

# Advancing E-learning in African Native Communities: The Language Factor

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**ABSTRACT:** *E-learning as a subject of educational development is one that has brought remarkable advancements to the global learning process. It proves to breakdown global knowledge margins and takes the concept of learning beyond the confines of time and space. Still, the language barrier hinders effective communication and knowledge dissemination especially in native (rural) communities of Africa. English is the primary language used on e-learning platforms. Yet if knowledge cannot be seamlessly passed to or from non-English speaking learning communities, then a broader look needs to be given to the e-learning process if truly it must be globally beneficial. This paper considers the greater level of effectiveness which will be brought into the e-learning process when native non-English speaking communities take part in the e-learning experience in their native languages.*

**Keywords:** E-learning, Global Knowledge, Language Barrier, Native Communities, Native Language

**Received:** 4 November 2012, Revised 13 December 2012, Accepted 18 December 2012

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## 1. Introduction

Information and Communications Technology (ICT) has become a major driver of the 21<sup>st</sup> century. It has changed everything; the concepts of work, play and even education. Hitherto, time and space were necessary conditions for effective learning but have today been overcome and have no regard. ICT has indeed made the world a community- one global community.

E-learning a product of ICT can be regarded as the 21<sup>st</sup> century mode of learning. It has proven to break down geographical boundaries and has brought in the possibility of global knowledge being in everyone's possession. However, the multi-lingual nature of today's global community poses a threat to the seamless diffusion of knowledge across the borders of dissimilar native communities. English as a global language is the primary language used on e-learning platforms (e.g. the web). However, if knowledge communicated in English cannot be seamlessly passed to and from non- English speaking learning communities like the numerous found in Africa, then more attention must of necessity be given to the subject of e-learning if it must be of global benefits. The rewards of ICT as a global phenomenon must be all inclusive.

In recent times, strides have been and are still being made to ensure communities in Africa gain access to ICT. Successes have been recorded in introducing these communities to the world of computers and the internet. Although these tools are undeniably enabling factors for e-learning, yet availability does not equal effectiveness. If differences in language hinder effective transfer of knowledge and thus the e-learning process, then providing access to e-learning tools in native communities is just half way to success. There is the need to tailor e-learning content to the specific lingual needs of such native learning environments.

## 2. E-Learning and the Language Factor

According to [1], instruction through a language that learners do not speak has been called “*submersion*” because it is analogous to holding learners under water without teaching them how to swim. Simply put, learning is not possible in a language you do not understand. Electronic-learning (E-learning), being a form of a virtual teacher, pseudo-teacher or complementary teacher is characterized with students’ interactions. The study of language reveals its importance, whether as first, second or tenth and these are crucial in the conduct of e-learning. Language has significant roles in the way in which learning occurs and consequently, the success or failure of e-learning [2]. Language is clearly a key to communication and aids in understanding the educational content of both traditional and contemporary forms of learning. As African nations seek to harness the potentials of ICT in education towards rewarding developments, they however seem to be blind to the impending language factor. As highlighted in [3], various deficits in language and development planning and implementation in Africa “*conspire*” to impede advances and serious progress of development in general and of education in particular. Clearly, the focus is on the “*language factor*”. Language is a significant connection between education (e-learning) and development. As shown below, Wolff visualizes the education-language-development connection in [3].

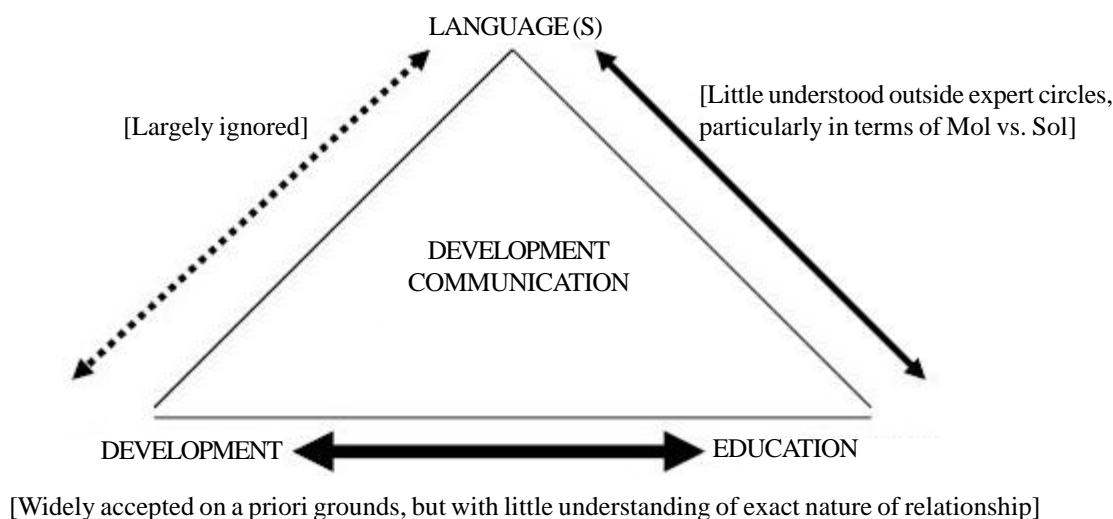


Figure 1. Model of Development Communication with Regard to Language (s) and Education by Ekkehard Wolff (*Adopted from [3]*)

According to this model the connection between (a) development and language use is largely ignored, the connection between (b) language and education is little understood outside expert circles and the connection between (c) development and education is widely accepted on a priori grounds, but with little understanding of the exact nature of the relationship. In other words, language is the key connection between development and education. Therefore, if ICT has come in to bring in developments even in education, then language stands crucial in realizing its benefits.

