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Editorial

The emergence of new technologies coupled with e-learning has become the main focus of teaching and learning. The dominance of ICT especially in distance learning convinces both learners and instructors that technology delivers knowledge. The information delivered through internet can contain the most visual interactive capabilities required to deliver the best knowledge. The valuable component of the web based platform is combination of visual attraction, substantial contents, easily accessible, and well organized. Although a website can be seen to contain important information, the author and owner of the website play a big role in delivering true and unchallenged knowledge. Both instructors and students need to have clear vision of authentic web material. Websites that screen information before uploading can be dependable as the process involves elimination of some personal views and negative information. Most institutional websites have reputable educational information; therefore students should be encouraged to use such websites than free upload of unscreened material.

The use of ICT makes the lesson more “interesting, fun and improve presentation of materials. Also lecturers indicate that integration of ICTs increases students’ motivation which enhances students’ achievements” (Nihuka & Ngimi). The variation of technological resources and valuable contents in different websites require skills in choosing the right materials. Instructors as leaders in the learning process should have technological skills to be able to select the best and the current knowledge planned to inspire learners to engage in the lesson. Instructors should include the experience of the targeted group in each lesson in order to motivate them to continue using technology as an educational tool. Technology offers a break from focusing on the instructor, therefore learners should respond easily and positive to the technology. The technology chosen reflects on the instructor’s ability to incorporate technology in the learning process. Students’ technological motivation is the extension of instructor’s direction towards knowledge acquisition. Instructors are leaders in a technological based lesson; Instructors should be expert for each part of technology required in the learning process.

Technology is used as a knowledge deliverer and also it can measure the response toward the acquired knowledge. Both instructors and learners can be evaluated through internet or intranet platform. Instructors can be assessed through chosen contents and by learners’ evaluation. The wider knowledge and skills in ICT increase the chance of an instructor to vary lesson preparation and in motivating learners. During instruction learners are exposed to teacher’s ability to use technology. Status quo can be observed when an instructor prefers outdated technology or not using it.

Therefore technology is a need for any instructor who wants to align with the trends in the 21st century. The use of reputable institutional websites is the common ground for both learners and the instructors.

Dr. John Soka
The Editor

The Nature and Causes of School Effectiveness and The Education Under Performance in Tanzania

Issa Mcholo Omari

The Open University of Tanzania, Dept of Educational Psychology

Abstract: *The greatest challenge that the education system is facing in Tanzania today is not the mobilization and putting the children between the four walls of the classrooms. That has been done as an over 95 percent net enrolment ratio and over 110 percent gross enrolment ratio has been achieved at primary school level. At secondary school level there is about 40 percent participation rate at O Level, but dangerously much lower at A Level as it is about 5 percent and at tertiary level it is at worrying level of about 3 percent (BEST, 2012). Thus, the demand for education is very great indeed. The problem is on the supply side of giving quality education services for the children.*

The children of Tanzania have really suffered from inadequate supply of varied and high quality education services for far too long. They have gone a long way to demonstrate that they need the education. Some of them sit on puddles, dust, stones, wooden logs, or remain standing while someone called a teacher is preaching, or is it teaching or cheating!! Parents are prepared to foregone opportunity costs of the labor of their children and let them join community secondary schools, clearly knowing that their children are going to fail. The children even forego breakfast and lunch, if available, to try to get some education. School failure is the first line symptom of school ineffectiveness.

Current Symptoms of Underperformance in the Education system

The most direct symptom of underperformance of an education system is the non-attainment of the primary goals of schooling. The traditional measures of school achievements are the national examinations. In Tanzania, three examinations – P7, S4, S6 – determine and define the quality of teaching, learning, and learning outcomes. The Form IV (S4) examination is probably the most important examination which determines whether one will join the middle class to enjoy bread and butter, or will remain in the lower stratum of the society to cut wood and take care of goats, cows, and farms. Table 1 gives the characteristic performance of the students over a 10 years span. Division IV is in practical terms a failing grade as one needs only one credit pass in any core subject. Thus, failing should be defined as combined Division IV and failure to get any credit. When you do that, the failing percentages are literally frightening as schools are not effective at all in producing what they are supposed to produce. Pass rates at primary school level remain low at about 49.4% in 2009, and were 53.5% in 2010 while were at 70.5% in 2006 (BEST, 2010) and most of the passes are marginal at grade “C” level. At secondary school level, when you combine passes at Division IV with failures in 2009 you get failure rates 82.2%, 88.6% in 2010, and was over 90 % in subsequent two years (BEST, 2011).

One variable that has not received enough attention is the acute shortages of teachers (Table 2 and 3) and a paucity of teaching materials, including laboratories. The effect

of the establishment of ward secondary schools is quite apparent. The number of people attempting Form IV examination jumped more than seven points (7.4) in those

Table 1
O Level Performance in the Last 11 Years

Year	Division in Percentages				N
	I	II	III	IV + F	
2000	4.1	5.7	16.0	74.2	47,389
2001	4.5	5.7	18.2	71.7	50,820
2002	6.4	8.2	21.6	63.8	49,512
2003	7.2	7.3	23.6	62.0	62,359
2004	4.8	8.4	24.6	62.3	63,487
2005	5.2	6.5	21.9	66.4	85,292
2006	4.5	6.9	24.3	64.3	85,865
2007	5.1	8.6	21.9	65.4	125,288
2008	3.5	6.4	16.8	73.2	163,855
2009	1.9	4.4	11.6	82.2	248,336
2010	1.5	2.8	7.1	88.6	351,214

Source BEST (2011)

11 years. Thus the shortage of teachers should have been predictable during the time of policy pronouncements

Table 2
Secondary School Shortages of Teachers in Core Subjects in 2011

Teacher Category	Shortages in Core Subjects									
	CH	PH	BIO	MT	KIS	HI	GE	ENG	CIV	Total
Degree	1505	1539	1637	2090	1252	1229	1342	1520	706	12,820
Diploma	4128	4600	4658	5880	3080	2661	2854	4425	3379	35,665
Total	5633	6139	6295	7970	4332	3890	4196	5945	4085	48,485

Source: MoEVT Excel Data Sheet (2012)

Table 3
Shortage of Teachers in Non Core Subjects in 2011

Bible															
/															
GS	C	Islam	El	Ag	F	L+	HEc	IC	CO	B/	E	F	P	ME	Tota
E	E	ic	ec	r	re	E	on	T	M	K	C	A	E	C	l
1			32	5	14		14		60	21	5	8			3,25
299	4	111	7	7	8	7	212	5	755	9	6	2	7	12	1

Source: MoEVT Excel Data Sheet(2012)

Participation Rates as Measures of Education System Effectiveness

Another measure of educational (not school) effectiveness is the ability of the system to enroll reasonable rates of children who should be in a given educational tier, e.g., age 7-13 for primary education in Tanzania, That is what is technically called **Net Enrolment Ratio(NER)**, or, one could use the ability of the system to enroll any person wanting a particular level of education irrespective of age, which gives what is technically called **Gross Enrolment Ratio(GER)**. Table 4 gives those rates for 2011. While at primary school level the system is doing just fine, the proportions dwindle as you go up the ladder to reach 2.0 at A Level, and about 3.0 percent at university level, suggesting that Tanzania may have the least educated population in the whole world. This pyramid is quite abnormal. For the country to have a critical mass of middle class persons, to propel the country to middle income bracket, you need participation rates of 15 percent plus at A-Level and above. Here the Tanzania system is underperforming. It can enroll more as its universities have remained small, some with less than 5,000 students, and often mono discipline. In 2013, universities were short of 30,000 students as the system could not produce qualified candidates (*The Guardian, 2013*). On the other hand, university products are characteristically labeled as mediocre or sub standard in thinking and communication skills.

Table 4

Participation Rates by Levels: 2011

Level	Type	Participation Rates
<i>Preprimary</i>	Public and non public	NER= 42.4
<i>Primary</i>	Public and non public	94.0 (NER) (102.7 GER)
<i>Secondary</i>	(a) All levels	32.1 (NER) (36.1 GER)
	(b) O-level only	35.5 (NER) (50.2 GER)
	(c) A-level only	2.0 (NER) (5.0 GER)
<i>Higher Education[Age 20-23]</i>	University level	NER3.0 (8.0 GER)***

The age band of 20-23 provides a small denominator, hence the artificially large GER.

Source: BEST (2011)

The Concerns of Economists on Systems and school underperformance

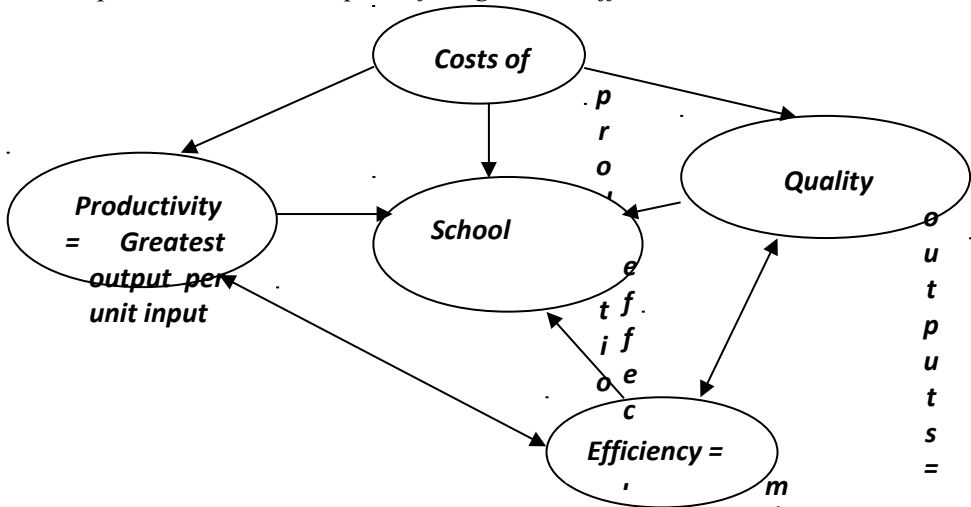
For good or for worse, educators cannot avoid the economists. The economists, have some good ideas, albeit complicating our lives. They constantly ask the question: *Did you achieve your educational goals and aims efficiently, without compromising quality? Efficiency here is defined as achieving the desired level of output [quality] at the lowest cost possible.*

This introduces another new concept of *productivity* which calls for minimum costs or inputs, and optimum or maximum possible outputs. For instance, if same school success can be achieved by two teachers, why have four, thus adding unnecessary costs? If a teacher can teach 50 pupils as effectively, why let him/her teach 30 only? This is simple economics. Here the concept of economies of scale applies as the universities employ rare professors and professionals to teach very small classes

The economists would also make a distinction between *technical effectiveness and efficiency*, on the one hand, which refers to school based short term outcomes such as learning behaviours, social skills, and academic achievement. Figure 1 gives the essential concepts which define school effectiveness.

Figure 1

Relationship Between the Concepts Defining School Effectiveness



On the other hand, there are what may be legitimately called *social effectiveness and efficiency*, which refers to long term effects on the society and the individual, such as productivity at work, social mobility, economic earnings, and social participation, especially in democratic processes. How about factoring in opportunity costs -- depriving families the labour of their children? How about the social savings by keeping the children in schools --socializing and keeping them off from crimes, early marriages, and hooliganism?

The School Effects to Look at in the Production of Robust Learning Outcomes

Granted that *the economists* will concentrate on resource inputs per pupil as related to goal attainment, there is no necessary contradiction with instructional *psychologists* who concentrate on school and classroom variables such as time on task, structure of lessons, and teaching methods. *Educationists* in general, have a concentration on school organization and leadership styles as determinants of schooling outcomes. All the three categories of interested parties are agreed with UNESCO that school effectiveness deal with measuring the success of the school system in promoting *learning outcomes, and especially academic achievement*. All key players in the education industry are agreed that this is the central goal of any education system. These players include:

- **Policy makers:** They all need functioning school system ;
- **School heads:** They all want their schools to do well;
- **School teachers:** They all want their schools to do well;
- **Parents:** They all want their schools to make their kids pass examinations;
- **Students :** they all want to get outstanding grades;

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- **The community:** It also wants functioning schools.

Yet educators and teachers, have totally failed to problematize the issue of goal attainment. One has to ask aloud: What are those important educational objectives that we want schools to strive or work for their achievement? School effectiveness has to address squarely the issue as to what constitute desirable school learning outcomes. It is these days agreed that schools could pursue all or some of the following types of knowledge:-

Content knowledge. Focuses on established, in each subject area, facts, concepts, principles, theories and methods of how to generate new knowledge, test hypothesis, proving a theory, ways of thinking. about realities, truths, etc.

Procedural knowledge. Focuses on how things work, become what they are, how to make new products—cars, houses, boats, clothing, food, etc.

Metacognitive knowledge. Focuses on an enquiring mind, superior questioning strategies gravitating on: “*why and how come*” things are the way they are? Why Tanzanians are poor, given the abundance of natural resources?

We ourselves are quite limited. Our teachers are textbook bound, and these books are inundated with content knowledge. Characteristically, over 90 percent of classroom time is used to load pupils with content knowledge, which they then regurgitate during examinations. Even within content knowledge, the focus has been on established facts and principles. Teachers and textbooks are very limited in the articulation of concepts, theories, and practical work. Lack of workshops and laboratories, or even experimental farms, and mock sessions have greatly limited practical thought. The schooling process hardly encourage hypothetical thought, probabilistic thinking involved in research, imaginations, and loud thinking. Questions involving “*Why and How come?*, or Are you *sure?* Can you prove and defend your point of view? But the world would never be the way it is without procedural and met cognitive thought. That is where discoveries belong.

