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# Globalisation: The role of new information and communication technologies in distance education



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## Abstract

The rapid changes and convergence of new information and communication technologies over the past decade have changed the way distance education is employed. The new information and communication technology revolution has enabled academic institutions to provide a flexible and more open learning environment to students and has brought distant sites into an electronic web of information. As a result, the gist of this paper is to examine the promise of new information and communication technologies and public service broadcasting (particularly television broadcast-based distance education) in Africa in the face of globalisation.

**Keywords:** television broadcast-based distance education, globalisation, public service broadcasting, new information and communication technologies, and telecentres

## Introduction

In order to set a useful foundation for the discussion on the subject under investigation, it is useful to begin by defining globalisation and the new information and communication technologies. There are varied definitions of globalisation and the new information and communication technologies. This paper adopts the following definitions: “Globalisation is a process (or set of

processes) which embodies a transformation in the spatial organisation of social relations and transactions assessed in terms of their extensity, intensity, velocity and impact generating trans-continental or interregional flows and networks of activity, interaction, and the exercise of power (Held et al. 1999, 16)". Evans (1995, 358) substantiates this view by pointing out that globalisation "is not simply that the 'world has got smaller'... [r]ather, some time-space relations are radically altered to an extent which fundamentally affects the way people now view, understand and engage the world in which they live. It is far more than technology which facilitates globalisation, it transcends the economic, social, political and cultural boundaries and is inclusive of processes, structures and products".

Giddens (1990, 64) describes the concept as: "the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by the events occurring many miles away and *vice versa*". Such temporal and spatial processes, Hohman (1998) suggests, would not be possible without multiple networks of coordination and interaction, and a proper supporting communicative infrastructure. Therefore, the international communication network is both a feature of globalisation and the very condition of possibility for the process of globalization.

The new information and communication technologies includes: direct-to-home (DTH) systems; digitalisation and digital compression technology; digital audio broadcasting and satellite radio; digital terrestrial television; internet and broadband multi-media; interactive television, combining features of traditional broadcast technology with those of the Net; new technologies in programme production and especially in the 'post-production' stage, involving use of computers, new digital equipment and techniques; and new developments which make it possible to have smaller, more portable and less expensive terminals for up linking television/radio programmes to satellites (Government of India Ministry of Information and Broadcasting 2008).

Whereas the nature of, and likely consequences of globalisation and new information and communication technologies on distance education are fiercely debated, the prevailing view is that the African continent, along with the rest of the developing world, needs to become active producers of content and have wider access to information and communication technologies if it is to compete in a global economy (Lelliott, Pendlebury & Enslin 2000). It is in this context that the relevance of new information and communication technologies (especially the internet and internet based technologies) and public service broadcasting (and especially television) to the future of distance education

in Africa is investigated. This is a position paper presenting desktop research on the promise of the new information and communications technologies for distance education and the purchase of public service broadcasting (particularly television broadcast-based distance education) in the face of globalisation

## **Methodology**

The methods used to track down literature are the following:

- an extensive search of the World Wide Web; and
- a systematic follow up of key research texts related to the subject of discussion.