## 3. Adaptive Learning Systems (ALS)

Generally, e-learning can take the form of either Computer Based Learning (CBL) or Web Based Learning (WBL). But whichever form it takes, the content which the e-learning system seeks to deliver must be adapted to suit the learner. To this end, concerted efforts are being made from experts in the fields of computer science, psychology, and education. Consequently, a lot of attention is being given to Adaptive Learning Systems (ALS). Adaptive Learning Systems are technologies designed to adapt the learning preferences of individual students and customize content based on those preferences [4]. This has been a growing area of research and development, aimed at using technology to scale the barriers to learning and provide a consistent level of quality of learning content to users located in different geographical areas. Adaptive learning is an educational method based on the premise that the learning tools or systems will adapt the presentation of education materials to suit the needs of the learner. To improve current state-of-art systems and to increase effectiveness of online education, the focus is now on adaptive learning systems- systems that can adapt the content to match the learning preference of individual learners. Adaptive learning systems demand a new perspective on learning [4].

### 3.1 Recent Developments

Recent developments in the area of adaptive learning systems include Adaptive Hypermedia (AH) and Intelligent Tutoring Systems (ITS). Adaptive hypermedia has increased its popularity, especially during the last few years, provided that it allows the personalization of the information presented to the users in the most suitable way for each of them. Adaptive hypermedia arises as a new research area starting from the hypermedia field, with the purpose of increasing its functionality so that both the way of presenting information and the information itself can be adapted to each particular user's needs [6]. Primarily used on the web, AH builds a personalized content model based on the user's prior interactions and then uses this model for future interactions with the user. On the other hand, Intelligent Tutoring Systems provide a personalized training or tutoring assistant for each learner. The benefits of individualized instruction are the essence of ITS, which uses artificial intelligence to tailor multimedia learning [7].

### 3.2 The Language Adaptation Task

Despite the progressive efforts being made, recent developments do not seem to factor in the multi-lingual nature of the e-learning global community, hence, exempting non English native communities particularly of Africa, from effective e-learning experiences. Innovative and effective ways to integrate language adaptation abilities into e-learning systems must be put forward. Content adaptation or personalization for native e-learning communities need to be given attention. This will therefore not only require the collaborative efforts of computer scientists, educationists and psychologists as afore mentioned but also of linguists. The task of adapting e-learning content to fit the learner is one motivated by the fact that (recent) modern e-learning schemes lack educational content (language) representation and user personalization [4]. There are many factors that can influence the extent of learning. In a learning environment, each individual student will have different requirements and characteristics. An important role of the educator is to recognize that their pedagogy and educational material must cater for the individual learner's characteristics and requirements (*in this case language requirement*). This is both true for traditional classroom and for e-learning. There is a need to move away from the "one size fits all" (*in this case "one language fits all"*) paradigm to offer learners a personalized learning experience [5].

## 4. Potentials Of Natively Adapted E-Learning

E-learning is too powerful an educational phenomenon to be limited by language. The potentials of e-learning are globally being appreciated. Shared efforts are being made to tap continuously into these potentials and to see that its pervasive effects are felt globally. But what reward does e-learning hold for native (non-English speaking) communities like those found in Africa? With e-learning systems (computers, the web, etc) "*adapted to speak*" native languages, the educational interest of many natives will be heightened, it will aid in the building of a more digitally ready global workforce and there will be better rural-global contributions and collaborations. Even more, the cultural heritage (*of which language is key*) of African native communities will be kept alive and global recognition of their native languages will lead to a boost in cultural prestige of members of such communities.

### 4.1 Heightened Interests

With efforts being made to provide access to e-learning tools, computers and internet access are being taken to African native communities. Yet, in many of these communities only the few English speaking members of the community have the privilege of enjoying these e-learning tools e.g. the computers and the web. Those who do not have the required literacy in English often see "*this amazing box*" as not for them. Their initial fascination and interests are suddenly frozen. It does not adapt the content which it delivers to suit the native learning environments, i.e. to speak their language, the interests of many will be heightened. They will understand what this amazing box seeks to communicate. This will inevitably extend the impact of the e-learning process.

