# Access to Learning for Development: Mobile Technologies and Distance Learners in the Mountains of Lesotho.

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Abstract:

Goal 8 of the Millennium Development Goals (MDG) identifies the advantages of new technologies, especially Information and Communications Technologies (ICTs). Lesotho together with other countries of the world is committed to procurement and utilisation of ICTs. The government recognises the crucial role that ICTs play in accelerating development in general and in education service provision in particular. At the same time, Lesotho acknowledges how ICTs can be used to support access to quality education necessary for sustainable economic development. This paper explores both tutor and student perspectives on the use of mobile technologies available to distance learners for support in the mountains of Lesotho. The study identifies maximum utilisation of mobile technologies by the tutors in the provision of learner feedback and counselling. Majority of the learners in the mountains of Lesotho prefer mobile phone over other means of communications as it seems reliable and convenient in terms of availability and cost effectiveness. The study highlights a number of infrastructural and geographical problems encountered by learners and tutors that impede effective use of technology to access learning and support. The papers recommends upgrading of infrastructural facilities such as electricity, roads and telecommunication lines necessary for tutors and learners to adequately exploit the use of mobile technologies in the distance learning context, and at the same time alleviate the obstacles to the application of technologies arising from underdevelopment itself.

BACKGROUND TO THE STUDY

The Kingdom of Lesotho is a small mountainous country that is completely landlocked by the Republic of South Africa. Geographically, Lesotho occupies an area of approximately 30, 355 square kilometres. Lesotho lies between southern latitudes 28 and 30 degrees and eastern longitudes 27 and 30 degrees. Its altitude is between 5, 000 and 11, 425 feet above sea level, hence the highest country in Southern Africa. Lesotho is largely occupied by rugged and inaccessible mountains that comprise 75 per cent of its arable land called Maloti Mountains or the Drakensberg Mountains.

Lesotho has Human Development Index (HDI) of 0.494 that makes the country number 149 of the 177 countries of the world that has provided the UNDP with data (UNDP, 2006). Lesotho has an adult literacy rate (percentage of ages 15 and older) of 82.2%. Put together both primary and secondary gross enrolment ration is 65.5% (UNDP, 2006). In 2006, Human Development Report shows the Human Poverty Index (HPI) of 47.5 values for Lesotho, which ranks the country 89th among the 102 developing countries for which the index has been, calculated (UNDP, 2006).

The geographical position of Lesotho being completely surrounded by the Republic of South Africa has very serious implications on the economic performance and on the technological infrastructure on the country. Its economic performance has enormous impact on the provision of effective research for application of Science and technology and allocation of resources for implementation of ICT programmes for educational institutions to ensure a society that is rich in information. According to Lesotho Telecommunications Authority (2007), there were only 23 000 subscribers for telephone mainlines in 2002 that grew at the rate of 1.7 per cent by the end 2007; 21 000 subscribers for mobile cellular phones attaining an annual growth of 8.9 per cent; 100 tele-bureaus that increased to 2605 in 2005 and 3 internet providers that remained unchanged until 2007. In support of these data, UNDP (2003) reports that in Lesotho only 3 out of every 1000 people have access to internet in 2002. The same publication shows no data on government expenditures on scientists and engineers engaged in technological research and development.

In an attempt to meet its Vision 2020, Lesotho like most countries of the world adopted open and distance learning (ODL) to improve education access to all levels of education and training. The first ODL institution, Lesotho Distance Teaching Centre (LDTC) was established by the government of Lesotho through the Ministry of Education and Training in 1974. The centre was opened in order to address the demand for less formal training and retraining among disadvantaged groups such as out of school youths, adults who missed on formal education, retrenched mineworkers and herd boys who are the characterised phenomena in the mountains(ESSP,2005), with the understanding of the important role education may have in accelerating economic development. Since the opening of LDTC there has been a growing number of ODL providers in the country, most of which are situated and operate from Maseru the capital city. In 1994, the National University of Lesotho through its institute of Extra Mural Studies (IEMS) launched a 4-year part-time B.Ed programme in Adult Education. In January 2002, Lesotho College of Education launched the Distance Teacher Education Programme (DTEP) with the first enrolment of 502 Learners.