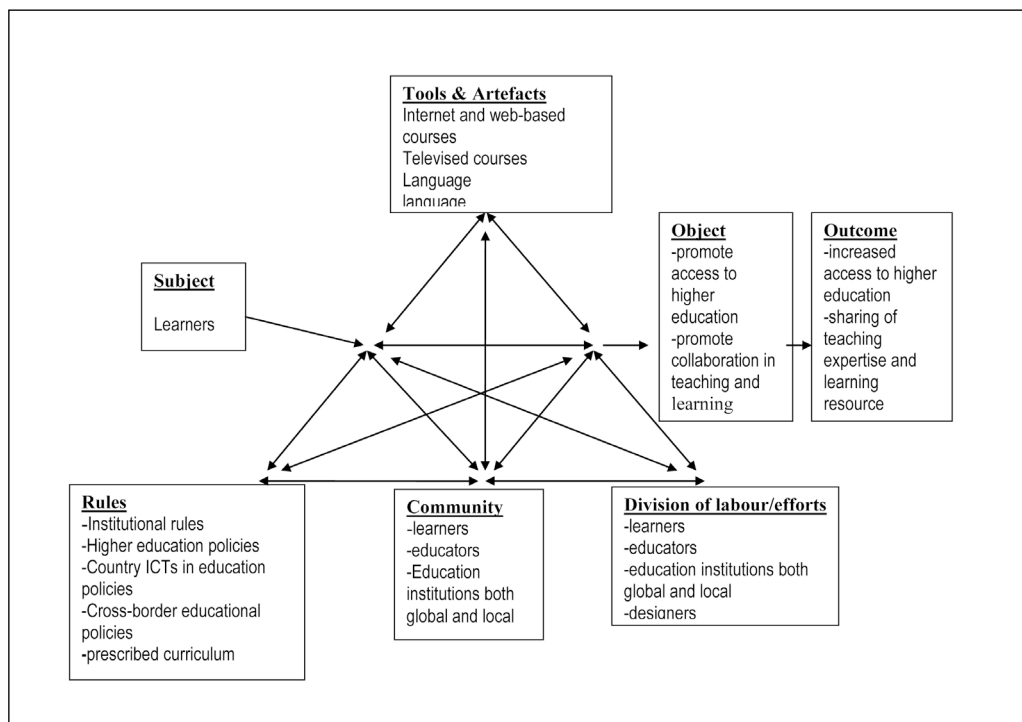
In this overall search, relevant information was gathered from various sources such as Web documents, journal articles, books, master's and doctoral theses and library databases.

## **Theoretical framework**

This article adopts Cultural-Historical Activity Theory as a theoretical framework as it has become a recognized framework for understanding how tools such as ICTs which are implemented into curricula and learning programmes in higher education institutions (Engeström 1987; Knight 2002). It offers valuable analytic insights to explain how ICTs are used in higher education, and is particularly useful in that it puts emphasis on the importance of the context and also can be used to identify contradictions in the system (Kirkup and Kirkwood 2005). The theory uses the principle of tool mediation, either conceptual (language) or instrumental (physical use of devices, in this case Internet and web-based technologies and public service broadcasting), and also examines how human behavior is oriented towards a primary goal (Object, in this case to promote access to education) (Leont'ev 1978). Vygotsky first advanced the tool mediation model that included a subject and his or her object of activity. Though useful as a model of individual cognitive functioning that observes the critical role of cultural mediation, Vygotsky's (1978) model failed to include critical societal dynamics such as communities, the rules that structure them, and "the continuously negotiated distribution of tasks, powers, and responsibilities among the participants of an activity system" (Cole and Engeström 1993:7). Building on this critique, initially raised by Leontiev (1981), the scope of tool mediation model was increased by Engeström (1987) who added the sociocultural context of community that both constrains and

enables activity (in this case, the activity is learning) through rules and the division of labour.

Figure 1 below, which was used in this study, shows the interactions between: ICTs as mediating artefacts which are used by academics in teaching; the rules and conventions in which the globalised courses are developed and implemented; (both internal to the university and external policies in the discipline and higher education); the professional communities of practice; and the division of labour between those devising, implementing and undertaking the course. All the above elements of the activity system have an impact on the desired learning outcome (in this case, increased access to higher education).



**Figure 2:** Diagram representing second generational activity theory (Engeström, 1987:78).

This research was informed by the following principles of Cultural-Historical Activity Theory (see Engeström 1993; 1995, 1999) which have played an important role in my attempt to understand the promise of new information

and communication technologies and public service broadcasting in Africa in the face of globalisation.

These principles are:

- the activity (in this case learning) is a social process growing out of joint activity;
- the multi-voicedness of activity systems which holds that an activity system is always a community of multiple points of view, traditions and interests. The division of labour in an activity creates different positions for the participants, and the participants carry their own diverse histories. This multi-voicedness is a source of trouble and a source of innovation, demanding actions of translation and negotiation;
- Historicity-activity systems take shape and get transformed over lengthy periods of time. Their problems and potentials can only be understood against their own history; and
- The central role of contradictions as sources of change and development. Contradictions are historically accumulating structural tensions within and between activity systems. When an activity system adopts a new element from outside (e.g. a new technology or new object), it often leads to an aggravated secondary contradiction where some old element (e.g. the rules or division of labour) collides with the new one. Such contradictions generate disturbances and conflicts, but also innovative attempts to change the activity. Contradictions can be seen as the “places” in an activity system from which innovations emerge. They are potential springboards for learning, innovation and development.