In addition, schools have to consider the hierarchy of mental abilities from Blooms(1976) taxonomy of educational cognitive objectives:-

- (1) **Memory abilities** – remembering, recalling content knowledge
- (2) **Comprehension abilities** – understanding concepts , principles and theories, etc.
- (3) **Application of learnt knowledge** in new situations e.g. how to make a poem; make a car using physics knowledge.
- (4) **Analysis of situation**, materials, etc, requiring reflections, deep thinking, reflexive thinking.
- (5) **Synthesis** – thinking aloud, outside the box, imagination of how things could be better, hypothetical thought, discovering new knowledge, new ways of doing things, putting together theories, explanations, and ideas about nature and natural phenomenon.
- (6) **Evaluation** of success, failure, performance, using data, evidence, logic, ideology, social circumstances, what is correct, what is wrong and why?

So, which goals are our schools eschewing to attain in Tanzania today? There is plenty of evidence suggesting that our examinations focus at (1), (2), and tangentially on (3), and practically nothing on (4), (5), and 6. These are key concerns in talking about school effectiveness. What exactly are you producing or achieving? Producing robots or thinkers?

- (i) Do we know the goals and outcomes that we should encourage and energetically promote?
- (ii) Do we agree or is there concerns on the goals and aims?
- (iii) Which goals should receive priority in promoting school effectiveness?.
- (iv) Over what period of time should we expect the realization of the goals, and hence the outcomes? You cannot turn an underperforming school into high quality one in one or two years. May need a minimum of five years or more for a good headmaster with an excellent team of teaching staff
- (v) Whose standards of performance shall we use and strive for? There are government standards, School Board standards, community standards, teachers standards, headmasters standards, students standards. Some teachers have no standards or moral qualms when students fail.
- (vi) What will be the criteria for value addition? Do we have baseline data using same yardstick? If you change goals, you also need to change the yardstick. Thus if you aim at higher cognitive processes such as evaluation ability, you cannot test using memory type of examination.

Without clarity on these key preliminary considerations, the whole concept of school effectiveness becomes hollow. It is predicated upon clarity, and consensus on the goal area. This is especially important in the area of the balance between content areas of the syllabus and the mental or cognitive operations desired in the school products. School teachers and headmasters are often overtly concerned and obsessed with the completion of the syllabus and passing of national examinations, and less on whether children can think productively and appropriately. More than often, syllabuses are overloaded with obsolete and irrelevant disparate pieces of knowledge. Similarly, textbooks are out of date, and some with wrong formulations and information. The famous mathematician, Professor Mushi (2009), counted over 10 errors in secondary school mathematical syllabus, and the textbooks were quite out of date. Our teachers are often blindly following the syllabuses and textbooks, and especially in remote rural areas where alternative searches are not possible and books are not available.

Models for Promoting School Effectiveness

For a school to be effective in affecting the changes that promote the attainment of the desired outcomes, the management has to have conceptual clarity of what variables are at play in the school as an *organized unit*. All important variables at all levels have to function well for a school to be optimally functional.

Figure 2 shows an organic model of the building blocks for school effectiveness. The interlinkages are shown by arrows. Let us deal with each *Box* at a time for simplicity purposes.

Box A: *The Necessary External Inputs.* Most schools, even private ones, need these inputs as follows:-

- (a) Parental and community support to enforce school discipline and attendance;
- (b) Adequate financial support, for even when you charge fees, they cannot be enough for all school infrastructure;
- (c) Systems management support such as clarity of circulars, directives and policies
- (d) Reasonable physical facilities. Although students can learn even under shades of trees, a little more comfort helps;
- (e) Sufficient teaching materials such as syllabuses, textbooks, laboratories, maps, and computers
- (f) Regular teacher retooling, especially today when you have knowledge and technological explosion. In-service programs helps.
- (g) Regular supervision and appraisal of teachers. This is not very popular in Tanzania. Yet for young, and inexperienced teachers, school management need to regularly monitor classroom teaching and the handling of student assignments.

Box B: *School Inputs.* All things being equal, and the conditions in **Box A** being met, school effectiveness will greatly depend on school level inputs. Here, it is less of material inputs but more of managerial and other human resources inputs at three variations that we label: ***school climate; enabling conditions; and the teaching process.***

→ **School Climate.** This is an illusive and invincible parameter of an organization like a school. Live weather, you can feel it but cannot see it. You can see it is sunny outside, but when you get out there it is chilly and windy. According to Mullin (2005):

organizational climate relates to the prevailing atmosphere surrounding the organization; to the level of morale and to the strength of feelings of belongingness, care, good will, and warmth among members. It will influence the attitudes which members of the organization bring to bear on their work performance and interpersonal relationship (p. 899).

When you have positive and strong school climate, you should expect to see in schools: -

- High students expectations, which condition their motivations and work habits;
- Positive teacher attitudes towards themselves, their students, and management;
- Order and discipline, conceived positively to mean things are done in an orderly manner;

- Organized curriculum in terms of teachers and students knowing, in advance, what will be taught, when and where, using which resources. such as public praises

- Frequent rewards for good performances and behaviours, such as public praises and incentives for good performance, and promises of trips or eat good food.

→ **Enabling conditions.** The school cannot be effective without some key working tools and conducive working context and environment. The key enabling conditions for a school to function well would include, among other things, the following elements : -

- **Appropriate teaching force** by subjects, levels of educational and professional qualifications, experience, and competency.

- Flexibility and autonomy of the school, and the teacher in particular, who knows the students well, and so can adjust instruction and use resources appropriately for the benefit of all students.

- Plenty of time in school. There is now ample evidence that the number of days pupils spend productively in school makes a difference. All things being equal, the more days spent in school the better is the school placed to realize its goals. The data in Table 5 shows that Tanzania is not doing so well in that score, which may, in part, explain the underperformance of the system. South Korea beats all other countries here in terms of students academic performance, but also teaches most in terms of the number of days in a school year

Table 5
The Number of Schooling Days in Different Countries

Country	Days in school per year
(1) USA	180
(2) OECD countries	195
(3) S.E Asian countries	200
(4) South Korea	210
(5) Tanzania	194

- **Regular Evaluation of Teaching.** This again is not very popular in Tanzania but students should often, may be once per year, get an opportunity to formally or informally evaluate their teachers.

→ **The Teaching and Learning Processes.** This happens at the real shop floor. That is where the action is. Here, we shall not talk in detail about the qualities of a good teacher, or what students look for among teachers. But as a minimum, you need good teachers for the school to be effective in producing high quality students. The minimums are that the teacher should be:

(i) Knowledgeable of basic pedagogical principles and strategies ;

(ii) Having deep knowledge of the subject matter content;

(iii) Knowledgeable of principles and strategies of how to teach that particular subject

(iv) Having enough knowledge of the characteristics of the students one is teaching.

Beyond that, for the school to be effective, you need: -

Plenty of time for learning in school. The current practice of double shifts, half day schools, and non use of Saturdays greatly curtail the time for learning for many students. This is exacerbated by the lack of reading materials, facilities, and time at home. Our children have plenty of quality time wasted. This may account for the superior performance of boarding schools, especially at *A level*, and church schools. Some countries are counting about 10 hours of schooling time per day while some of our schools hardly have six hours of classroom time.

Variety of Teaching Strategies. As often said, *variety is a spice of life and monotony is the enemy of curiosity, while curiosity is the mother of all motivations.* Students populations differ greatly in abilities and interests, and therefore a variety of teaching approaches will not only motivate them but teaching would be catering for all students.

Resourcefulness of the teacher. A good teacher, just like a beautiful girl, when you see one, you can feel it == This is it. Resourceful teachers know how to improvise even where there is a paucity of teaching materials. They can use models, maps, local materials, real and imaginative examples to make the lessons real.

Frequent Homework for Students. This does not need to be over emphasized. Beyond keeping the students busy, it helps to cover the syllabus, develop independence and initiative among students. **Remember to mark and give the students the appropriate feedback soonest.**

Regular Student Assessments. One can use a variety of assessment tools to give monthly tests which are marked and returned for quick feedback.

The traditional education service delivery production function is as follows:
 Schooling Outcomes = Physical inputs + Effort + Type of knowledge + house hold behaviors and actions
 It is now self evident that, and especially in developing countries, that, it is effort in the equation that makes all the difference. Do not expect miracles if teachers are not effective.

The Current School Outcome Production Function Model

It is now well established that the performance of any school is determined by the following formula, according to *AERC (2011): and elaborated herein:*

$$Y = \text{Infrastructure} + \text{type of knowledge} + \text{Effort} + \text{Home Environment}$$

The infrastructure: This includes :

- reasonable amount of comfort in the school and classroom
- safety of students from accidents and mistreatment
- supply of teaching and learning materials

Type of knowledge. This would include:

- whether it is facts, concepts, principles, methods, or theories
- content or procedural or meta -cognitive knowledge
- methods of instruction – transmittal less mentally engaging

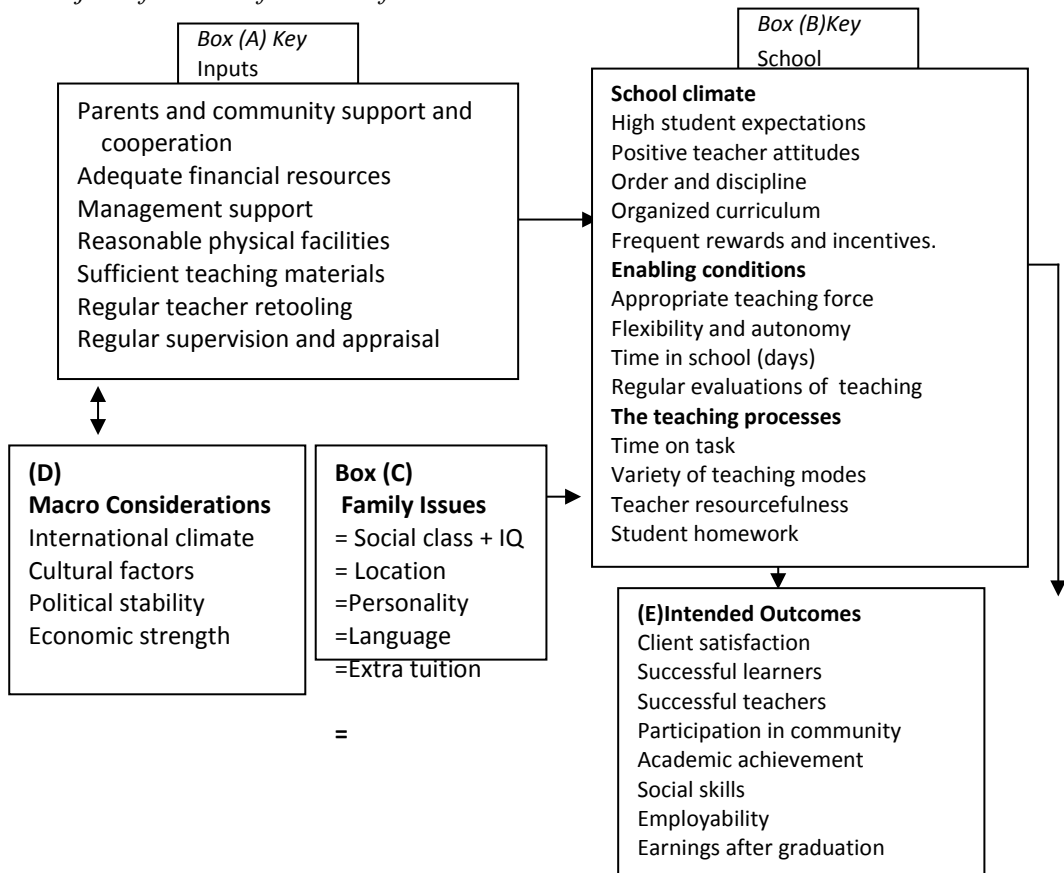
Effort. This would include:

- number of days pupils spend in school
- number of hours pupils spend actually learning
- the variety of instructional procedures

Home environment. This would include

- the social class of parents
- availability of learning opportunity – time and infrastructure
- parental attention, concern, and support to the student.

Figure 2
Major influences of school ineffectiveness



In developing countries, evidence suggests that it is the type of knowledge and effort which counts most, given the poverty and literacy of parents. Even in very modest physical infrastructure, these two variables can produce profound learning outcomes. This is where Tanzania is weakest – poor teachers knowledge and little effort

Box C: Familial and Child Characteristics. Schools cannot be effective if they do not take into account the family backgrounds and personal circumstances of the child. The key elements that the school need to take into account would normally include:-

- **Social Economic Class.** The grinding poverty among many of our families have debilitating effects on the learning of the child. Just imagine children with light evening meal (unbalanced), no breakfast except water or tea only, and no lunch, being in your class!! Hungry children cannot learn much!!
- **The intelligence level of the children.** An early assessment of the intelligence of the child helps the teacher to adjust instruction accordingly.
- **Location or residential areas.** These include long distance to walk to school, coming from dirty inner-city, and dangerous routes.
- **Personality.** We all know some children are introvert, i.e., withdrawn, quiet, self centered, not by choice but involuntary conditioning, while others are extrovert – outgoing, gregarious, and eager to interact with others and the teachers, including answering questions. Both groups need to be treated equally.
- **Language.** Sometimes we assume that all primary school children know Kiswahili, but get surprised, as at Class IV, many children can hardly converse in Kiswahili, leave along English.

