

# Non- use of IT Learning Technologies in Africa: Is it lack of the technology or attitude towards technology

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## Abstract

One of the reason that has been forwarded as affecting development in African countries is lack of access to learning technologies. This has also been observed to have multiple effects on the African continent. It is a fact that the majority of Africans are not using learning technologies. This is a source of worry in view of the fact that these technologies can be a major facilitator to the resolution of major socio-economic problems of the region such as energy, accounting, and environment, among others which are currently rampant in the continent. ANSTI editorial (2005) has noted that the weakness in the technological capability of African countries is one of the factors affecting their ability to harness their abundant natural resources for socio-economic development. Thus in a way all the effort/ strive for capacity building in graduate training and research currently going on may not produce fruitful results if there is no technological capability

The factors hampering use of learning technologies in Africa may have been discussed on different forums but this paper sets up to explore the contribution of unavailability of technology against the contribution of attitudes. The paper explores the reasons behind non use of learning technologies in the context of these factors. The question is how much non use is attributable to lack of the technology and how much to attitudes towards the use of learning technology.

The paper summarizes the known learning technologies available worldwide, the technologies available to most African institutes, how accessible the technologies are and evaluates how these technologies are being used. The appropriateness of the technology to the African context, the availability of human resources required to operate and maintain the technology are also discussed. African tertiary education institutes (in particular Science and Technology training and research institutions in Africa) are used for the analysis. Challenges and opportunities are evaluated in terms of problems associated with harnessing the technology and areas where learning technological advances can be taken advantage of. These include areas such as World Bank supported African Virtual University and the various regional and European scientific networks. These are used in evaluating accessibility and availability and use of learning technologies.

Finally the paper tries to answer the question of whether there is a lack of technology in Africa or whether the technology is un accessible or whether there is a problem of attitudes to technologies that affects our response to learning technology and manifests itself as lack of access to technology. The conclusion drawn from the

observation is that there is a general lack of the technology but attitude plays a pivotal role in non use of technology

Keywords: IT, e-learning technologies, access, availability, attitudes

### **Introduction**

Learning technologies will be discussed in the concept of e learning as this is the most popular learning technology nowadays. In order to explore whether it is lack of technology that hampers non use of IT in Africa or the attitudes towards these learning technologies, this paper will commence with briefly discussing what e-learning is and what technology it requires. A brief discussion on the accessibility of technology and its use in Africa will be given together with the known factors that affect use of the technology. A conclusion on whether attitudes or non availability is weighing more on non use of technology will then be derived. A very brief way forward is then offered. Fincham et al. (2002) describe universities as being knowledge centres in capacity building for the future. Thus tertiary institutions especially those involved with scientific and technological research will be mostly used to explore the use of ITC in this paper

### **E-learning technology**

E-learning is learning facilitated and supported through the use of information and communications technology (<http://internal.bath.ac.uk/web/cms-wp/glossary.html>). In short this is the delivery of a learning, training or education program by electronic means. ([www.intelera.com/glossary.htm](http://www.intelera.com/glossary.htm)). It involves the use of a computer or electronic device to provide training, educational or learning material. It is not simply associated with distance or remote learning, but forms part of a conscious choice of the best and most appropriate ways of promoting effective learning.

Thus with a computer or electronic device and the appropriate material one can successfully e-learn. This can be either offline (accessing of content through dial up or on CDs diskettes and memory sticks) or online (accessing learning material through the intranet and internet). Internet access with at least a 28.8K modem or faster (minimum 56k modem to download course components such as audio files) is a minimum requirement to accessing online material learning material. Thus the minimum requirement of e learning is a computer or electronic device and some learning material and people can e learn.

For access to online material one would require a computer with either Windows or Mac software). These software packages usually come with web browsers (software applications that locate and display Web pages) such as Netscape Navigator and Microsoft Internet Explorer. Both are graphical browsers, meaning they display graphics as well as text. In addition, these browsers can present multimedia information, including sound and video, though they require plug-ins for some formats. The authoring tool for e learning material usually include, HTML, AuthorWare, Flash Director, ToolBook and XM. Though the latter tools may not be common HTML is found together with most packages that we use on everyday business such as microsoft package.

The common options of e-learning include content on media, content on intranet, content on the web and content on e-learning environment.

### **Human resources required to operate and maintain the technology**

Basic computer knowledge is adequate for creating and accessing e learning material. If one can use a computer which is now being learnt in secondary and at times primary schools then one can use e-learning technology. Software that can be used for more advanced e-learning such as chats, discussions and bulletins can be bought but a number of free softwares are also available. Most of these programs have a virtual learning environment that is easy to navigate to the extent that there are no specialised skills needed to use them. Most universities and science and technologies are now offering IT courses as such in nearly every institute of learning there are courses that equip people to operate and maintain the IT technology available.