### **The benefits of globalisation and new information and communication technology to distance education in Africa**

There is a worldwide acknowledgement that new information and communication technologies are bringing about dramatic changes in teaching processes throughout the world (Beebe 2004). Technology as a mediator in the learning process can play at least three distinct roles:

- better deployment of education resources to achieve national goals by making it easier to share educational material and teaching expertise;
- improving access to education through, among other things distance learning and various forms of cross-border education; and

- removing the mystique around, if not the outright fear of, modern technology, a prerequisite for preparing a workforce that will be relevant for both current and future work (Bates 2010; Beebe 2004; Yung 2003).

However, it is worth noting that introduction of educational technologies does not necessarily transform learning, and may simply replicate pre-existing learning practices in a new medium. It is the instructional method adopted that determines if there is transformation in learning, but not the technology *per se* (McConnell, 2006). In this regard, Bates (2005) argues that instructional approaches that encourage active learning can lead to transformation in learning. Thus, true international distance education courses should involve all participants in re-examination of their educational philosophies, their views of the subject being taught and their cultural perspectives of the content of the course (Yung, 2003). Cultural-Historical Activity Theory captures this point clearly by indicating that learning is a social and cultural process growing out of joint activity not simply a biological process (Engeström 1987; 2001).

However, Africa will have to find creative solutions in order to ‘leapfrog’ previous eras of technology in order to be a player in the global society perpetuated by new information and communication technology. These solutions must be utilised effectively in the provision of distance education if Africa is serious about tackling the educational access problem. The limitations of basic infrastructure, such as the absence of electricity, telephones, a reliable postal system and even postal addresses, may often render the use of these kinds of technologies impossible in most of the African continent (Bjørke 2004; Diallo 2008; Wolff 2002; OECD 2009). Additionally, for African and other developing countries to share and collaborate in ‘internationalisation’ forms of education, they need to develop expertise so that they do not only become consumers of another country’s products, however irrelevant they may be, but can act as partners in an enterprise (by being active producers of content/knowledge), as well as gaining access to new resources (Williams 2000). Some examples of globalised distance education programmes made possible by the new information and communication technologies include the following:

- The British Open University offers a masters programme in online and distance education (The Open University 2010). In this course, students download teaching materials from the web, contact their tutors through email, are encouraged to take part in computer conferences as part of the course and constraints on enrolment are no longer a matter of geography but of access to the Internet and the ability to pay the enrolment fee and costs of communication. There are beginning to be examples of this in the South,

though more often within a framework of North-South co-operation than of indigenous Southern development or, indeed, South-South co-operation;

- The Monterrey Institute of Technology, a private university in Mexico has worked with the University of British Columbia to develop five web-based courses at Masters level in educational technology (The University of British Columbia 2010). The programme has enabled Monterrey to extend its teaching into an area that would not otherwise have been possible. Significantly, however, all the teaching materials were developed at the University of British Columbia, in consultation with colleagues from the Monterrey Institute. Therefore, new technologies have made possible a new framework for inter-university co-operation but this still follows the same pattern of the North-South export trade (Wolff 2002);
- In 2004, the International Consortium for Graduate Studies in Women<sup>1</sup> designed web-based modules that could be used for team teaching across national boundaries. One of such modules was the Women's Health and Well-Being, designed by academics from University of Maryland in the United States, the University of the Western Cape in South Africa, the University of the West Indies in Jamaica, Bar-Ilan University in Israel and Makerere University in Uganda (Yusuf-Khalil et al. 2007). All the five institutions collaborated in designing and teaching the 3 weeks pilot module in the spring of 2005 because they believed that cultural, geographical, racial and social contexts are deeply implicated in how women's health and well-being are understood, defined and constructed (Yusuf-Khalil et al. 2007). Based on the results of the pilot, a semester module was designed and offered from February to May 2007 drawing students from five<sup>2</sup> of the collaborating institutions. The aim of the module was for students to explore the concept of well-being and its associated sets of values in relation to women's physical, social and mental health in order to gain a gendered perspective on health issues and how they intersect with power relations in different cultural contexts using collaborative we-based platforms (Staking 2008);
- The collaboration between the Graduate Programme in Culture, Communication and Media Studies, University of Kwazulu-Natal,

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1 An egalitarian and collaborative body to support joint projects, facilitate the transnational exchange of ideas and knowledge and contribute to the evolution of women's and gender studies, especially at the graduate level (Staking 2008). This consortium was initiated by the Curriculum Transformation Project at the University of Maryland.