Box D: Macro Issues. Schools do not operate in a vacuum. The wider environment matters to varying degrees. That context would include:

- **Supportive international** climate such as donor support, international NGOs support, and churches.
- **Cultural factors.** Tanzania is not a homogeneous community. You have variations, ranging from the *Hadza* who still dwell in caves and dress using kilts, to the real westernized personalities. In the middle, you have marginalized groups such as the *Maasai* and fishermen who may not relate to the education enterprise very favourably as other tribes.
- **Political stability.** Schools cannot be effective where you have tribal and intra tribal wars and fights, or border conflicts.
- **Economic strength.** May be more than anything else, the functioning of a school will rely on whether the economy of the country is working such that parents can get their salaries in time and paid for their crops adequately and in time.
- **Intellectual climate.** Schools, **per excellence**, depend on the intellectual products such as published books, journals, magazines, and newspapers. This is an important input but hardly recognized so, and Tanzania is doing badly here.

Box E: The Goals Or Intended Outcomes. This is the most problematic and most neglected aspect of school effectiveness. My model is quite broad, as school achievement is only one goal of schooling. Consider the following outcomes which are as equally important and desirable aspects of schooling and education in general.

(1)**Client satisfaction.** Here comes in the whole concept of accountability. Are the clients of schools satisfied that the school is doing well? The clients include:

- The state or funding agencies or the government need to be satisfied with the performance of schools, taking into account what it costs to maintain them.

- The parents – Are they happy with the school outputs?
 - The taxpayers, the community, the development partners – are they happy with the school performance ?
 - The students themselves – they may pass examination but at what cost?
- (2)**Successful learners** – motivated, continue to learn even after class and school, well adjusted – not thieves or drug pushers.
- (3)**Successful teachers** – happy, economically stable, socially alright
- (4)**Participation in the community** and in class by both the teachers and students – e.g. cleaning school, planting trees.
- (5)**Academic achievement** – what level, which skills and acquired at what cost – may be successful but unhappy, unable to socialize, or participate in community affairs.
- (6)**Social skills such** as confidence, mobility, communication, team work, leadership, attitudes towards work, family, etc
- (7)**Employability** – ultimately schools aim at producing marketable, hence productivity work.
- (8)**Earnings after graduation.** We all need to make money after schooling and schools can motivate and socialize individuals in that direction.

Concepts in Human Resources that Illuminate School Effectiveness

The four key concepts relevant to human resources analysis invariably include:-

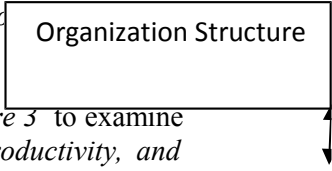
- **Effectiveness** defined by UNESCO (2004) as the promotion and achievement of specified school or program goals and objectives, especially learning outcomes at acceptable standards. Could the education system achieve all schooling objectives at the same cost? Standards have to do with quality as well.
- **Efficiency**, defined as the use of resources so as to maximize the production of outputs (students) in the most cost effective or optimal manner. Could the system produce more students, given current resources, holding quality constant

Frequent Measures of Human Resource Effectiveness and Efficiency

- Absences and costs of absences, vacancies, and replacements,
- Equal opportunity by ethnicity, gender, age, and disability;
- Turnover rates and costs of hiring new persons;
- Punctuality at work place and in class;
- Attitudinal and behavioral commitment;
- Customer satisfaction: Parents; Pupils; and other Stakeholders.
- **Productivity**, characterized as the amount of output [students] teachers can carry through in a program without compromising quality. It is the greatest output per unit input such as a hour of teaching.
- **Quality**. This is the *mantra* concept in education that everyone cherishes. It is defined as the capacity and the capability of an education system to achieve excellence or standards that satisfy customers who are the students, parents, relatives, taxpayers, the state, and other development partners.

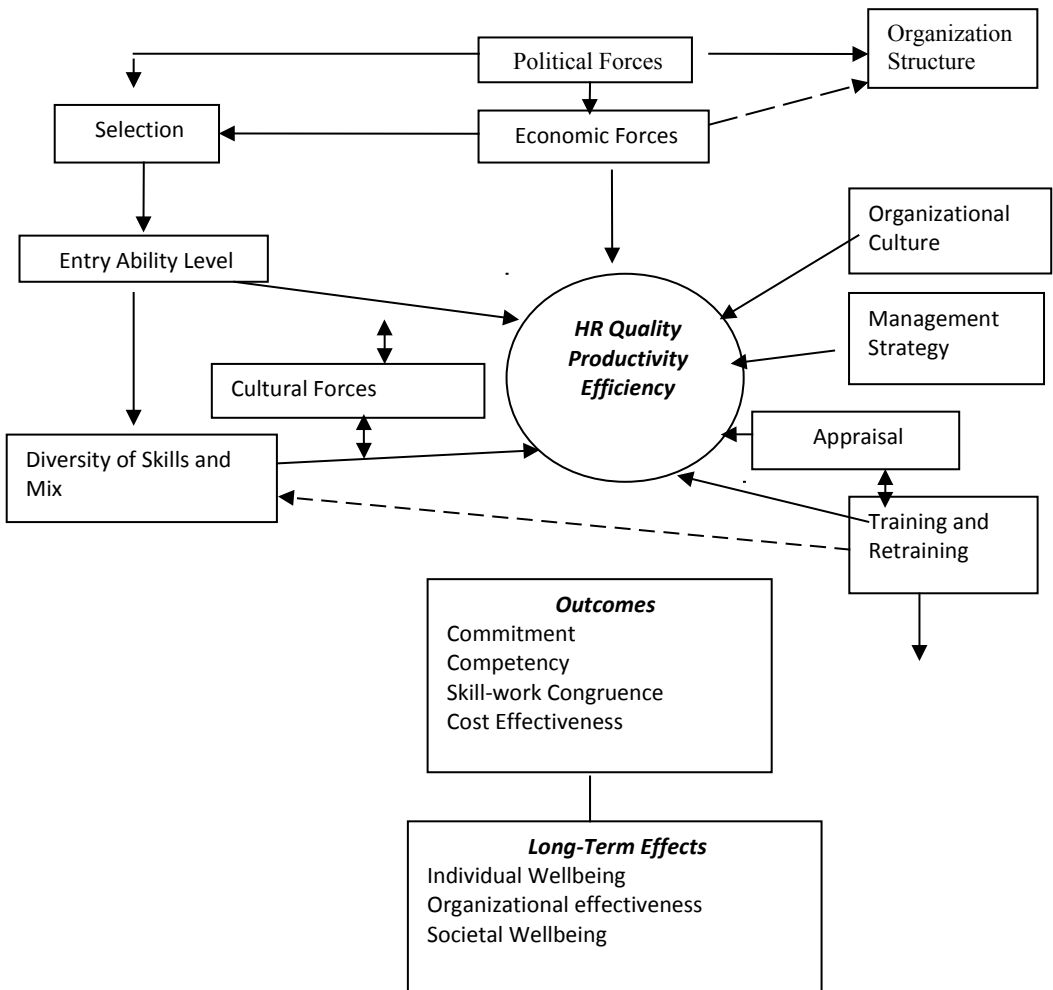
Figure 3 gives the determinants of these concepts. It is the quality of human resources in any given situation which determines and underlines the productivity, effectiveness,

efficiency, and quality of an organization and the subsequent outcomes. The four concepts are related as shown in *Figure 2*. *The million dollar question Tanzania doing in all of these parameters of human resources?*



Holding these four concepts at the back of our minds, we can use *Figure 3* to examine the factors that shape and determine HR *efficiency, effectiveness, productivity, and quality*. It has to be appreciated, in advance, that the HR situation in any country, and in Tanzania in particular, is complex and dynamic as the variables that are at play are many and multi-faceted. In the final analysis, it has to be underscored that one is dealing with *thinking human beings*, with their motivations, goals, families, personal ambitions, and wishes to actualize their dreams.

Figure 3
Determinants of human resources quality and productivity



The forces that are at play in shaping the quality of human resources are as follows:-

Political forces. Education is ultimately a political creation, and politics set the context in which it operates. The HR, especially the teachers, need positive political support, encouragement, appreciation, and reinforcement. The key political appointments such as ministers and senior management have to set the right context and give the right signals: that education is the bedrock on which the well-being and prosperity of the nation rests.

Economic forces. This has to do with the quantity of national resources dedicated to the sector in terms of the proportion of annual budgets and GDP, salary structures for teachers, provisions for other benefits such as housing, transport, and leave allowances. All these things matter and Tanzania should not be proud of itself for only spending about 16.9 percent of its annual budget on education some neighboring countries are dedicating over 30 percent. The trend has been as follows: The proportion of Annual Government Budget going to education in Tanzania in table 6.

Table 6
Annual education budget in Tanzania

Year	%
2002/3	18.8
2003/4	18.7
2004/5	15.1
2005/6	16.0
2006/7	19.8
2007/8	18.1
2008/9	19.8
2009/10	18.3
2010/11	17.6
2011/12	16.9

Source: BEST (2011)

Selection and recruitment. How competitive and transparent is the selection system, right from the appointment of the top management, to selection of candidates for training, and to identification of school managers? Handpicking, as is the case today in Tanzania for some leadership positions, may not guarantee optimal outcomes.

Entry ability level. Since most human resources in education start with a teaching career, if the education sector is to aim for a higher quality of human resources across the system, it needs to start with good material at the front end – when students are going into teacher training. It is important to set the entry grade point at average to high. The Tanzania situation is quite pathetic since the system recruits and trains persons from the lowest levels of performance, including failures at Grade A and diploma, and only slightly better at the university level where students with failing grades do not usually get acceptance.

Table 7
Number of Grade A teachers selected by performance: 2010

Division and Points	F	M	Total and %
I (7-17)	-	1	1 (0.02)
II (18-21)	9	6	15(0.4)
III (22-25)	168	446	614(14.5)
IV (26-28)	1893	1702	3595(85.1)
TOTAL	2,070	2,155	4,225(100)

Table 8
Number of Grade A teachers selected by performance: 2011

	F	M	TOTAL (%)
I (7-17)	01	05	06 (0.1)
II (18-21)	13	23	36 (0.7)
III (22-25)	244	412	656 (12.8)
IV (26-28)	2,362	2,070	4,432(86.4)
TOTAL	2,620	2,510	5,130(100)

Diversity of Skills and Optimum Mix. This cannot be overemphasized. Education is a complex enterprise requiring many skills, both in subject areas, and in managerial terms. You need a gender mix, different levels of cognitive ability and aptitudes, an inclusive approach to ethnic diversity and disabilities, and a variety of interests. Education services are delivered best when you have an optimal and appropriate mix of HR along these variables.

Cultural Forces. These are often not recognized as being significant in setting the context and limits under which given human resources operate. Is the culture one of cooperation, teamwork, competition, and producing maximum inputs or is it a minimalist approach where people work and complete tasks with little creativity and innovation? Is the culture one of accepting criticism, rejecting failure, and being driven by hope rather than by despair. It is important to cultivate a culture of learning and ever improving one’s own circumstances, independence, initiative, and consultations. These can help shape the direction and tempo of the productivity and efficiency of human resources.

Cultural Values to be Inculcated in the Workplace

- 1) Minimize individualism and emphasize collective or corporate responsibility, goals, and strategies.
- 2) Power Distance – Encourage participative low distance management strategies
- 3) Avoid ambiguities and uncertainties and so the rules of conduct and decision making should be clearly documented.

- 4) Emphasize achievement, goal oriented achievement motivations rather than nurturance at the expense of goal achievement.
- 5) Emphasize long term orientation, capitalizing on the future rather than the past, valuing thrift, savings, and persistence, as opposed to valuing the past, the present, respect for traditions, and fulfillment of social obligations.

McShane and Glinow (2003)

Organizational culture. This is often confused with organizational climate but borrowing from Mullin (2005), organizational culture is the “collection of traditions, values, policies, beliefs, and attitudes that constitute a pervasive context for everything we do and think in an organization (p. 891). In all organizations, there are underlying assumptions about the way work is performed, what is acceptable and what is not e.g., absenteeism; and which behaviors and actions are encouraged and which ones are discouraged, both overtly and covertly.

Organizational climate. Relates to the prevailing atmosphere surrounding the organizations, the level of morale, feelings of belonging, the care and goodwill among the workers. All those quite subtle variables define the health of an organization or education system. The bad publicity in mass media about the Tanzania education human resources, especially teachers raping their students, stealing school fees, and marrying their students, does not encourage organizational health.

Organizational structure. This is the physical and structural layout of the system. It relates to how the education system is decentralized, organized vertically and horizontally, its spread over several ministries and its geographical diversities. This has already been dealt with when analyzing the educational structure in Tanzania. Over all, it is quite diffused.

Regular appraisal and rewards. When done transparently, regularly, and on equitable basis, appraisals and rewards can be important motivators for workers and can help to keep them focused on the goals of the organization. This is not well understood in Tanzania. In fact, Tanzanians are almost paranoid when it comes to being evaluated. The OPRA system has been difficult to implement across government ministries, and the MOEVT has now developed two different Formats- one appropriate for the teaching profession and another administrative staff, and will soon start training staff on how to use them. Implementing such an appraisal system will require a major change in attitudes. It is reported that even the Ministry of Finance, which should be the champion of the exercise has not implemented it yet.

Training and Retraining. The initial pre-service training is very important in laying a firm ground but knowledge and skills become obsolete over time so regular retooling such as in-service training is important for both job efficiency and motivating workers. These retooling opportunities are very scarce in Tanzania. In fact, the Ministry of Education and DEOs have no stable and adequate budget for this activity

Some Studies on Determinants o School Effectiveness

In a recent UNESCO review of school effectiveness, Scheerens (2000) given in Table 9.