Distance learning institutions in Lesotho have in place different types of mediation technologies.  In this study, literature on the use of ICTs in distance learning has been reviewed and the experiences of distance learners at the Lesotho College of Education have been solicited in order to gain in-depth understanding of how learners in the mountains of Lesotho utilise available ICTs.


## LITERATURE REVIEW

### Issues on Development

World Bank (1991) in Nnadozie (2005) describes development as a sustainable increase in the standards of living of one's country that includes a large number of things: material consumption, education, health and environmental protection. Matlosa et al (2007) accepted that there are as many definitions of development as there are writers on the subject.  In extrapolation to that, development is conceived by Todaro (1992) as a multidimensional process encompassing major changes in social structures, people's thinking, national institutions, an increase of economic growth, reduction of inequality, and eradication of absolute poverty. Development in all societies must have at least three objectives.  The first objective relates to the improvement in the quality of life: improvement in the availability and distribution of basic life-sustaining goods such as food, shelter, health and protection. The second objective is in connection with the economic progress and includes raise in the levels of living, higher incomes, provision of more jobs, better education, and more attention to cultural and humanistic values all of which will not only enhance material well-being but also create high individual and national self-esteem. The third objective is concerned with the expansion of economic and social choices to individuals and nations: choices of freedom from servitude and dependence to other people and nation-states and other forces of ignorance and human misery.

Nnadozie (2005) postulates that development can be measured directly and indirectly using a variety of its components. Development can be measured through the use of quality of life

components such as provision of better education, high standards of health and nutrition, and reduced poverty. This measure of development is called Physical quality of Life Index (PQLI). Human Development Index (HDI) on the other measures development on the basis of human development indicators: life expectancy, educational attainment and Gross National Product (GNP).  Gini Index measures income distribution among households or individuals within a country, while poverty reduction can be measured through the use of Human Poverty Index (HPI).  Though these measures consider different indicators of development at a time, they are consequently related.  The country with a low PQLI tends to have a low GNP which is another measure of economic development. Countries with low HDI need to take a rigorous effort to improve indicators of PQLI such as life expectance, educational attainment and other indicators.

Unlike the objectives of the first, second and third UN Development Decades, which focused mostly on economic growth, a mere indicator of development, the Millennium Development Goals (MDGs) deal with many of the long lasting failures of human development.  The Goals position human well-being and poverty reduction at the forefront of global development objectives (UNDP, 2003).The goals serves as the quality criteria upon which the progress towards the vision of Millennium Declaration - guided by basic values of freedom, equality, solidarity, tolerance, and respect for nature and shared responsibility are measured. The Goals and the promotion of human development share a common motivation and reflect a vital commitment to promoting human well being that entails dignity, freedom and equality for all. The goals also points towards a human rights agenda – rights to food, education, health care and decent standards of living as highlighted in the Universal Declaration of Human Rights.

**Development and Education**

Literature shows that the expansion of educational opportunities at all levels contribute to aggregate economic growth by creating a more productive labour force and supporting it with increased knowledge and skills; providing widespread employment and income-earning opportunities; and providing the kind of education and training that would promote literacy and basic skills (Chenery, et al., 1976; Todaro, 1992; Cook and Healey, 1995; Nnadozie, 2005; UNDP, 2003; UNDP, 2006; Adedeji, 2007). The key role of education and training is to improve the quality of the workforce, the many of whom are in continuous employment. Adedeji (2007) argues that education being so important for development, for human rights and for the improvement of the standards of living in a society, requires for governments to predominantly reposition education at all levels. Without relocating education, scientific and technological developments will remain underdeveloped. Education should generate the knowledge and technology needed for development through undergoing scientific research and as agents (knowledge and technology) for acquisition, adaptation and dissemination of scientific and technical knowledge.