2 University of Maryland, Bar-Ilan University, University of Western Cape and Makerere University.



and University of Washington Bothell (UWB), USA, Department of Interdisciplinary Arts and Sciences Programme, in offering an integrated online course on Media and Society from a Comparative Perspectives. The course is offered to American and South African Honours/Masters students. In 2004, for example, the course enrolled 15 students from both University of KwaZulu -Natal and University of Washington Bothell (UWB). All the course offerings were put up on the web and the course was mediated through online discussion forums (Tomaselli, telephone interview 2 April 2004; Witmar 2006);

- The University of KwaZulu-Natal (UKZN), School of Information Systems and Technology initiated cross-border courses in 2007 in collaboration with University of Massachusetts (USA). Currently there are two fourth year courses, that is, Computer Mediated Communication and Special Topics in Information Systems being offered to students from UKZN, University of Massachusetts (USA) and Daystar University (Kenya). For instance, the Computer Mediated Communication module was offered in the first half of 2010 and had 45 students from UKZN and Daystar University, while the Special Topics in Information Systems will be offered in second half of 2010 with 30 students from UKZN and 20 students from University of Massachusetts. The collaboration is based on 'Ubuntu' (sharing by equals for the greater good). This means that a partner could be simply a consumer on one end or a contributor on the other end of the cycle. The courses are offered by use of a social learning network environment (nexted.ning.com), e-mail and skype (Blewett and Quilling 2010); and
- The World Bank in 1997 established an African Virtual University (AVU) initially to deliver education content from the west to the African continent<sup>3</sup> (Diallo 2007). The Bank argued that a virtual university, using satellite communication and computer networks to share teaching, could help the beleaguered universities of Africa improve the quality of their teaching in Science, Engineering and Business and expand enrolments in these areas. African Virtual University, now an inter-governmental organization fully independent of the World Bank has its headquarters in Nairobi, Kenya and has asynchronous on-line learning, face-to-face learning systems, print-based instructions; computer-based instructions; integrated learning systems, distributed educational technologies, and M-learning as the technology of choice for virtual distance learning (Diallo 2007; Diallo 2008). Currently,

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3 The AVU has stopped delivering programs from the West, it uses content from the African continent (Diallo, 2010)

AVU is established in more than 27 countries with 53 partner institutions. One of its focus is to deliver open, distance and e-Learning programmes (degree and diploma programs and short professional courses in computer science, languages and journalism) to the partner institutions (AVU 2010).

The AVU has been successful amongst other things in brokering, purchasing and distributing of bandwidth in bulk for cost effectiveness; coordinating the development of a portal for Teacher Education in Sub-Saharan Africa (TESSA); and is offering Computer Science Degree programs from the Royal Melbourne Institute of Technology in Melbourne (Australia) and from Universite Laval in Quebec (Canada), as well as Business Studies Program from Curtin University in Perth (Australia). The AVU also offers eight to ten week certificate short courses from universities such as New Jersey Institute of Technology (NJIT) and Indiana University of Technology.

Citizens from African and other developing countries are benefiting or could benefit from these courses. However, there are several advantages and disadvantages afforded by such globalised distance education programmes.

### **Advantages and disadvantages of globalised distance education programmes**

The emergence of these advantages and disadvantages can be explained by the principle of multi-voicedness of activity systems, which holds that an activity system is always a community of multiple points of view, traditions and interests (Engeström 1993; 1995, 1999). This means that some of the stakeholders in globalised distance education programmes will see the advantages of these courses whereas others will dwell on the disadvantages of these courses. For instance:

- many developing countries (including African countries) with limited educational resources can have wider access to the world's educational and training resources to supplement and complement their efforts to provide education to large numbers. The wider access may also result in heightening the competitive environment (ICDE 2009; Rovai 2009; Rumble 2000). For example, some of the world's best management and computer programmes developed in certain developed countries are available to many people in other countries, including the developing ones. It is hoped that this will ignite the spirit of competition among the local institutions. The breaking up of borders by technology may threaten the survival of mediocre institutions/programmes. The exposure to the best may motivate

others to improve their own performance. The free market may reject the non-performers. The globalised distance education programmes of institutions with a spirit of performance may bring about competitiveness in the working of local distance education institutions or collaborations in the production of learning resources. This process may result in better institutional performance (Prasad 1997);