Table 9
Factors contributing to school effectiveness

	# of Studies	% Positive	% Negative
• Teacher-pupil ratio	78	54	6
• Teachers education level	24	64	36
• Teacher experience	70	85	15
• Teacher salary	32	74	26
• Expenditure per pupil	55	79	21

Apparently, these factors matter more in developing countries than industrial ones in . effectiveness. Other conditions enhancing school effectiveness in most studies include:

- Achievement oriented policies, and pressure to achieve;
- Shared school visions, missions and clear goals;
- Productive and positive climate, consensus, cooperative atmosphere, collegial relations;
- Planning, focusing, school wide or whole school concerns, and concentration on key skills ;
- Time on task, structured teaching,;
- Strong professional leadership, good school organization;
- Monitoring progress, regular evaluations, assessments;
- Reinforcements, feedback, appreciations and opportunity to learn..

How to get Best Students and Best Schools. What matters most

- Not amount of drilling but encouragement in thinking and manipulation of ideas
- Not inclusion of many topics but the understanding of concepts and procedures
- Not what you study but how you study it
- Not just quantity of time spent in learning but the spending of quality time in terms of attention, concentration, understanding, and clarity of instruction
- Not assignment of frequent homework but the content and objectives of the home work.

What Excellent and Exemplary Teachers Do To Produce Quality Outcomes

- Exhibit classroom management styles and organizational procedures that guarantee smooth transitions between topics and sessions. No “Where are we? Remind me – shuffling paper !!!;
- Encourage learning from students of different ability levels,;
- Manipulate classroom social environment to encourage students to engage in academic work. No irrelevances but relevant jokes;
- Set academic work with high cognitive demands ;

- Laboratory and practical work in set up in an inquiry mode.

The Critical Role of School Leadership in School Effectiveness.

While school effectiveness is ultimately a product of teamwork, the trend setter is the head of the organization, who, in our case, is the headmaster or head teacher. Recent literature suggest that the headmaster has three roles in a school as follows:

(A) ***Management and Administration of the School, which include:***

- Financial mobilization and management;
- Procurement of school supplies;
- Supervision and maintenance of school infrastructure;
- Class scheduling and school timetable management;
- Personnel matters in the school;
- Public relations with the community, parents, and the government ;
- Formulation of school policies and regulations ;
- Coordination of instruction and programs of the school;
- Ensuring school safety ;
- Supervision and protection of the young and vulnerable children..

(B) ***Instructional Leader.*** This is often forgotten but important and include:

- Teach some lessons and be a model teacher setting standards ;
- Monitor and evaluate instruction ;
- Help teachers to improve their teaching, including mentoring;
- Improve school instructional programs.

(C) ***Leader of School Reforms. Here included are :***

- Work on school innovations, including use of new technologies;
- Share school vision and mission with all staff and the community;
- Encourage teamwork, mentoring, and cooperation;
- Work on organizational changes to involve teachers in decision making;
- Enhance commitment to the spirit and goals of the school ;
- Encourage gender parity and integration.

Measures Often Used to Assess School Effectiveness and Efficiency

These measures are abstracted from human resources studies, and since school effectiveness ultimately rely on teachers, the measures are quite relevant, and they include:-

→ ***Rates of worker absenteeism*** which results in diminished learning and has cost implications in replacement of teachers;.

→ ***Level of equality of opportunity*** by ethnicity, gender, age, and disability;

→ ***Turn over rates. How long*** does your staff stay with you? Since experience counts, stability is a positive. Rapid turnover has implications in costs for hiring new staff, giving it transport and settlement allowances;

- ***Punctuality to school, to class,*** and getting out on the dot and not before time; no class cancellation, proper time use [no irrelevances];
- ***Focusing on the relevant*** and right aspects of the course, teaching appropriate knowledge and skills, and mentally engaging for students;
- ***Attitudinal and behavioral commitment, psychological presence,*** keenness to improve, innovate, and improvise;
- ***Customer satisfaction*** - Students and their siblings
- Parents and their relatives
- Stakeholders – the state and development partners
- ***Minimum school wastage*** in terms of:
 - Little dropout, if any at all;
 - Little repetition, if any at all;
 - No expulsion on account of underperformance;
 - Little remediation when needed;
 - No or only small failure rates.

Traits of Effective Leaders.

It is now axiomatic that most great leaders are self made rather than being outcomes of direct training or instruction or genetic endowment. Torrington, Hall, and Taylor (2005) cite several traits that have been observed in effective leaders. They fall into technical skills, cognitive ability, and emotional intelligence. Among other things, the list includes:

- Drive to achieve, achievement motivation;
- Motivation to lead others to achieve some goals;
- Honesty and integrity in the eyes of workers and followers;
- Self confidence, including ability to withstand setbacks, and standing firm on correct paths, and being emotionally resilient;
- General cognitive ability as manifested in reasoning and decision making;
- Knowledge of the business under microscope, e.g., education;
- Management of the perceptions of others;
- Emotional intelligence could generally include:
 - Charisma, self awareness, and self regulation;
 - Motivation or high drive to achieve, and inspiring;
 - Empathy – genuinely being part of the team;
 - Social skills of building teams, rapport, finding common ground ;
- Strategic thinking, problem solving skills, originality.

Conclusion: Accountability in the School Effectiveness Equation

The education system in Tanzania is obviously under performing in terms of learning outcomes being too low, below 20 percent in some subjects, and the overall pyramid. being greatly skewed or too steep and narrow at the top. Under performance in schooling outcomes as basically a function of teaching and school management

processes. The skewed pyramid in disfavour of tertiary and higher education relates to a lack of policy synchronization and uncoordinated expansion style.

Yet the education system in Tanzania is not “dead” yet, or totally dysfunctional as there isolated cases of excellent performance. It can be resituated but over a long period of time and with massive infusion of resources. In this context, the issue of accountability for all concerned parties is of uttermost importance. The key players in this whole quality equation are as shown in the diagram below. They include

- **The state** which provides most of the financing and policy directions.
- **The teachers and school management** in terms of hard work and sufficient number of working hours.
- **The stakeholders** –tax payers and development partners and other collaborators in financing and supporting the education system.
- **The students** in terms diligence and hard work.

It can be done if each party played its role proactively and productively, with confidence that “*Yes we can turn the situation around*”. The bottom line through is that the state should raise the *ante* and warn that *the nation is at the risk of sliding into a cacophony of mediocrity and infinite underperformance*, which will affect all other sectors of the economy and every person the society in general.

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Towards Technology-Enhanced Open and Distance Learning Delivery in the Institute of Continuing Education at the Open University of Tanzania

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Abstract: *Based on the WST (Willingness or perceptions, Skills or Competences and Tools or Access to Technology) Model (Knezek, Christensen, Hancock & Shoho, 2000), this article discusses findings related to opportunities and challenges for successful integration of ICT in the delivery of education in the Institute of Continuing Education (ICE) at the Open University of Tanzania. The study used multiple holistic case research design to explore lecturers' and students' perceptions, competence and access to ICTs in education. The study involved 20 lecturers from ICE (based in Dar es Salaam) and 250 students drawn from Kinondoni (90 students), Ilala (70 students), Temeke (40 students), Morogoro (20 students) and Tanga (30 students) Regional Centres. Structured questionnaires for lecturers and students and one follow up focused group discussion for students were used for data collection. Analysis showed that the reported positive perceptions of lecturers and students regarding use of ICTs in education delivery, competence in using technologies such as Microsoft office applications and accessibility to Computer and Internet facilities are among the major opportunities for successful integration of ICTs in education delivery. The critical challenges on the part of lecturers and students included lack of ICT pedagogical knowledge among lecturers, lack of institute-based technical support for lecturers and students, inadequate ICTs infrastructure and lack of access to some ICTs infrastructure. It is concluded that despite challenges, the available opportunities make it feasible for ICE to integrate ICTs education delivery in Open and Distance Learning at the Open University of Tanzania.*

Introduction

Institute of Continuing Education is the arm of the Open University of Tanzania which is charged with the mandate of providing continuing education through foundation course, demand-driven short courses and diplomas. ICE is the bridge that opens chances for those who would not have had the opportunity to participate in higher education. Despite of the fact that over 10,000 students spread all over Tanzania has enrolled (OUT, 2010), programs delivery in the ICE is still traditional dominated by print study materials (Nihuka & Voogt, 2011; Nihuka 2011). Only limited technologies, are used for delivery of education in the institute. For example, only two courses (i.e. ICT instructional materials and ODL professional course) are at least uploaded in MOODLE Learning Management System.

Besides, only a few lecturers use technologies such as e-mail, CDs and mobile phones in their teaching (Nihuka & Voogt, 2011). Nihuka (2011) found that ICTs such as MOODLE e-mail and mobile phones enhance flexible delivery and access to courses, provision of feedback to students, interactions and communication between lecturers and academic outcomes of students. It was against this background that the research reported in this article was designed to investigate opportunities and challenges for integration of ICT in education delivery in ICE at the OUT.

The Context of Open University of Tanzania Enrollment and Graduates

OUT has provided access to higher education to over 60,000 students, making it a number one University in Tanzania to admit a larger number of students from within and outside the country in five Faculties and two Institutes one of them being the Institute of Continuing Education (ICE). Already over 14,000 students have graduated from OUT between 1999 and 2012, of which 6,056 graduated from Institute of Continuing Education, 6,602 graduated from the five Faculties.

ICT infrastructure

OUT formulated its institutional ICT Policy in 2004 (OUT, 2009) as an effort towards integrating ICT in education delivery. According to the Policy, OUT aims to transform paper-based to blended learning education delivery, train lecturers on ICT-based course design and development and motivate lecturers to integrate ICT in education delivery in the university. To-date, there are several achievements realized in terms of ICT infrastructure in the university, which include improvement of ICT infrastructure and access, installation of well maintained internet connections, improvement of lecturers and students competence in ICT as a result of regular capacity building offered to lecturers and students and availability of technical support in the university. Other achievements include installation of MOODLE Learning Management System, Students Admission System, Examinations Registration System, On-Demand Examination System and several others.

Literature Review

Perceptions of Students and Lecturers on ICT

Perceptions of students on ICTs. Studies indicate that students are positive to integrate ICTs in their learning (Hiltz et al, 1991; Hiltz et al, 1991). Most students perceive that ICT integration has more advantages particularly in relation to autonomy and learning, such as having access to complementary material and establishing their own study time table (Azcorra, Bernardos, Gallego, & Soto, 2001; Jorge et al, 2003). However, concerns of a technological nature (such as not knowing how to use the internet) and of a communicative nature (such as not seeing the teacher and classmates) are also reported in the literature. Galanouli et al., (2001) reports that students perceived three main barriers about ICT use during learning practice, which include teachers' attitudes, lack of resources and lack of time. Although lack of appropriate equipment was considered an important factor when students were unable to use ICT in their learning, it was also clear that teachers' uptake of ICTs and attitudes towards ICTs' use played the most crucial role in the success or failure of their teaching and learning. This concurs with Lee et al.(2002) who found in a study evaluating student perspective on using computers that their attitude played an important role for determining the success of its use.

In a study to examine students' perceptions of technology adoption by faculty at a Midwest public university, Keengwe (2007) reported that students lacked computer skills in various computer applications that are necessary to support and enhance their learning experiences. This implies that college students do not necessarily possess the much needed skills to conform to the process of technology integration, but could benefit from direct technology-specific instruction by their faculty.

Perceptions of lecturers on ICTs. Murphy and Greenwood (1998) report that younger lecturers show significantly higher level of perception than older ones in ICT integration in teaching. The large majority of the staff interviewed described their teaching as being student centre with the use of ICTs; that is, they provided opportunities for their students actively to search for the ways of learning, make choices about their own learning methods, and self-evaluate learning progress. The data also showed that teacher beliefs about how using ICTs will impact on teaching and learning will vary greatly according to students' learning outcomes. Some staff members felt comfortable in moving away from a traditional teacher centered teaching method to a more integrated approach using ICT (Yang, 2008).

According to Bakkabulindi (2008) and a Report by the Republic of Uganda (2002, 2007), most institutions of higher learning in Uganda, both tertiary and universities, depend on manual systems, with little use being made of computers in teaching, admission, examination, registration, students' records, finance and accounting. Waite (2004), cited in Malcolm and Godwilly, (2008) indicate that even though teachers show great interest and motivation to learn about the potential of ICTs, in practice, the use of ICT is relatively low and it is focused on a narrow range of applications, with word processing being the predominant use. A study revealed that student-oriented pedagogical approach, positive attitude towards computers, computer experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher (Waite, 2004).

Research has also shown that teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration in teaching (Huang & Liaw, 2005). According to Fraser and Fisher (1982) inconsistency between teachers' actual use of ICT and perception can be attributed to inadequate supply of ICT resources, lack of access to the right kinds of technology, inadequate ICT pedagogical training and insufficient administrative support.

Competences and Experiences of Lecturers and Students on ICTs

Students' competences and experiences on ICTs. Studies conducted at the Open University of Tanzania (Nihuka, 2011) showed that students have lower competences on basic computer and internet application, however students are competent in using word processing (76.9%) email (72.6%), internet (71.6%), while situation was worse on sending documents as attachments (57.2%) and on database and PowerPoint presentation was (29.3%).

Rae (2004) in his study reports that students were confident in their use of a Word processor (87.7%) and an e-mail program (81.2%). The percentage of students who rated their ability to use the following applications decreased from the 79.9% confident with a Web browser down through Spreadsheet, On-line bibliographic database, Database, Image program, Chat program, Presentation manager, to the 22.3% confident with a Web authoring program.