According to UNESCO, 2002, approximately 30,000 Africans holding PhDs in Science and Technology are living outside of the continent. For these people to go to PhD level it means they have undergone first and masters degrees which require the use of IT technology in one way or another. If 30 000 are outside the continent then it means there are even more human resources within the African continent. Thus in a way one can conclude that there is enough human resources to operate and maintain learning technologies in Africa which logically leads to a conclusion that lack of human resources is not a major hinderance to use of learning technologies in Africa

### **Discussion**

The discussion on e learning and required technology shows that the minimum technology hardware and **networks needed to create, offer, and take e-learning are** available in most institutes of higher learning. The learning technologies available worldwide are in most cases also available to most African institutes. However observation (UNESCO-ANSTI 2004), show that very little e learning is taking place offline or online in most science and technology institutes in Africa. This is not because the required technology is not available but mainly due to lack of interest to use the technology for learning. Though internet access is a major contributor to e learning, e learning can happen without internet access in the form of offline learning using CDs. However a study by ANSTI 2004 showed that there was a scarce of information being distributed for e learning as CDs despite the fact that CD are a flexible and cheaper way of distributing materials compared to books and printed materials. This then cannot be blamed on lack of the technology but on attitude or motivation to use the technology for basic e-learning.

The technology (computers and softwares) needed to access online material are available in most offices because they come as part and parcel of the software packages that are used in offices ( e.g. windows and mac). Software like Macromedia Flash Player, are available for free. However, these packages are rarely used for e learning. In most cases they are used for reading mails, game playing and entertainment which in most cases include pornography. Thus if the technologies are being used for other purposes this is an indicator that the technologies are accessible but not just being fully utilised for e learning.

The African Tertiary Institutions Connectivity Survey done by ANSTI in 2005 and reported in 2006 (ANSTI 2006) is further evidence that the necessary technology needed for e learning is available. In their survey they showed an overview of the state of connectivity in African universities based on the Africa Tertiary Institutions Connectivity Survey (ATICS) carried out by the African Virtual University in 2004. This study established that most African universities have access to some bandwidth which allowed them to connect to internet. This same study though it showed a challenge in the bandwidth available to the universities (the same amount of bandwidth as the average household in North America), it serves to indicate that the technology is available. It is however worrisome that these bandwidth that are obtained at a much higher cost (on average \$5.46 per kilobyte) than else is not being fully utilised.

This brief discussion shows that the minimum required for simple e learning is available in most learning institute. Thus its really not the availaibility issue that really hampers use and this paper is suggesting that it may be attitudes towards using the technology. An interesting fact to substantiate this claim can be obtained from the facts gathered by a survey conducted by the Internet Lab CINDOC-CSIS whose findings are published on the [www.webometrics.info/top3000.asp.htm](http://www.webometrics.info/top3000.asp.htm), website. The summary of the results show that in the top 1,000 world universities use of websites, USA and Canada have 497(49.7%), Europe 356 (35.6%), Asia 82 (8.2%), Oceania (Australia and South Pacific) 38 (3.8%) and Africa six (0.6%).The data, was collected from the main search engines of the universities using ad hoc scripts or APTs provided by commercial engines. The rankings were based on the size of the web, the visibility of the web and content in the rich files. A general picture obtained from this survey is that African universities and institutions generally are not using the technology effectively in terms of size visibility and content they put on the web. It may have to be due to the general attitude to the cyber culture in Africa

South Africa leads the African pack with 15 of the 20 leading universities in Africa. However none of the African universities is among the best 300 in the world. The leading university in Africa is the University of Cape Town in South Africa, which holds the 324th position in the world rankings. This is a ranking based can be an indicator of how much effort or how seriously is the web taken by different institute of higher education. These websites can be a way of gauging how technologies are being used and in a way reflect and provide a more complete picture of how the resources are being used given the same resources. The varying outputs are in a way affected on the attitude especially how serious the web is taken and can be used to explain non use of e learning technology

The ANSTI report of the conference on African research and education network infrastructure summaries some of the strategies to address education network infrastructure as address human resource issues, infrastructure issues and bandwidth issue but these may not yield the desired output until the attitude towards using the available technology for learning is changed

#### Conclusion

The major factors that affect use of learning technology include professional competence, attitudes ( teacher and learner), lack of technology, lack of technical expertise and lack of information. As a way of concluding this paper the author suggest that attitude is playing a big role in the none use of it learning technology. It

contributes to non use more than the unavailability of the technology. Lack of access to learning technologies is definitely prevalent in most African country but the problem of non use of learning technology is compounded by the attitude. Challenges and opportunities exist for harnessing the technology and improve the use of e learning technologies. Technological advances can be taken advantage of through World Bank supported African Virtual University and the various regional and European scientific networks.

As a way forward this paper is recommending that attitudes toward the use of learning technology should be acknowledged as a major contributor of non- use of learning technology and the problem of attitude should be addressed together with the other factors in order to

Address attitudes together with the other factors

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