- The instant connectivity of resource persons and the easy accessibility of resource materials in distance education made possible by the new information and communication technologies will help in learning from others' expertise and experience. The different methods adopted by distance education institutions in the development, production and delivery of materials is easily available to others through database systems. The information technology has made the distance education processes and the products more open enabling others to use and build on the existing knowledge and practices. Globalisation in this sense further facilitates the process of learning from others' experiences;
- Partnerships for enrichment are made possible again through new information and communication technologies, and can contribute to providing services which are beyond the capacity of any institution. A partnership between the Commonwealth of Learning (COL), Canada and Indira Gandhi National Open University, India, is offering a Masters Programme in Distance Education (MADE) under the Rajiv Gandhi Fellowship Scheme. This is one such example of international partnership activity facilitated by the process of globalisation (Prasad 1997). Through this partnership, the partners have learned that course contents should be pitched to the learners' educational levels and adapted to the learner's environment (Sharma & Chaudhary 2003). Although the basic content of shared teaching and learning materials stays the same, the examples, arguments or explanations used must be adapted to reflect the culture of the partner institutions (Sharma & Chaudhary 2003); and
- The European Union activities in the promotion of distance education are also influenced by wider processes of globalisation (Field, 1995). For example, the European Association of Distance Teaching Universities (EADTU)<sup>4</sup>, formed in 1987, has promoted effective collaboration and cooperation in faculty exchange, curriculum design, and development and

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<sup>4</sup> EADTU members are educational institutions in the European Union (EU) (Sharma & Chaudhary 2003).

research (Sharma & Chaudhary 2003). Thus, the educational needs of small developing countries can be met effectively by the partnership arrangements particularly in the development of learning materials which is a very capital intensive activity in distance education.

However, in situations of uneven development, the new information and communication technologies (and especially the information superhighways) may be used more for 'invasion' than for access. More access may result in the danger of certain sets of countries dominating the educational scene of countries with fewer resources (ICDE 2009; Darkwa & Mazibuko 2000). Evans (1995) rightly observes that "globalisation presents nations with a dilemma: they access the world, but the world invades them" (see also Ali 2007; Bjørke 2004; Ziguras 2001). The access is also driven by market demands, which need not necessarily reflect the national needs of countries at the receiving end. Added to this, the access to global programmes is mostly restricted to more affluent sections of society in view of the costs involved (Ali 2007; Motlik 2008; Rumble 2000). This may further accentuate the educational inequalities in developing countries. The partnership arrangements may result in assigning a secondary role to institutions from Africa and other developing countries (Evans 1995) thus, losing their initiative and self-identity. These fears persuade many people to consider globalisation of education as another form of neo-colonialism. However, I am of the opinion that this needs not be the case, as internationalization of the curricula should be multifaceted and should recognize values and nurture respect for differences among the cultures and communities of the world. It should also promote interdependence among educational institutions of the world, with institutions acting as both consumers and active producers of content.

Developing a relevant curriculum for the international context is a difficult task. Even more difficult is getting the educational materials developed in a particular cultural context adjusted/adapted to suit a different cultural context. Worth noting is the fact that distance learning, by its very nature involves more than just the transmission of information, but also the transmission of cultural/social paradigms between and among participants. The biggest barrier, though, is content: in the form of language, relevance of content/examples and cultural issues. At present the materials developed in one context are mostly used in a wider context (Ziguras 2001). Therefore, any globalised learning materials/curriculum and the delivery systems should take into account the diversity of the world cultural context and be sensitive to cross-cultural experiences (Cummings and Sayers 1996; Rumble 2000). Thus, global course materials

can be developed that can then be used locally, adapted to local circumstances (Cunningham et al. 1998).