Hellens et al. (2009) found that students are using computers regularly so they are not unfamiliar with them, which can be a great start to enter ICT sequences of changes at a tertiary level. They also appear to like using computers, as many of them spend many hours a week on them. Singapore students reported high competencies in basic ICT skills and perceived themselves to be frequently engaged in self-directed learning (SDL) and collaborative learning (CoL) using ICT. Their perception of SDL revolved around achieving better academic results, and they tended to adopt a divide-and-conquer strategy for CoL. Additionally, the study indicated further that Singapore students have basic ICT skills and perceived themselves to be frequently engaged in self-directed learning (SDL) and collaborative learning (CoL) using ICT. Their perception of SDL revolved around achieving better academic results, and they tended to adopt a divide-and-conquer strategy for CoL.

Lecturers' competences and experiences on ICTs. Instructors are required to be enriched by ICT technology so as to be competent in Moodle learning management system in their teaching (Heinich, 1989; Nihuka, 2011). According to Nihuka (2011), instructors have basic skills and competences on ICT application by 75% of them. His concern however related to whether or not such knowledge help teacher to use technologies such as Moodle in their teaching for better learning of students. Evidence reveals that teacher's mastery in ICT skills is critical to successful integration of ICT into teaching (Rosenfield & Martinez-Pons, 2005). In a study conducted by Murphy and Greenwood (1998), it was reported that the lecturers felt that, compared to their students, they were not well-trained and adequately exposed to ICT tools Furthermore,

Mooij and Smeets (2001) in the study aimed to investigate the implementation of ICT and its support within the learning institutions in Holland found that teachers' competence and confidence in their skills were one of the main factors to influence teachers' willingness to integrate technology in their teaching-learning process.

They claimed that educator's lack of knowledge is a serious hindrance to integrate ICT into education delivery. Educators' must attain and maintain an assured degree of technological competence to make instructional strategies more effective. This is supported by Albirini (2006) who stated that technology competence comprises not only technology knowledge but also the skills and experience essential to put them into use. Technology competency allows the teachers to turn into most efficient individuals in dealing with daily tasks such as to communicate with the student's parents; to keep records; to do research in their option domain; and to prepare presentations (Priscilla et al, 2008). Computer competence, therefore, can be observed in terms of teachers' beliefs concerning their knowledge, basic skill, and capability of performing essential functions using the computer

Teachers' competence presupposes positive attitudes to ICT, understanding of educational potential of ICT, ability to use ICT effectively in the curriculum and ability to manage ICT use in the classroom. However, Bauer and Kenton (2005) stated in their study that although teachers were having sufficient skills, were innovative and easily overcame obstacles, they did not integrate technology consistently both as a teaching and learning tool. Reasons being outdated hardware, lack of appropriate software, technical difficulties and student skills levels.

The level of competence of ICT was influenced by computer training whose duration ranged from two weeks to six months. Specifically, 48.4% (36) got training from former teacher training colleges and schools, 15.4% (11) from private computer centers, and 3.8% (3) self-taught and 3.8% (3) taught by friends, while 28.6% (21) did not receive any training at all. The respondents who had received some form of computer training displayed more use ICT in various areas than those who did not receive any training (Mwalongo, 2011). The result is in agreement with Jegede et al. (2007) and Lau and Sim (2008) who found that teachers were more proficient in word processing than the other computer applications. This indicates that professional development has a significant influence on how well ICT is embraced in the classroom (Nihuka, 2011; Zwaneveld & Bastiaens, 2007). Zwaneveld and Bastiaens, (2007) identify five competences teachers should have when they want to integrate ICT in their teaching practice:

- Individual media-competencies, this includes the basic knowledge and skills for handling the required hard-and software.
- Critical media-competencies, this includes the skills to select critically the media in the learning process of learners.
- A lifelong learning competence, this means that teachers have to be aware of all the new technologies that are developed and can be integrated in the daily teaching and learning practice.

- “Supervising learning process”-competencies, this contains that teachers can optimize the learning processes of learners. Communication is a core element in learning. Learners in groups are more and more located at different places and locations. ICT makes it possible to maintain these learners. It is a competence for teachers to know this and have the necessary skills to organize these kinds of communication and manage and enhance the learning process.
- Educational-design competencies, this competence includes to develop in a right way the necessary. Teachers need follow-up training sessions to ensure that they keep abreast with current ICTs and have a clear understanding of what to change as well as how to change.

In order for ICT to be effectively integrated in teaching and learning, professional development of teachers is critical, lecturers need to have a strong comfort level with, and consistently implement, technology tools such as Moodle learning management system, mobile phones, and ICTs tools in courses they are assigned to teach.

Lecturers’ and Students’ Access to ICTs

Tinio (2002) argues that lecturers’ and students’ access to ICTs depends on their use of ICT, cost of owning computer and network connectivity. Large numbers of lecturers and students in developing countries, Tanzania in particular have less access to internet due to factors such as ICT illiteracy, computer viruses and sufficiency internet cafes (Nihuka, 2011; Kozma 2000).

Also developing countries, has problems of poor supply of power, lack of internet connectivity, the most affected places are the rural areas. Learners in remote areas where they have no access to ICT equipments, have to travel long distances for the services.

Where university try to reach students in their places through building centers and supply centers with ICT technologies, students are lacking skills to use such ICTs, ICT technologies fast turnover, low economies of scales in purchasing ICT equipment within the learners, shortage of technical staff to ensure smooth running of ICT equipments in the regions, and that it is difficult to estimate the resource needed in each region (Mbwette et al, 2009). According to Mbwette (2008 &2009) and Bakari (2009) Open University of Tanzania has already made installation of ICT laboratories up to the regional center so as instructors and students have access on it and apply them to search learning materials through Moodle learning management system.

One critical challenge however, is narrow bandwidth which affects internet speed in most developing countries as reported by Gakio (2006) summarizing that the state of internet connectivity in tertiary institutions in Africa is: *too little, too expensive and poorly managed; as a result internet technology becomes even less useful for research and education purposes, (p. 41).*

Another challenge is maintenance of ICT infrastructures. For example institutions of higher learning like Makerere University, Kyambogo University, Mbarara University of Science and Technology, Uganda Martyrs University, Nkozi have tried to integrate ICT into teaching and learning environments, but they have faced a problem of high costs in purchasing ICT tools and maintenance (Farrell, 2007). According to Boakye

and Benini (2008) and Nihuka, (2011) lecturers integration of ICTs in education depend on whether are actively engaged through an effective professional development programme. The proposed study will seek to explore the feasibility of integrating ICTs in education delivery in the Institute of continuing education. The knowledge to be generated will inform decisions regarding strategies to be used to help lecturers integrate technology successful in their teaching.

Conceptual Framework

It is essential that in order to integrate ICTs in education delivery, lecturers and students should have positive perception, competence, and access properly and appropriate in the teaching and learning activities. This chapter has attempted to examine the opportunities and challenges for integrating ICTs in education delivery in various Universities. It has also analyzed that the ICTs programs such as Moodle learning management system etc are useful for education delivery.

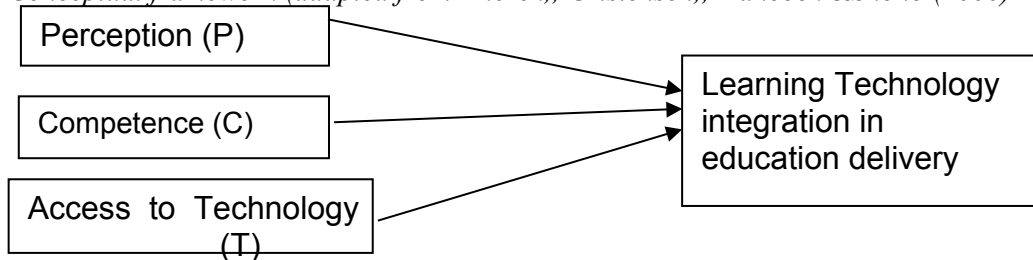
Perception of students for integrating ICTs in education delivery are hindered by lecturers attitudes, lack of ICTs resources and lack of time to integrate learning management system in education. In most cases second years students are those who use ICTs in e-learning than first years. Teachers themselves perceive ICTs in education delivery positively especially in developed countries while in developing countries lecturers prefers application of manual systems of education delivery.

In the areas of students competences in integrating ICTs in education delivery literatures shows that students have low competences in ICTs application in deferent percentages which affects academic results. Lecturers on their side are enriched with knowledge about how to use some ICTs programs in education delivery especially in using learning management system where by some of them use it fluently while others prefers traditional teaching methods

Students who accessed ICTs for education delivery are affected by the ICTs cost bandwidth which affects internet speed and power supply. Also Lecturers access ICTs mostly in University or regional centers. Therefore the perception, competences and access in integrating ICTs in education delivery is summaries below in figure one as a conceptual framework of the study.

Figure 1

Conceptual framework (adapted from Knezek,; Cristensen,; Hancock &Shoho (2000)



Methodology

Research Design

The study used Single-holistic case research design. According to Yin (2003), Single-holistic case research design is an appropriate method for investigating particular phenomena within its real time context. In this study, the case was the Institute of Continuing Education (ICE) within the context of the Open University of Tanzania (OUT). Lecturers and students formed units of data analysis.

Sample and Sampling Techniques

A total of 20 lecturers from ICE in Dar es Salaam and 250 students drawn from 5 Regional centres i.e. Kinondoni (90 students), Ilala (70 students), Temeke (40 students), Morogoro (20 students) and Tanga (30 students) participated in the study. Strategic sampling approach was used to select lecturers and students for the study based on their background in terms of interest to participate in the research, ICT literacy and evidence of having access to some ICT facilities.

Instruments and analysis

Structured questionnaires for lecturers and students were used for data collection. Structured questionnaires were administered by a graduate assistant to 20 lecturers and 250 students in 5 Regional Centres to collect data on perceptions, competences and access to ICTs facilities. Most items in lecturers’ questionnaire were similar to those in students’ lecturers. However, some items were specific to lecturers or students. The graduate assistant’s presence in the Centres helped in providing clarification on some of the items that were in questionnaires that seemed unclear or ambiguous to students. The questionnaires comprised of *yes-no* and *5-point Likert scales*. Open-ended items were also included in the questionnaires.

Data from structured questionnaires were analyzed using SPSS (ver. 17) where descriptive statistics mainly frequencies, means and standard deviation were computed to determine lecturers and student’s perception, competences and access to ICTs.

Findings

Perceptions and Benefits of Integrating ICT in Education Delivery

Lecturers’ perceptions. Lecturers’ perceptions on integration of ICT in education delivery in ICE are presented in Table 1. It is to be noted that generally lecturers are positive to integrate ICT in education delivery in ICE for various reasons such as ICT makes learning more interesting and fun (M = 2.30; SD = 1.30) and that ICT improves presentation of materials (M = 1.80; SD = 0.92) among others.

Table 1

Lecturers’ perceptions on integrating ICTs in education delivery

Lecturers perceptions	Responses (N =20)	
	Means	SD
Using ICT makes education delivery more interesting	2.30	1.30

Using ICT makes education delivery more fun	2.30	1.30
Using ICT improves presentation of materials	1.80	0.92
Using ICT makes education delivery more difficult	3.50	1.08
Using ICT reduces students motivation	3.13	0.80
Using ICT makes teaching more difficult	3.90	0.88
ICT makes the lesson more difficult	4.00	0.00
ICT makes preparation of the lesson more difficult	4.00	0.00
Hardware and software problems often disrupt the learning	1.90	0.32
Using ICT in teaching is very difficult in distance education delivery	4.00	0.00

Note: Scale; 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree. However, findings in Table 1 indicate that lecturers are not in favor of the fact that integrating ICT makes education delivery more difficult (M = 3.50; SD = 1.08), ICT makes more difficult to control the class and ICT makes lesson more difficult (M = 4.00; SD = 0.00). They are also against the claim that ICT makes preparation of lessons more difficult (M = 4.00; SD = 0.00) and that using ICT in teaching in distance education delivery is very difficult (M = 4.00; SD = 0.00).

Benefits of integrating ICTs in education delivery as perceived by lecturers.

Benefits of integrating ICTs in education delivery as perceived by lecturers are reported in Table 2. Findings in Table 2 show that generally lecturers are receptive to integrate ICT in education delivery for various reasons (Means ranging from 1.80 to 4.00).

Table 2

Benefits of integrating ICT in education delivery as perceived by lecturers

Lecturers perceptions	Lecturers (N =20)	
	Means	SD
ICTs can improve my teaching	1.80	0.42
ICTs can influence student achievement	2.30	1.25
ICTs can replace teacher role in the face to face teaching	2.60	0.97
ICTs are very useful in courses implementation	3.00	1.05
ICTs reduce quality of material	3.60	0.52
Using ICTs in the distance education not safe as using other teaching materials	3.60	0.52
It is embarrassing using ICTs in distance learning.	4.00	0.00

Note: Scale; 1= strongly agree, 2= Agree, 3= Neutral and 4= Disagree.

Specifically, findings in Table 2 indicate that lecturers are receptive to integrate ICT in education delivery because ICT can improve teaching ($M = 1.80$; $SD = 0.42$) and that ICT can influence students achievements ($M = 2.30$; $SD = 1.25$). Majority of lecturers are not in favor of the claim that ICTs reduce quality of materials ($M = 3.60$; $SD = 0.52$), using ICT in distance education is not safe as using other teaching materials ($M = 3.60$; $SD = 0.52$) and that it is embarrassing using ICTs in distance learning ($M = 4.00$; $SD = 0.00$).

Students' Perceptions

Students' perceptions about ICT integration were also explored during the research. Findings show that majority of students in 4 (out of 5) Regional Centres (Kinondoni: 88.9%; Ilala 62.5%; Temeke: 63.2% and Morogoro: 68.8%) are very willing to use ICT particularly MOODLE Learning Management System in education delivery in the Institute of Continuing Education. Only 47.1% of students in Tanga Regional Centre indicated to be willing to use MOODLE Learning Management System in education delivery.