Open and Distance learning (ODL) is seen by some theorists as a totally different form of education, by others as simply taking a place of a "continuum" of types of education, which has at one end the entirely supportive one to one face-to-face situation and on the other angle a process of learning from materials that lack human interaction (Sewart, 1993). Distance education is generally defined as a method of teaching and learning whereby learners are separated from the instructional base or teacher, either in space or time, for a large part of their learning which necessitates the mediation of communication for the purposes of giving content, learner/tutor interaction and provision of feedback (ADEA, 2002).  According to Peters (2001), distance education is characterised by firstly, structured study materials developed in accordance with educational technology.  Secondly, autonomous learning whereby learners themselves take over and exercise the functions of the teacher – recognise their learning needs; formulate learning objectives; select content; draw up learning strategies; and evaluate their learning.  The third characteristic of distance learning is the presence of pedagogical dialogue or rather direct or indirect interaction between instructors and learners.  This interactivity with the learning materials is the key element of the learning environment of the distance learner – it increases the sense of isolation among learners; it decreases the learners' flexibility to adapt to new situations; and increases the variety of experiences that individual learners are exposed to (Belanger & Jordan, 2000).

Basically though, Bates (1983) describes distance education as a mediated type of education, and Timmers (1980) claim that media increase amount and level of interaction between learner and learning materials. However, in order to adopt and use the media in distance education it must be accessible, adaptable, acceptable, appropriate and affordable to the learners and tutors.

Dorothy (2005) defines technology as any advances in the production of devices or new application of existing devices that change the way human beings do things. Educational technology is the application of scientific principles and tools to facilitate the teaching and learning process. Technology in education could be used as a tutor to teach new concepts or reinforce already learned material; as a means to explore new information; as a tool to create, compose, store and analyse data; and as a means to communicate with others. Although technology plays a key role in the delivery of distance learning, educators are warned to remain focused on instructional outcomes, not the technology of delivery. Nevertheless, the technology of delivery - information and communication technologies(ICTs) such as cellular phones, telephones, fax machines, computers and internet, tele-bureaus, digital cameras, video phones and scanners come into distance learning as a result of the nature of distance learning – separation of the learner from the tutor by space and time. Both distance learners and educators use ICTs to improve the process of teaching and learning. Because learners are different in their learning styles, distance educators argue that ICT provide flexible interaction opportunity to personalised instruction at a distance both with peers and with experts; that ICT encourages learner autonomy in communicating assignments feedback and taking on examinations (Sahoo and Yadav, 2005).

## OBJECTIVES OF THE STUDY

The objectives of the study were:

1. To explore both tutor and learner perspectives in the use of mobile technologies available to distance learners for support in the mountains of Lesotho.
2. To study the level of preference to different means of communications to learners.
3. To assess the level of utilisation of mobile technologies in the provision of learner feedback and counselling.
4. To highlight infrastructural and geographical problems encountered by learners and tutors that impedes effective use of technology to access learning and support.

## METHODS AND PROCEDURES

The study was conducted using questionnaires and interview data from 200 second and fourth year Distance Teacher Education Programme (DTEP) learners at the Lesotho College of Education. The learners were purposely selected from the mountain regions of Mokhotlong, Thaba-tseka and Qacha's Nek.  Included in the sample were the learners from the mountain sites of Semonkong, Ketane, Phamong and Mphaki.