Important to document is the fact that globalised distance education programmes are received with suspicion in most of the African and other developing countries (Ali 2007). Cultural-Historical Activity Theory can be used to explain this suspicion by use of the principle of contradictions. It holds that contradictions are historically accumulating structural tensions within and between activity systems, and when an activity system adopts a new element from outside (e.g. a new technology), it often leads to an aggravated secondary contradiction where some old element (e.g. the rules or division of labour) collides with the new one. Such contradictions generate disturbances and conflicts (Engeström 1993; 1995, 1999). Some of the perceived dangers/contradictions of these globalised distance education programmes are discussed below.

### **Perceived dangers of globalised distance education programmes**

Many countries in Africa and other developing countries perceive dangers in the globalisation of education. Guy (1995) writes of his concern about the intrusive effects of Western curricula and pedagogies which have been imported into Papua New Guinea with little accommodation of indigenous culture and learning. All too often, existing cultural values have been replaced by those of the dominant ideology, and many indigenous languages are under threat from the spread of English, which is seen to provide social mobility and improvement in employment prospects in the formal sector. English as the language of instruction and the education system generally has failed to deliver the desired goods to most Papua New Guineans (Ali 2007; Bjørke 2004; Swatridge 1985). Instead, it is the death of indigenous languages which is delivered. In Asia, there appears to be a level of concern that exporting students and importing courses may present a real threat of students' loss of identity, culture and family values (Asian University of Science and Technology, Prospectus, 1997 quoted in Cunningham et al. 1998; Ziguras, 2001).

It is also feared that the globalisation of education will both speed up the advance and reduce the tolerance of difference (Ali 2007), as Evans (1995, 266) and points out:

Many new forms of open distance education which are mediated via the Internet, or through satellite broadcasting, cannot be achieved with any substantial accommodation to local conditions... there is little likelihood of a myriad of small, local, traditional cultures being nurtured within globalization.

Therefore, some developing countries may be afraid of adopting foreign educational programmes because of the above reasoning.

However, I am of the same point of view as Edwards (1994, 11), who maintains that with globalisation there comes “a pressure for local autonomy and identity”, and “the affirmation of local, regional, ethnic identities”, and that “the integration of the globe reconfigures rather than supplants diversity”. Both McQuail (1994) and Ang (1991) discuss the ability of communities to redefine the material that is received. Ang terms this process ‘indigenisation’ (1991, 6). The educational aim must be to assist learners to be capable of exercising choice and obtaining from the media knowledge that which they deem culturally appropriate and useful. In other words, learners need to critically engage with ideas of others. Education is about opening up new horizons; about seeing problems in new ways; seeing new possibilities and new opportunities. Education is also about getting the skills and knowledge to seize those opportunities (Guy 1995). So it is about enabling learners to change the way they interact with the world. Education is also about recognising and respecting the different ways of seeing the world:

The task for researchers and educators in a post-colonial world is to develop better understandings of the relationships between difference, identity and power and to develop effective pedagogies which acclaim difference as the basis of genuine democratic forms of social and educational organisation (Guy 1995, 81).

Additionally, a number of researchers point out how distance education and the use of computer-mediated communication for educational programmes may amplify existing divisions, by embedding the authority of the teacher, or privileging access and the voices of students from dominant groups (Zondiros 2008), or emphasising the power of a particular language, generally English (Ali 2007; Evans 1995; Perraton 2000). Therefore, any design of a distance learning curriculum needs to be sensitive to cross-national cultural experiences so that distance education in Africa would not be seen as an attempt by foreign institutions to extend their influence on the continent (Cummings and Sayers 1996). Also, the context of reception needs to become a context of production that is responsive to local requirements and accountable to citizens (Lelliott, Pendlebury & Enslin 2000). However, a warning is issued that failure to fully use new information and communication technologies carries the risk of further increasing the gap between these (developing) countries and developed ones (Perraton 2000).

However, the greatest problems in exploiting new technologies in African and other developing countries is lack of access and connectivity to ICTs

and the shortage of trained personnel often due to the passive role played by governments (Yusuf-Khalil et al. 2007; Staking 2008; Williams 2000). The reality is that information-technology based distance education depends on a well-developed national information technology infrastructure. Few of these countries are able to train all the technicians, programmers and system analysts they require to operate computer-based systems, even supposing that the hardware has been provided (Hawkrige 1992, 92) and few African scholars are familiar with teaching in an online environment (Darkwa & Mazibuko 2000). Additionally, ICTs cannot serve education unless there is already a basic level of education, a condition that in most of Africa has not been met. It is my view that ICTs can only contribute to education and democratization if social capacity is developed to a sufficient level on the continent. Closely linked to this challenge is the absence of clearly defined national distance education policies in most African countries. With the exception of South Africa, few African countries have a clearly defined national information or communication policy to guide the development of distance education in their respective countries (Darkwa & Mazibuko 2000).