Benefits of Integrating ICT in Education Delivery from Students' Perspectives

Benefits of integrating ICT in education delivery from students' perspective were also investigated and findings presented in Table 3. Findings indicate that majority of students feel that there is a very large benefit of integrating ICT in education delivery. According to students, integrating ICT in education delivery helps them to access courses and course outlines regardless of location and time ($M = 1.14$; $SD = 0.35$).

Table 3

Benefits of integrating ICT in education delivery as perceived by students

Benefits	Students (N =250)	
	Mean	SD
Students can access course, assignments, courses outline e.t.c regardless of location and time (flexibility in education).	1.14	0.35
Course delivery is improved and enhanced (efficiency)	1.13	0.50
Enhances students learning (effectiveness)	1.13	0.50
Improvement of students support services	1.26	0.69
Improvement of feedback to students.	1.22	0.44
Improvement of communication and interaction between lecturers and students and among students	1.06	0.50
Education processes can be more adaptable to the learning styles of students	1.45	0.86
Students acquire more responsibility for their learning	1.23	0.53
The relationship between theory and practice is strengthened (e.g. simulation)	1.14	0.35
Learning becomes fun	2.30	0.64

Note: Mean Scale; 1= Very large benefit, 2= Large benefit, 3= Small benefit and 4=No benefit

Particularly, students reported that ICT is beneficial in the various ways such as course delivery is improved and enhanced (M =1.13; SD = 0.50), enhances students learning (M = 1.13; SD = 0.50), improves students support (M = 1.26; SD = 0.69), improves provision of feedback to students from lecturers (M = 1.22; SD = 0.44) and improves communication and interaction between lecturer and students (M =1.06; SD = 0.50).

Also, students expressed that through ICT, they acquire more responsibility for their learning (M = 1.23; SD = 0.53), the relationship between theory and practice is strengthened (M =1.14; SD = 0.35). Also students feel that there is large benefit of using ICT in terms of the following (i) education processes can be more adaptable to their learning styles (M = 1.45; SD = 0.86) and that learning becomes fun (M = 2.30; SD = 0.64).

Competence in Using ICTs

Lecturers’ competence in using ICTs. The other research question investigated lecturers’ competences in using ICTs. Findings presented in the table 4 indicate that generally lecturers are competent in using most of ICTs (Means ranging from 1.00 to 1.20).

Table 4
Lecturers’ competence in using ICTs

Applications	Lecturers (N =20)	
	Mean	SD
Word processors (e.g. word program)	1.00	0.00
Database (e.g. excel program)	1.90	0.32
Presentation program (e.g. power point)	1.00	0.00
E-mail	1.00	0.00
Send a document as an attachment	1.00	0.00
World Wide Web (e.g. Internet explorer) to find education recourses.	1.20	0.42
MOODLE Learning Management System	2.00	0.00

Specifically, lecturers are competent in using program such as word processors (M =1.00; SD = 0.00) and power point presentation (M = 1.00, SD = 0.00). They are also competent in using e-mail (M =1.00, SD = 0.00) and in sending documents as attachment (M = 1.00). However a few lecturers are incompetent in using other ICT applications such as database (M = 1.90; SD = 0.32), www (e.g. Internet explorer) to find education recourses (M = 1.20; SD = 0.42) and MOODLE Learning Management System (M = 2.00; SD = 0.00).

Students’ competence in using ICTs. Findings reported in Table 5 indicate that students are competent in using email (M = 1.26; SD = 0.44), www (e.g. Internet explorer) to find education recourses (M =1.29; SD = 0.46), send a document as

Table 5

Students' competence in using ICTs

Applications	Students(N =250)	
	Mean	SD
Word processors (e.g. word program)	1.37	0.48
Database (e.g. excel program)	1.48	0.50
Presentation program (e.g. power point)	1.54	0.50
E-mail	1.26	0.44
Send a document as an attachment	1.32	0.47
World Wide Web (e.g. Internet explorer) to find education recourses.	1.29	0.46
MOODLE Learning Management System	2.00	0.00

Note: Mean Scale; 1= Yes, 2= No

attachment (M= 1.32; SD = 0.47), Word processors (M = 1.37; SD = 0.48) and database (M = 1.48; SD = 0.50). Only less than a half of students are competent in using presentation program (e.g. power point) (M = 1.54; SD = 0.50) and none of the students is competent in using MOODLE Learning Management System (M = 2.00; SD = 0.00).

Access to ICTs

Lecturers' and students access to ICTs. Lecturers and students access to ICTs was also investigated and findings presented in Table 6. It is clear from Table 6 that majority of lecturers do have access to ICTs (Means ranging from 1.00 – 1.20). Specifically, lecturers access ICTs in their offices at the university (M = 1.00; SD = 0.00), in the university library (M = 1.20; SD = 0.42), at internet café (M = 1.20; SD = 0.42) and at home (M = 1.20; SD = 0.42).

Table 6

Places where lecturers and students normally access ICTs

Access to ICT facilities	Lecturers (N=20)		Students (N=250)	
	Mean	SD	Mean	SD
In the office at the Open University/At working places	1.00	0.00	1.54	0.50
In the library of the Open University	1.20	0.42	1.38	0.49
At Internet café	1.20	0.42	1.36	0.48
At home	1.20	0.42	1.46	0.50
At the regional centre offices	1.80	0.42	1.57	0.50

Note: Mean Scale; 1= Yes, 2= No

Also, findings show that students do have access to ICTs as well. According to students, they do access ICTs at different places such as at the university library (M = 1.38; SD = 0.49), at internet café and at home (M = 1.36; SD = 0.48) and at home (M = 1.46; SD = 0.50).

Conclusions and Discussion

The study reported in this study aimed to investigate opportunities and challenges for integrating ICTs in education delivery in the Institute of Continuing Education (ICE) at the Open University of Tanzania (OUT). Findings have shown that there are a number of opportunities and challenges around successful integration of ICTs in education delivery in ICE. One of the opportunities is that lecturers and students have positive perceptions about integrating ICTs in education delivery in ICE. According to lecturers, integrating ICTs makes their courses more interesting, fun and improve presentation of materials. Also lecturers indicate that integration of ICTs increases students' motivation which enhances students' achievements. According to Rogers (1995), Watson (1998) and Woodrow (1992) lecturers' positive attitudes toward integration of ICT is an important opportunity for successful integration of ICT in education. On the part of students, findings have revealed that integration of ICT in education helps them to communicate with lecturers and among themselves, enable prompt feedback from lecturers and increase their level of engagement in distance education as reported in Keengwe (2007).

Another opportunity for ICTs integration in ICE is that both lecturers and students are competent in some basic ICT applications such as Microsoft word processor, e-mail, sending document as attachment and World Wide Web. Related findings were also reported in previous study by Nihuka (2011) and Buabeng-Andoh (2012). Therefore the opportunity of being competent in some ICTs applications make it possible to think about integrating ICTs in education delivery in ICE.

Another opportunity is the fact that lecturers and students do access ICT infrastructures in various places. Findings indicate that lecturers and students do access ICTs facilities such as computer, internet / intranet, DVD and CD at the university library at headquarter of the Open University of Tanzania, internet cafes and at their homes. Similar findings have been reported in previous studies by Nihuka (2011), Aguti and Fraser (2006), Bates (1994), Horn (2000) and Meyer – Peyton (2000).

Despite opportunities, several challenges have been identified that can constrain successful integration of ICTs in ICE, which include lack of ICT pedagogical knowledge among lecturers, lack of institute-based technical support for lecturers and students, inadequate ICTs infrastructure and lack of access to some ICTs infrastructure. On the challenge of lack of pedagogical knowledge, findings have shown that majority of lecturers are incompetent in using ICTs such as MOODLE Learning Management System pedagogically. Although the Open University of Tanzania has done several efforts to integrate MOODLE as a Learning Management System (Bakari, 2009), findings indicate that majority of lecturers are not competent in using the system. This challenge is not unique to Open University of Tanzania because it is also reported from elsewhere (see for example Hoven, 2000; Kirkwood & Price, 2005 and Smart & Cappel, 2006). This indicates that training of lecturers on pedagogical use of ICTs is critical to make ICT integration in education delivery in ICE successful.

Another reported challenge was lack of technical support on how to integrate ICTs in education for both lecturers and students. On the part of lecturers, they indicated they require technical support when designing ICT-based courses, how to put / make courses available in MOODLE so as to enable students' access materials online among others. Students too require technical support when integrating ICT in education delivery as reported in Nihuka (2011) and Albirini, (2006). According to Yang (2008), Teo and Leo (1998), lack of technical support for lecturers and students is among critical challenges for successful integration of ICT in education delivery. In addition, inadequate ICTs infrastructure is another challenge for successful integration of ICTs in ICE.

It is concluded that despite challenges, the available opportunities make it feasible for ICE to integrate ICTs education delivery in Open and Distance Learning at the Open University of Tanzania. It is recommended therefore that further research should be designed to investigate experiences of lecturers and students on innovate ICT integration in education delivery in Open and Distance Education at the Open University of Tanzania. This kind of study can only be possible after some lecturers have been trained and supported on how to transform their print –based courses into ICT-based courses for delivery using particular ICT such as MOODLE Learning Management System.

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Open Education Resources (OERs) for National Development in Tanzania

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Abstract: *This paper focuses on how Open Education Resources (OERs) can be harnessed for the development of Tanzania. Perception of development in the context of this paper refers to the meaningful, relevant and forward strides towards citizens and national empowerment through critical awareness and utilization of 'free' educational information. The authors caution that free education information obtainable through OERs is provided with expectation that it will be customized to suit local needs and interests. Taking cognizance of the preceding the authors discuss opportunities and challenges ensuing from employing OERs. Before discussing the above aspects, the authors take the opportunity to trace the genesis of OERs as a concept and a movement originating from the Open Course Ware developed at the Massachusetts Institute of Technology (MIT) and adapted at the 2002 UNESCO Forum on the Impact of Open Course Ware for Higher Education Institutions in Developing Countries. The authors present OERs as signifying free education information that cuts across a variety of fields including agriculture, education, medicine, industry, engineering, etc. Such educational information is disseminated through online sites as well as through the common media such as the print and CD-ROMs. From this perspective OERs include not only free education information but also the tools employed to develop, design, store, retrieve, disseminate, update, and exchange/share educational information.*

Introduction

Acknowledging that OERs are more recent development within the field of open and distance learning (ODL), this paper presents the conceptualization of OERs and analyses contributions that OERs can make towards sustainable development of Tanzania. While recognizing the potentials of OERs for social, economic, political and technological development the paper identifies and critically analyses some of the possible challenges that OERs can present. Caution is made against the possibility of postponements of thinking and disempowerment which may result from mere consumption of OERs without contributing to their creation, development and re-creation. Some champions of OERs are highlighted and urged to expand awareness and

knowledge about OERs to all stakeholders to ensure harnessing OERs for the development of Tanzania and the rest of the world. Finally, various ways of addressing the challenges and ultimately maximising the benefits of OERs are proffered in the form of conclusion and way forward.

Conceptualizing Open Educational Resources (OERS)

Open Educational Resources (OERs) is a recent concept in the field of education especially in ODL. At the beginning the definition focused on the description of educational content for teaching and learning; education resources that are openly and freely provided through Information and communication Technology (ICT) (UNESCO, 2002). However, the concept has expanded to include the tools that are used to create content such as the software tools used to develop, store, retrieve, update, and disseminate/tribute content; as well as implementation resources such as 'Creative Commons Licenses' (William and Flora Hewlett Foundation, 2008, OECD, 2007).

The concept of OER also involves considerations of philosophy of education as a public/ common good. Commonness in this case emphasizes massification or democratisation of education. OERs therefore, are open and free to people, content, places, methods, ideas and tools. The guiding principles of OERs are non-commercial and non-monopolistic in line with open licenses such as creative common licenses.

OERs can be accessed at no cost or payment of minimal production cost. Most of the OERs are developed through collaborative efforts made by networks of experts. Users can adopt, adapt, mix, remix and redistribute according to the agreement expressed under the 'creative commons licenses'. They can also share in the creation and re-creation of the courseware, contents, courses or programmes through avenues of sharing experiences and expertise governed by the respective 'creative commons license'.

Based on the explanations above, open educational resources may be conceived as repositories of open courseware, contents, courses and programmes that are freely and openly available for use and re-use by anyone for educational purposes. OERs may be course modules, lectures, notes, text books, journal articles, manuals, study guides, theaters arts, libraries, artifacts, homework assignments, quizzes, laboratory and classroom activities, games, syllabi or simulations and visual reality. OERs provide educational information that cuts across a variety of fields including agriculture, education, medicine, industry, etc. Such educational information is disseminated through online sites as well as through the common media such as the print, CD-ROMs, artifacts and performing arts.

The OERs Movement

Worth noting is that OERs are both a concept and a movement. The OERs movement is increasingly growing in terms of support and forms ranging from courseware development, content, programmes to OERs University and consortia.

The OERs movement originated from the Open Course Ware developed at the Massachusetts Institute of Technology (MIT) in the 1990s and was adapted at the 2002 UNESCO Forum on the Impact of Open Course Ware for Higher Education Institutions in Developing Countries. It was at the UNESCO forum where the concept/term Open Education Resources (OERs) was coined. The forum acknowledged the potentials of the initiative and defined OERs as: “the open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for noncommercial purposes” (UNESCO 2002).

As the OERs movement grew over time the concept of OERs has been expanding to include the tools used in development, designing, production and distribution. By 2008 the William and Flora Hewlett Foundation, which constitute the primary champion in the movement, has redefined OERs as the teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials or techniques used to support access to knowledge (D'Antoni, 2009).