## FINDINGS

After analysis of data the following findings were apparent:

Table 1:      **LEARNER CHARACTERISTCS**

| | Number of respondents (n=200) | |
|---|---|---|
| **Characteristics** | **Frequencies** | **Percentages** |
| | | |
| **Gender** | | |
| Male | 54 | 27% |
| Female | 146 | 73% |
| | | |
| **Distance from Study centre** | | |

| | | |
|---|---|---|
| 2 Kms | 4 | 2% |
| 5 kms | 20 | 10% |
| More than 5kms | 176 | 88% |
| | | |
| **Mode of travel to the study centre** | | |
| By taxi/bus | 60 | 30% |
| On Horseback | 40 | 20% |
| On foot | 100 | 50% |
| | | |
| **Sources of Energy for studying** | | |
| Electricity | 00 | 00% |
| Gas, Paraffin and candles | 200 | 100% |
| | | |
| **Access to technological appliances** | | |
| Radio with cassette player | 176 | 88% |
| Television with video or DVD Player | 16 | 8% |
| Computer with printer, and internet | 00 | 00% |
| Telephone | 28 | 14% |
| Fax Machine/Photocopier | 00 | 00% |
| Cellular phone/Mobile phone | 164 | 82% |
| | | |
| **Preferred mode of Communication with the Tutor and other learners** | | |
| Radio Message | 34 | 17% |
| Telephone | 2 | 1% |
| Cellular phone i.e. conversation, text messages, voice mail | 164 | 82% |

Table I shows that majority of DTEP learners who live in the mountains are women(73%) who walk (50%)more than 5 kilometres from the study centres(88%). All of them do not have access to electricity and use other sources of energy to study such as gas, paraffin and candles. Most of them have a radio with cassette player (88%) and very few own a television with video or DVD Player (8%). All of them do not have access to information and communication technologies such as computer with a printer and internet, fax machines or photocopier. A limited number (28) of them have mainline telephone especially who are especially those who are in the camp centres of Thaba-Tseka, Mokhotlong and Qacha's Nek. Majority of them (82%) own a mobile phone. Having access to the mobile phones makes the cellular phone the most preferred mode of communication (82%) amongst learners and with the tutors.

**Findings from Group Interviews**

- Majority (90 %) of the tutors reported to have been consulted by telephone from their learners requesting feedback on their assignments.

- Tutors make radio announcements for weekend workshops, on-campus sessions and results.

- More often tutors provide clarifications on the telephone and cell phone.

- Majority (100%) of the learners feel they have no electricity because they are staying in remote areas where the roads are bad and there can never be telephone lines or electricity lines.

- 82% of the learners prefer to communicate with their tutors and other learners through mobile/cellular phone conversation, text or voice mail messages because they find mobile phone as a quick and better method of connecting with other people. Learners find mobile phones convenient even though there are places where the network is problematic or not available as a result of terrain. The message can be

stored in the system and can be retrieved once the holder moves to a higher point where the signal is there – usually up the hill.

- A smaller proportion of learners (17%) prefer radio message from other means of communication. They say it is cheap and convenient in that Radio Lesotho transmission is available in almost all parts of the country, even where there is no electricity like in the mountains, batteries or solar energy can be used. There are places where radio signal is also a problem as a result of terrain, but they believe there are other ways of communicating amongst them.

- Recommendations for future improvement: Learners believe that more transport and electricity and telecommunication networks would increase the way learners in the mountains communicate and study as other technologies such as computers and internet, fax machines and television requires electricity to operate. On the other hand internet, fax machines, telephones and cellular phones would need improved telecommunication networks.

**CONCLUSION**

In this paper, literature on the use of ICTs in distance learning and the experience of learners on the use of ICTs has been reviewed in order to gain in-depth understanding of how learners in the mountains of Lesotho utilise available ICTs to gain access to learning and support services. The study reveals that irrespective of the geographical base of the learner and the nature of the ICT in use to support the learner, appropriate infrastructure is required to support it for effective learning. This will not make education accessible but it would also improve of the livelihoods of people who are living in the mountains. Rural youth love their communities and want to stay there. This suggests that improvement in rural education, a typical ingredient in any rural development scheme would not accelerate the rural brain drain but would improve on the income distribution and alleviate poverty.

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