It must also be noted that the new information and communication technologies have the potential of widening the gap between the educated and the under-educated. Distance education has been championed as a means of providing equitable access for continuing education regardless of socio-economic status. If distance education becomes increasingly technologically based, then it will become a privilege of the well-educated who are able to afford the latest technology to access educational programmes (Ali 2007; Motlik 2008; Rumble 2000). The above contradictions can be seen as “places” in an activity system from which innovations emerge. They are potential springboards for learning, innovation and development (Engeström 1993; 1995, 1999). In this case, one solution suggested in this paper for dealing with the latter dilemma/contradiction may be learning centres or telecentres where the technology is equally available to all segments of society (Berman 2007; ICDE 2009). Telecentres are strategically located facilities providing public access to ICT-based services and applications. They are typically equipped with some combination of telecommunication services such as telephony, fax, e-mail and Internet (via dial-up or ISDN, high-speed telecommunications network); office equipment such as computers, CD-ROM, printers and photocopiers; multimedia hardware and software, including radio, television and video; and meeting spaces for local businesses or community use, training and so on (Oestmann & Dymond 2001, 3). All the equipment in the centres are maintained and

updated, services are affordable and there are staff members available in the centre to assist new users.

The multiplicity of provision offered in learning centres can address the negative bias that new information and communication technologies may present to the under-educated (Garrison 1990). Telecentres functions are to:

- expand access to ICT-based services;
- extend the reach of public services such as education, health and social services;
- provide information of general interest to the local community, including government information, and of special interest to specific groups such as farmers, local business and non-governmental organisations (NGOs); and
- provide access to infrastructure, technology support and advice for the development of business (Oestmann & Dymond, 2001, 3–4).

Other solutions to inadequate access to ICTs in developing countries put forward in this paper are:

1. international collaborative arrangements which should be based on national priorities as identified by appropriate authorities at the national level (Darkwa & Mazibuko 2000). In defining the rules of competition, the nation concerned should use its privilege of regulation to protect its national interest, requiring more emphasis on accessibility and transfer of know-how of distance education than on delivery of finished materials and programmes (Jenkins 1996). This would strengthen the self-sustainability of institutions in developing countries. The local institutions, as partners in the international collaboration, can play an effective and critical role only when they are capable of adding value to the process. This value addition should take care of localisation of materials and services, adaptation of materials, sensitisation of the processes to the local cultures, etc. This type of contribution will neutralise the possible dominance of resource-rich outside agencies (Jenkins 1996); and state intervention would be necessary. The nation state may have to actively intervene to minimise the distortions of globalisation processes. According to this line of argument, the state should subsidise and support the learners from the weaker sections of society to use the opportunities of global distance education programmes. The state can also play an important role in building the necessary information technology infrastructure to enable the distance education institutions in



developing countries to participate as equal partners in global distance education programmes (Prasad 1997).

2. Another strategy is to develop low-cost alternatives to or variations of new information and communication technologies that are appropriate to the current levels of development of a particular country. One way of doing this is to by-pass the energy and terrestrial-based telecommunications networks that have not yet reached into villages. Miller (1996) suggests for instance the development of grid-free village level energy sources<sup>5</sup> that can provide local power sources, not just for cooking and heating, but also for education and training purposes. With local sources of energy, students can use computers and CD-ROM technology for their learning.
3. Further, the privileged elite in developing countries should not be ignored, but be included in the process of provision of ICTs for distance education. Most of the prestigious universities as well as most leading businesses have relatively good Internet and international telecommunication links, even in the poorest countries. Through these organisations, a high-tech technology hub can be created in each major centre, providing two-way satellite communications, high-speed international telecommunications links, multimedia workstations, and labs, and high-speed internet services. These can become centres of excellence for the development of new education and training services for the admittedly elite sections of the country. These centres can link to other regional centres, and can be used to provide training for the industrial and business sectors within their own communities. The importance of such hi-tech centres of excellence is that they could provide the elite within each country with the knowledge and skills needed to ensure their country does not fall behind and to emphasise to key decision-makers the importance of investment in such technologies for the development of their own country (Darkwa & Mazibuko 2000). In addition, African educational policy makers should explore, encourage, and promote the development and use of new communication and information technologies at all levels of the education spectrum (Darkwa & Mazibuko 2000).