A meeting in 2007 in Cape Town resulted in the Cape Town Open Education Declaration, which situated OERs in the broader context of open education:

...open education is not limited to just open educational resources. It also draws upon open technologies that facilitate collaborative, flexible learning and the open sharing of teaching practices that empower educators to benefit from the best ideas of their colleagues. It may also grow to include new approaches to assessment, accreditation and collaborative learning. (Cape Town Open Education Declaration, 2008)

The most recent initiative in the OERs movement is the development of the OER University (OERu). This “new initiative [is] designed to provide opportunities for the informal OER learners to gain formal academic credit for their learning using high quality OER designed for independent study and distance education delivery methods” (Wikieducator 2011). The champions of this movement contend that the OER University will widen access to high quality informal learning using a combination of Open Education Resources (OER) and the open web; as well as provide flexible pathways for learners to achieve formal credit and qualifications (Wikieducator, 2011).

Potentials of OERs for the Development of Tanzania

The potentials of OERs for the development of Tanzania have to be located within the ambiances of the role of education in development. As an educational initiative OERs have the potential to widen access to knowledge and education; bridging the gap between formal, informal and non-formal learning (OECD report, 2007; Susan D'Antoni, 2009); promote lifelong learning; prepare workers to cope with the ever

changing demands of contemporary workplaces; strengthen the education system by creating avenues for sharing knowledge, skill and values; encouraging multidisciplinary and avoidance of duplication of work (avoiding reinventing the wheel); supporting triangulation of knowledge, skills and values (i.e., crosschecking viability, consistency and applicability of existing knowledge); and enhancing positive competitions. OERs also encourage learner-centred teaching and learning as well as contribute significantly towards poverty alleviation. The following discussion elaborates on each potential highlighted in the preceding narrative.

Widening Access to Knowledge and Education

Taking advantage of developments in information technology, through OERs many learners can be reached from the same or similar resources with an added value of being free to adapt the resources to the learner's context.

Bridging the Gap between Formal, Informal and Non-Formal Learning

OERs can assist governments in bridging the gap between formal, informal and non-formal learning (OECD Report, 2007). Accessing OERs can assist not only in expanding avenues for getting requisite educational qualifications for the formalized system but also breaking the myth that education can be obtained only through schooling hence expanding the horizon for those who have missed out in the schooling system. A similar idea has also been expressed by the 'champions' of OER university in 2010 who contended that OER university can create avenue for '*Implementing flexible pathways to achieve formal credits and qualifications*'.

Promote Lifelong Learning

OERs provide wider choices and flexible space for lifelong learning because they expand access to a variety of learning resources and reduce dependency on traditional books and physical libraries. Using multimedia approach to teaching and learning, OERs can take education to the door-steps of people with diverse abilities, interests and opportunities to learn. People with disabilities, inflexible social or economic responsibilities, the elderly and those living in remote areas can access education through OERs.

Potential to Create Knowledgeable Societies

Through enabling many people to acquire the knowledge and skills they require to take advantage of available opportunities for progress in their society OERs can contribute significantly towards building a knowledgeable society which is required by the contemporary knowledge-based economy. Participation in preparations, creation, production and use of OERs therefore, can assist Tanzania to reach a competitive position in the global knowledge-based economy.

Prepare more People to Cope with the ever Changing Demands of Contemporary Workplaces.

If additional knowledge, skills or competences are required, workers can be trained using OERs at reduced cost and without moving from their work place. This is a win-win situation for both employers and the employees. In most cases, the workers learning through OERs will use the learned knowledge and skills to improve their performance at work. Moreover, employers and employees can customize the resources to their specific needs with fewer worries regarding breaching copyrights regulations.

Potential to Strengthen the Education System

- (i) The quality of teaching in traditional institutions can be improved as teachers and lecturers share best practices, models and techniques through OERs
- (ii) OERs can support the formal education system in providing quality education. Employing distance education methods primary and secondary school teachers can be trained or developed professionally without displacing them from their respective schools. For example, the diploma in primary education programme (DPTE) offered through the Open University of Tanzania has integrated OER materials that were, originally, produced by the Teacher Education in Sub-Saharan Africa (TESSA) in some of its courses. The recent monitoring and evaluation study of the first cohort of DPTE students (Muganda et. al. 2010) revealed that most of the DPTE participants have adapted activity-based teaching and learning approaches in their teaching practices. The approaches have been promoted through the TESSA OER materials.
- (iii) OERs can also boost the public image of education institutions. When OERs gain worldwide usage, participating institutions get to be popularized across the world; hence their markets expand. OERs further provide opportunities for academics and researchers to share knowledge, experiences and expertise. This, in turn, can result into improved quality of education and research as well as increased reputation of the participating academics and researchers.
- (iv) OERs can be used as one of the cost-recovery mechanisms for educational institutions. OERs reduce the cost of teaching and learning resources because sharing of resources and development of content can trim down some of the costs. When experts and institutions collaborate in developing OERs they not only get the best brains together but also avoid duplication of efforts. Once the resources are in place, there is no need for other experts and users to 're-vent the wheel' but to adapt the resources to suit their context or improve upon the original resources.

Encourages Learner-Centred Teaching and Learning Through inbuilt mechanisms of use, adapt, repurpose and share that are embedded in respective creative commons licenses, OERs increase opportunities for interactivity and engagement with the educational resources. Such processes reduce the sense of isolation and motivate learners to learn.

- (i) OER also empowers the learner to participate in the arrangement of his/her learning process thus expanding chances of independent learning. The student is able to choose when to focus on specific learning materials. She/he can also choose how to access the materials – print it out, download on a flash or CD, use a CD-ROM, scan or photocopy.

(ii) OERs enhance collaborative teaching and learning – OERs encourage interaction and cooperation among students, teachers, and experts regardless of where they are located across the world.

OERs’ Potential to Contribute Towards Poverty Alleviation and Sustainable Development

In developing societies such as Tanzania poverty is the main barrier to equity in education and sustainable development. OERs have the potential to contribute significantly towards poverty alleviation and sustainable development because they can provide education that is relevant, timely and with less opportunity cost.

Access to OERs can assist people to make choices to learn what they need for immediate use; hence gain knowledge, skills and competencies which can assist them to transform natural endowments into wealth. In other words, OERs can provide opportunity for accessing educational content that is relevant to the livelihood of the learner. In this regard, OERs can become one of the viable interventions in the poverty alleviation processes.

OERs can close educational gap by providing a second opportunity to those who missed out in the common schooling system. Through the philosophy of open learning that is embedded in OERs more individuals can be reached out including those who would have been left out because of the constrained school environments. OERs can reduce some of the educational cost including the cost of learning materials. In that regard, OERs can provide chance for those who are normally educationally at risk to be integrated into the society for development.

Challenges

Despite the opportunities that have been discussed in the preceding part of this paper, it is important to note that there are several challenges that are encountered as the nation attempts to engage OERs in its education agenda. These challenges are discussed in this part of the paper and the authors expect that exposure of the challenges will positively inform OERs users, researchers and policy makers to make appropriate decisions as they make pertinent choices of what OERs are within the Tanzanian context and how appropriately OERs imported from contexts other than Tanzania should be adapted. The challenges presented here will also inform the decision to develop Tanzania’s own OERs for national and global utilization.

According to D’Antoni (2009) challenges associated to OERs can be categorized into five groups: (i) technical (infrastructure including limited (or lack of) broadband access), (ii) economic (including inadequate resources to invest in necessary software and hard ware), (iii) social (including lack of skills needed to use technology), (iv) policy-oriented (including lack of academic recognition of OERs by teaching staff) and (v) legal (including the time and expense associated with gaining permission to use third part owned copyrighted materials or its removal from material). D’Antoni’s proposed challenges cover a great range of issues some of which surfaced as we

examined our research respondents. Responses from our respondents feature in the areas discussed below.

Postponing Thinking for Writers and Field Experts in Low Developed Countries

One of the major findings of this study was the issue of increased possibilities of encouraging or exacerbating existing situation whereby writers and field experts, in developing countries including Tanzania, postpone their thinking. In a focused group discussion constituting eight (8) members six (6) pointed out that the potential for OERs encouraging the postponement of thinking was “a real and not a superficial challenge or threat”. They argued that the given colonial and neocolonial background against which writers and field experts have been molded provide a fertile ground that perpetuate blind acceptance or uncritical copying of anything emerging from the West. Most, if not all writers/experts, take works from the west as “given” “authentic” “unchallengeable” and therefore naturally acceptable material. When OERs emerge from the West they are taken for granted and even when modifications are made there are chances that the modifications are only superficial, non-reflective and uncritical. Making emphasis on this aspect one respondent said;

Despite that OERs from other countries will assist in making our learners compare and compete with learners from other countries there are major challenges in adopting the OERs. Our writers will be encouraged to drop out from attempts to write their own materials because if they write there will be no one or very few individuals who will buy their materials since there are free materials available through OERs. ... Further, since writers use money in the process, they will be stagnated economically because their books will not be competitive enough to be bought; yet they will have already used the little amount of money they have. On this basis OERs are a set backs to local writers and experts.

Another respondent reacted to the proposition made above by arguing that; Although there are challenges ensuing from using OERs particularly, because some of the examples used in the OERs texts are not from Tanzanian context OERs have a lot of advantages. Financially, people can save some money by using freely available texts. Therefore some of the disadvantages that are identified by the previous respondent may be transformed into advantages.

The later expression indicate varied perspectives in relation to the extent to which OERs stifle local writers and experts, Accordingly OERs are sometimes considered as win-win resources when externally developed OERs are utilized in low developed countries.

Possibility of Extending Imperialism Through OERs

The second major finding was that OERs are potential for extending imperialism. This finding should be considered on the ground that it is through education that individuals, local communities, nations and the global community as a whole are empowered to critically reflect on their lived contexts in order to positively address their problems as a way of solving problems or advancing alternative profitable courses of action. When

education does not lead to gaining this noble goal it fails as a system, following that a new system of education should be invented. A critical reflective perspective of using OERs guide considerations of such issues as OERs developers' intentions and target beneficiaries' gains or loses. This perspective is critical because elsewhere it has been found that when learning (in this case learning through OERs) "local circumstances are seldom used by students to explore learners' or teachers' situations [that is] ... contextualization [of already existing education materials]...is rare" (Mattsson, Johansson & Sandström, 2008, p. 126).

Hence, adopting a critical reflective perspective before making the decision to use OERs will enable users to uncover overt and covert gains or loses that are likely to be incurred in using OERs. When potential users are not competent to make appropriate priority as to what should be adapted, adopted or completely left out we advise that adopting OERs be postponed until such time when users are critically aware and competent enough for a meaningful and gainful engagement in using OERs. The latter approach will address the imperialist tendencies that are feared to accompany OERs use in low developed countries such as Tanzania.

Our preceding arguments are based on two major premises, one is our observation that OERs are meant for a global population; they do not discriminate users since anyone (or group of people) can decide to adopt. This freedom of OERs use was declared at the 2002 UNESCO Meeting where members expressed their hope that open resources consider and "mobilize the whole of the worldwide community [particularly] of educators (UNESCO, 2002). Despite this hope and possibility, most people in the low developed countries are least critically educated and cannot therefore effectively make informed critical exploration to uncover covert meanings in most of the academic readings that feature in form of OERs. Wittingly or unwittingly, education in low developed countries has so far been 'schoolish', and 'bookish' (elitist) leading to rote memorization which is the typical characteristic of the system. Being mostly examination oriented leading to certification and job seeking rather than job creating. The education in low developed nations has not been profitably transferable to actual learners' and instructors' life worlds. Engaging products (learners and majority of instructors) from such an education system in decisions of adopting/adapting (or not) OERs might be a too cumbersome challenge and futile to the development of the very nations that are to be served and liberated from the low development stages that they find themselves in.

Our second pillar for our argument is the fact that most of us are aware that imperialism was not buried with "decolonization;" it is very much alive; it has only changed into a new form commonly referred to globalization (Bendenabende, 2002; Mudimbe-boyi, 2002). To date, we continue to witness a classificatory global system where the poor are getting poorer and the rich are getting richer. Although there are several individuals in the developing countries that are extremely rich the group constitutes a minute fraction of the larger population in such countries.

Our argument in the preceding paragraph has significant implications in the sources of education since education has been used as both a disempowering and an empowering tool (Freire, 1998; hooks 1994; Nyerere, 1966). In cases where education is designed to empower those engaged in its transactions it is situated and it provides avenues for learners and their facilitators to co-create knowledge, skills and values which are meaningfully relevant in addressing their local problems. The focus of the system is not passing examinations but both passing examinations and enabling learners to transfer what is learnt for profitable use at home, at work and in communities. On the other hand, when education is designed for disempowerment, it serves those on power and protects the status quo. This latter form of education is what constitutes the challenge in employing OERs most of which emanate from the developed countries (e.g., Africa produces only about 1% of all the publication and research recorded/available). There are high chances that most of the publications and research contained in OERs has elements of extending western imperialism in form of globalization. In the words of Trouillot (2002) “a world perspective on globalization requires attention to differential temporalities and the uneven spaces they create” (p. xv). Only those who are empowered with critical reflective perspectives can make profitable analysis and adaptation of OERs. This condition calls for building reflective and critical skills among citizens in both low and high developed countries.

Limited (or Lack) of Awareness about OERs among Potential Developers and Users

Our study showed that even if learners and instructors were in a position to critically adapt OERs through contextualizing imported OERs, most of the potential users are not aware of the existence of OERs. Those who are aware exhibited misconstrued perspectives of what constitute OERs. An in-depth interview with three of five respondents from Dar es Salaam region showed that they conceive OERs as online learning, information communication technology (ICT) and free education materials that are available online. They did not consider freely printed and audio educational materials as constituting OERs even though such materials have been developed with that intention.