### 4.2 The Globalization Process: Including the Excluded

E-learning has indeed brought a new light into education. With e-learning, education is today considered everyone's right and no community can afford to be left behind. The seamless transfer of knowledge across borders has been a major driving force in today's globalization process. But what happens to African native communities that are being excluded from the global learning community because of the language barrier? For example English, the primary language of the web and which ought to be the unifying global language of communication, rather seems to be a discouraging factor to non-English speaking learning communities. Yes, several languages besides English exist on the web, but many native languages especially of developing countries have no web presence. This ultimately exempts many already interested native learners from the e-learning experience and the rewards of global knowledge sharing. Being able to adapt e-learning systems to communicate knowledge seamlessly,

despite differences in language, will be very rewarding as it will include native communities that have been hitherto excluded from the globalization.

#### **4.3 Native-Global Contributions**

So much potentials lie untapped in African native environments. So far, recognition has been given to the natural resources available in these areas and efforts are being made to harness these resources for global benefits. However, little attention has been given to the available human (mental) resources. The challenge is that in today's world, the lack of English education tends to ostracize one and puts him in the illiterate class. But if e-learning is here to drive the global learning process, this challenge must be squarely addressed. We should not be quick to forget that English is not synonymous to intelligence. The minds of many who reside in these native communities lie virgin and adapting e-learning to suit their learning environment will create open doors to harness them as it creates a platform to share their ideas with other members of the global learning community. For example a professional farmer can through the web communicate expert farming ideas or techniques to researchers in distant locations and of different languages, on how to cultivate certain crops. Adapting e-learning systems to meet language needs of such native learning environments will indeed prove that native ideas can also be very globally rewarding.

#### **4.4 Preserving Cultural Heritage**

Language is an important part of culture. It is a recognized force that connects people of same culture without regard to geographical location. All over the world the beauty of African culture is recognized, but the effects that English as the primary language of communication, is having on its culture seems to be neglected. As the English language permeates all cultures on the wings of education, it is subtly taking the place of first language. Many are gradually being severed from their cultural roots in their quest for education. Education in itself is in no wise a problem, but the "*how of education*" is what is gradually "*de-threading*" the tapestry of African culture. There must be a way to preserve culture even in an ever developing world. With e-learning systems being able to communicate in native languages many who are taking the journey of education will still be in touch with their native languages which will aid in the preservation of culture even in contemporary times. Development indeed does not imply the death of culture.

#### **4.5 Cultural Prestige**

Culture complex is a problem that has taken root especially in cultures of African nations. They see themselves as having no platform or part to play in today's digital world. Simply being able to turn on a computer to see the welcome screen in their native language or much more going on the web and being able to communicate (interact, learn, contribute) with another person of a different culture (language) without feeling the language barrier is enough reason to feel comfortable with and in a sense to be proud of their culture. Global recognition of native languages, on language adaptive e-learning platforms (the computer, the web) will inevitably give any culture a global outlook and will boost the cultural prestige or esteem of members of any native community.

### **5. Enabling Factors**

For the success of e-learning systems as discussed in this paper, a combination of factors if well considered will serve as enabling factors. There must be collaborative work from linguists, educators, psychologists, computer scientists and other related experts towards developing digital dictionaries which will aid in effective language translation. Many African languages merely exist and very little effort has been made in making them relevant even in education. Developing digital dictionaries will be a key step towards making them applicable in the learning process and also in global contexts. Also, a more critical look should be given to language translation techniques and technologies to ensure that they don't contribute to the miscommunication of ideas from one language to another. It is worthy of note that nowhere in the world has technology ever fixed bad philosophy or practice. Technology is only a tool that brings us closer to achieving our already predefined objectives. Technology will fail at providing the positive impact on education if the real idea behind education remains eclipsed. In fact, if we are going in the wrong direction, technology will get us there faster [9]. Therefore, another factor that will favor the impact of e-learning in native communities is the related educational policy relating to the language of use in communication of knowledge. English language can be taught as a second language and should not be strictly held as the primary language of communication in such native learning environments.

## 5. Challenges

### 5.1 Concept/Context Mismatch

Languages are unique to cultures and have their intrinsic ways of expressing ideas. A major challenge experienced in translating from one language to another has been the inability to exactly capture original contexts or ideas being communicated. Some things said or some words used in one language may not mean as much in another. Thus, there is sometimes a depletion of the force or essence of the idea being communicated when translating. This is a challenge facing language translation systems and will be a challenge to face in the development of e-learning systems for native non-English speaking communities.

### 5.2 First Language Illiteracy

Also, standing in the path of progress is the fact that many members of African native communities can *only* speak their language. They cannot read nor write in their first language. They are neither efficient in English nor their first language. This will be another challenge that will be faced in making e-learning effective in native communities.

## 6. Conclusion

It is clear that a significant communication gap exists between members of the global learning community. Closing this gap between members (English and non-English speaking) must be paramount if e-learning must enhance unhindered knowledge transfer across native boroughs. In presenting language as key in bridging this gap, this paper has highlighted why and how integrating native languages into e-learning systems can be used to achieve a greater level of effectiveness in native communities especially of Africa. Although it does not propose a ready solution, it makes clear the needs for more collaboration from various fields and a broader approach towards the development of Adaptive Learning Systems to cater for native learning environments. E-learning systems must be able to adapt to make learning environments conducive for native (non-English speaking) learners. Indeed, language is not everything in education, but without language, everything is nothing in education [3], including its related technologies.

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