Furthermore I echo Murdock's (2000, 54) argument that globalisation and lack of access to new information and communication technologies in most of the developing countries is a major reason why public service broadcasting [particularly television-based distance education] is not only relevant in a

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5 They are renewable energy sources mainly from biomass, wind, small scale hydro and solar.

global economy and digital age, but arguably more relevant than ever, retaining a commitment to meet the needs of disadvantaged sectors of society. Without public service broadcasting commitment to universality, developing countries will be left with deep and enduring inequalities of access to information, knowledge, education and representation. In the case of South Africa for example, Teer-Tomaselli and Tomaselli (1996, 220), argue that public service broadcasting remains an important institutional arrangement in light of the need to redress the disparities caused by capital and apartheid in the first place, and legitimated during the apartheid via broadcasting in the second place.

According to Miller (1996), the traditional ‘mass media’, ‘second generation’ form of distance education, using mass media such as public service broadcasting, (television and radio), has been very successful in countries where it has been professionally applied, such as at the Sukhothai Thammithirat Open University of Thailand, the Korean National Open University, the Alama Iqbal Open University in Pakistan, and the Indira Gandhi National Open University in India.

Given the history of public service broadcasting in comparison with the history of new information and communication technologies in the African or developing countries contexts, I strongly believe that for those African countries wishing to educate very large numbers of relatively poor people, mass media are still the more appropriate technologies than the new information and communication technologies (Berman 2008; Bates 2005). This is because access to the new information and communication technologies in most of the African countries is generally at a very early stage of development compared to other regions of the world (Miniwatts Marketing Group 2006). However, in the broadcasting arena, radio, followed by television, remains the most accessible media on the Africa continent (Ruth, Shi and Mason 2001; Ko-Chih Tung 2000; OECD 2009). In this regard, Cultural-Historical Activity Theory indicates that the history of a technology in a society is important as activity systems take shape and get transformed over lengthy periods of time and their problems and potentials can only be understood against their own history in the community (Engeström 1993; 1995, 1999).

Additionally, Zhang and Hung (2007) indicated that the selection of the teaching and learning media should be executed in line with the learning context and that the major factors to be taken into account in the design of course delivery methods include the availability of adequately developed technology and their suitability for both teachers and learners. Unfortunately, the Internet and web-based media in most of the developing countries has not conspicuously

fulfilled these criteria. Therefore, given the history and accessibility of public broadcasting (and especially television-based distance education), it is much easier to achieve greater penetration in Africa, whereas internet lags very far behind due to a poor support infrastructures amongst other factors.

## Conclusion

Given the discussion above, this paper suggests that public service broadcasting [especially television broadcast-based distance education] remains important especially in the African countries in the light of:

- the need to increase access to education,
- redress the disparities caused by globalisation and by the lack of access to information and communication technologies.

This is not to say that these new information and communication technologies do not have a place in Africa. They certainly do, but in their application, greater emphasis should be paid on the development of appropriate technology and integration of imported technology in local ways of doing things (Akpan 2000). What the whole technology trend shows is that it does not matter what technologies you develop, unless they actually connect through to the consumer in the home, they fail (Cunningham et al. 1998). Additionally, the goal of technologies has to be shared and developed in collaboration with the community. The needs of the people and the best means to satisfy them should determine how ICTs are employed (Arunachalam 2002).

Thus, better use of existing public broadcasting capacity (in this case, television broadcast-based distance education) enhanced by the use of adapted open educational resources/contents (OERs)<sup>6</sup>, podcasting, iPods and mobile technology to promote student interaction and greater engagement with the learning materials is more relevant technology to educate very large numbers of relatively poor people in Africa and other developing countries.

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<sup>6</sup> This adapted content should be shared with others through the OER commons. This is to ensure that developing countries act as active producers and consumers of content in the globalised economy.

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