mention possible different uses of the Internet assuming that they used the Internet. The percentages checking different responses options for the four stated different "uses" are shown in Table 1.5.

Table 1.5. Different Internet uses (*adult students both institutions, N=78*)

Degree of Use	Emailing	Academic purposes	Chatting	Administration
no answer	67	68	68	73
most used	15	9	6	6
more used	3	3	5	-
used	5	5	6	5
rarely used	5	10	5	4
not used at all	5	5	9	11
Total	100	100	100	100

Source: Field data, 2010

Table 1.5 shows that most respondents did not answer to this question (close to half of the respondents for any of the uses). Emailing was the most frequent usage (some "use" by 15 percent). Thus, such use as there is, is probably not mainly for academic purposes in spite of the high ambitions that policy documents have about the potential of ICT for academic purposes.

Conclusion

While both countries (Tanzania and Uganda) seem to have ambitious policies on ICT in education, the practical part of it in nonformal secondary schools is difficult to demonstrate. At least it seems that ICT hardly plays any part at all in the teaching and learning activities at the four adult education centers studied in Tanzania and Uganda. All centers still rely on the "traditional" way of teaching (face-to-face) and not by means of ICT. Developing the use of ICT might still in future become a means of attracting more students to these centers and increasing their income and making the centers more sustainable and competitive. The findings have also indicated that ICT is of interest to most students and would need to be taught if the students' wishes for curriculum improvement were to be met. The findings at the four centers fit the opinion that globalization in terms of ICTs has not yet touched the classroom level when it comes to the transmission of knowledge (Carnoy, 1999). The claim by Castells (2010) that we are living in the informational society does not apply to what is occurring in nonformal secondary education in Tanzania and Uganda, though it may begin to be true for some societies. One could also infer that the absence of ICT use in the four centers I visited is an illustration of the digital divide Castells (2010).

Acknowledgement

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