The extent to which OERs are not familiar was clearly reflected at a gathering of more than 130 university students at the coast region, where only 25 of the students responded that they had access to internet connectivity. Among the 25 only five (5) had some clue of the existence of OERs. The five who were aware of OERs believed that OERs constitute only free education material available online.

The condition of limited awareness of OERs was made more concrete through an academic staff focused group discussion (FGD) session. All eight (8) staff involved in the FGD were not aware of OERs. All said they believed that any materials they could access through the internet were OERs. It was after an extended discussion with the researchers that the respondents could make a distinction between general online materials and int materials that were intentionally developed for use as OERs.

The limited awareness of OERs as expressed through this study implies that most potential users do not have access to OERs information in terms of (i) existence, (ii) benefits of the resources, (iii) how to create OERs resources, and (iv) how to subscribe to spaces where OERs are available as well as how to subscribe into the OERs movement. This condition implies the need for much effort to be exerted to raise awareness of OERs; if they are to be employed in order to achieve the intended outcomes. That is, to assist majority, if not all, people in Tanzania and elsewhere to have access to education information as a way of creating learning societies which are key to social and economic development (UNESCO, 2002; D'Antoni, 2009).

Limited (or lack) of accessibility to OERs

Another finding from our study was the expression by respondents on the limited or even lack of accessibility to OERs due to a variety of factors including among others unsupportive OERs infrastructure; lack of guiding policies; facilities and equipments; limited knowledge, skills and values that are relevant to OERs; and conflicting perspectives on what OERs are.

Champions of OERs and the OERs Movement

For every technical initiative there are champions behind as well as lagers. In the case of OERs there are clear champions that are worth mentioning in our study. Of these are the Massachusetts Institute of Technology (MIT), Teacher Education in Sub-Saharan Africa (TESSA), African Virtual University (AVU), OTTER, COL and UNESCO. Fortunately some Tanzanian institutions, academics and experts in various fields have been part of these movements. For instance, the Open University of Tanzania has participated in the process of developing TESSA, AVU and some of the COL OERs. What is important is to expand these experiences and harness OERs for the development of Tanzania.

Conclusion and Way Forward

We wish to make a few observations as conclusion and propose a way forward for OERs in Tanzania as well in general. Our findings have indicated a majority state of unawareness to OERs in Tanzania. The highly limited awareness in this case is critical since our respondents were purposely picked from institutions of higher learning constituting social members expected to be national think tanks and champions of innovations. If this cadre of the population remains behind in following up innovations or initiating their own, Tanzania will continue to suffer from underdevelopment. However, available literature shows that Tanzania is not alone, which gives a grim picture of continued classes of the global population through OERs as potential imperialist tool if mis-used. D'Antoni (2009) points out that the UNESCO OERs community which came into existence in 2005 had "700 members from 105 Member States, 67 of which are developing countries." The composition of 67 member states from developing world might be overtly an encouraging number because it shows that these states are majority in the group. Our interpretation of this number should

however not evade what observation from the respondents. Great caution needs to be taken lest OERs become another avenue of extending imperialism.

Raising awareness and clarifying meanings of OERs through elaborative and explicit attempts addressing vagueness and ambiguous interpretations at training/ advocacy fora should be a focus of the OERs movement. The researchers support D'Antoni's advance of a way forward that gives priority to OERs "*capacity development*", "*sustainability*", "*quality assurance... and copyright*". In addition to this list of advances the researcher advocate that there should be critical research on OERs in terms of how best they should be developed to avoid negative impact, and create the best opportunity to actually (not cosmetic) address local and global structures of social-economic inequalities. Our major question as we end our paper is whether OERs will assist the world to eliminate human greed which constitutes a major contributing factor to human immorality that has led to inequalities and unequal social classifications.

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A Choice Between the Apprenticeship and Experimental Teaching Practice Models for Distance Learning programmes.

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Abstract: In the teacher education programme the relevance of teaching practice in the effective training of the professional teacher is not in controversy. While two models of teaching practice exists, in the apprenticeship model the involvement of school based supervisor is dominant but in the experimental model their involvement is passive. In view of the peculiarity of distance learning channels of instruction, which of these models is more appropriate? This study describes the modalities of these two models in teaching practice, presents an academic discourse regarding the model that is more appropriate in producing better trained teachers and offer suggestions for further research.

Keywords: apprenticeship model, experimental model, teaching practice, teacher education

Introduction

Teacher Training Through Open and Distance Learning

Teacher education focuses on improving the general educational background of the trainee teachers, increasing their knowledge and understanding of the subjects they are to teach, pedagogy and understanding of children and learning and the development of practical skills and competences (Perraton, 2010). Open universities has provided a mechanism for large-scale programmes of initial teacher training. Some African countries show the possibility of using open and distance learning on a larger scale, to increase teacher education. Tanzania needed an extra 40,000 teachers, whereas the existing teachers' colleges have the capacity to produce 5,000 teachers a year. To make up the shortfall secondary-school leavers were enrolled to be trained on an apprenticeship model, partly on the job and partly through distance education. These

teacher trainees were posted to schools and given a reduced teaching load. They received training through correspondence courses and radio programmes. Their classroom practice was supervised and tested ending with a six-week residential seminar. 38,000 trainees completed the course successfully. Zimbabwe operated a similar programme after independence, recruiting 7,400 trainees to its ZINTEC project, with 80 per cent pass rate: 5920 gained their qualification. Similar projects have continued in other countries, often on a one-off basis. Malawi, also used open and distance learning for teacher training from 1997 to 2004 (Lewin & Stuart 2003; Mulkeen, 2010).

In an organizationally different approach Nigeria set up a single-purpose, distance-education, National Teachers Institute (NTI), which has become a permanent part of the education system. Since its inception in 1976 has been involved both in initial training and in upgrading qualified teachers (Bako & Rumble, 1993; Perraton, 2007). Post-conflict countries have used open and distance learning to overcome teacher shortages. Rwanda, for example, has trained secondary teachers at a distance through the Kigali Institute of Education (Mukamusoni, 2006). As Uganda was coming out of war, it began to experiment with distance education as a way of upgrading serving but untrained teachers. The Northern Integrated Teacher Education Project ran from 1993 to 1997 in northern Uganda where it integrated its distance teaching with the work of ten conventional teachers' colleges where trainees attended two residential courses each year. They attended twice-monthly tutorials and got guidance and support from tutor-counsellors. In contrast with the Nigerian and Tanzanian examples, the programme gave relatively heavy weight to pedagogy, which took up about 40 per cent of the time, with subject matter knowledge taking up most of the other 60 per cent. With 21 percent attrition rate and 75 percent pass rate (Wrightson, 1997; Perraton 2007).

Botswana, Kenya, Malawi, Swaziland and Uganda launched distance-learning projects in the 1960s, with student enrollments usually in the hundreds. Their common aim was to respond to the shortage of primary-school teachers, Targeted at raising the capacity of trainee teachers. Their patterns were similar, using a combination of correspondence teaching, radio programmes and supervision of teaching practice. College teachers visit trainees in their schools and observe them teach in order to guide and strengthen their teaching practice. These projects had high pass rates of between 83 and 97 per cent which in part can be attributed to the promise of a salary increase on successful completion. The projects were usually an one-off activities designed to eliminate untrained teachers from the system. Kenya followed a slightly different approach in basing its programme for unqualified teachers in a correspondence unit at the University of Nairobi and concentrating just on the general education of trainees (Perraton, 2007).

In China, 11 per cent of primary and secondary school teachers were unqualified in 1998 but became qualified through the China Television Teachers' College. Between 1987 and 1999, 717,300 primary teachers gained certificates and 552,000 secondary

teachers gained diplomas. The college made heavy use of satellite television but has moved towards multi-media packages (Zhang & Niu 2007, Perraton 2007). Britain used its Open University as a means of initial teacher training. In 1994, it introduced a postgraduate certificate in education for graduates who wanted to teach in primary or secondary schools by employing computer conferencing and provision of printed materials. The course was school-based and students spent thirteen weeks on teaching practice which was supervised an experienced member the school staff. Examination success rates, and the achievement of qualified teacher status, were in the range 71 to 77 per cent for the first five cohorts (Walker, 2007).

The Concept of Teaching Practice

Teaching practice is that period where the teacher trainee are posted to schools where it is expected of them to put to practice the theories of learning they have learnt, under the supervision of a professionally qualified and more experienced teacher. This exercise provides student teachers with actual teaching experience in the school environment. The student teachers are able to try out the art of teaching as a prelude into the real world of the teaching profession (Kasanda, 1995). It is a form of work-integrated learning, a period of time when students are working in the relevant industry to receive specific in-service training in order to apply theory in practice (Kiggundu & Nayinuli, 2009). Marais and Meier (2004), Perry (2004) and Maphosa, and Shumba (2007) describe teaching practice as an integral component of teacher training a challenging but important part of teacher training. Teaching practice creates a mixture of anticipation, anxiety, excitement and apprehension (Marais & Meier, 2004; Perry, 2004; Manion, Keith, Morrison & Cohen, 2003). Teaching practice provides authentic context where students are exposed to experience the complexities and realities of being teachers and as a result be able to make up their minds on whether they are inn the right profession for them (Kiggundu & Nayinuli, 2009). The South African Norms & Standards for Educators (Republic of South Africa, 2000), states that teaching practice is meant to provide for the authentic context within which student teachers are exposed to experience the complexities and richness of the reality of being a teacher.

Teaching Practice Models

Apprenticeship model. The educational theory of apprenticeship involves the process of learning through physical integration into the practices associated with the trade, such as workplace training. Through observation and developing similar performance to other practitioners, an apprentice will come to understand the duties of the position usually communicated wordlessly. In the process of exposure the trainee gain the acceptance of other practitioners, their peculiar talents and contributions within the field are integrated into the overall practice. The Apprenticeship Perspective can be used to teach procedures and impact skills acquired from practice to students. Where, it can be used to develop professionals in fields that involve increased complexity and innovation for efficient service delivery. Apprenticeship Perspective is rarely formally taught, the concepts communicated through apprenticeship are often practical strategies for achieving goals. Educational theories of apprenticeship often involve the combination of formal and information training in order to develop mental cognition

that represent individual understanding of experiences that frame a person's conceptualization of reality.

Apprenticeship involves the learner within an actual, physical context of practice, working side by side with a more knowledgeable practitioner in order to learn a specific task (Pratt, 1998; Barab & Hay, 2001). Collins, Brown, and Newman (1989) defined apprenticeship as a teaching method utilized by educators to teach students how to solve problems, understand tasks, perform specific tasks, and deal with difficult situations. Barab and Hay, (2001) highlighted that apprenticeship helps the learner to "(1) the development of learning contexts that model proficiency, (2) providing coaching and scaffolding as students become immersed in authentic activities, (3) independent practice so that students gain an appreciation of the use of domain-related principles across multiple contexts" (p. 72).

Hansman, (2001) propounds that apprenticeship involves six phases that spells out the roles of the teacher and the learner: Modeling; Approximating; Fading; Self-directed Learning; and Generalizing. In modeling learners are allowed to observe performance of an activity by experienced members to share the so called "tricks of the trade" with new members . In approximating the learner in private or in non-critical scenarios, begins to mimic the actions of the teacher. Through close guidance and monitoring, the learner gradually gains clearer insights to the teacher's actions. This phase allows the learner some freedom to try activities and lets them take decisions on what to do and how they want to do it. The trainee is there after given the opportunity to reflect on what had been done and compare with what the trainer did. In the fading phase the trainee within the concept he had been taught starts operating in a more detailed manner with more increased capabilities as the experts assistance decreases . The forth phase: Self-directed Learning - The trainee is involved practice within real society, while limiting to the scope of actions in the field that are well-understood. The trainee is performing the actual task on his/her and only seeks assistance when needed from the expert. The fifth and final phase is generalizing where the learner generalizes what has been learned, while applying those skills to multiple scenarios and continuing to grow in ability as he/she practices in the field .

Pratt (1998), outline three key factors for successful development of the apprentice to become a master of the field, the process must be active, social, and authentic. This being the case will lead to the apprentice greater understanding of the field and improved future contributions. The process is considered active when the learner is physically and mentally stimulated within the environment. The trainer allows the learner to be highly involved in the decision making processes and actions to will stimulate the learners curiosity and innovative tendencies. This will help the learner develop competence and competence in practice. On the sociality factor, trainees must allowed to interact constantly with all the relevant persons in the environment in which the trainee functions, in the case of the school system the teaching and support staff as well as the students. These interactions will enable the trainee adjust properly to the system and therefore by more open to contribute to the system. On the factor of

authenticity this is essential to establish of a mental connection between the work of the student in a particular field and the comprehension of the greater public. The trainee should be guide to see himself within the sphere of not only his fellow professional but the society to be served with his/her expertise.

Brandt, Farmer, and Buckmaster (1993) identified three main goals of apprenticeship: to discover what works; to recognize tasks, problems or situations and know how to handle them; and be able to perform at an acceptable level. To discover what works through the guidance provided and the skills learnt from the expert to solve problems and figure out situations on their own. To recognize tasks, problems or situations and know how to handle them, through learning the appropriate practical and theoretical knowledge, in company of other learners and working in a social setting with lifelike scenarios in order to learn a specific task. Be able to perform at an acceptable level at a level that is accepted in the specific industry for which he is trained to function.

In the apprenticeship model of teaching practice the trainee teacher does course work on pedagogy and subject matter for about eight semesters in a university college/school or faculty of education and two six-week teaching practice sessions in primary or secondary schools in between these semesters. While in the Primary or secondary school the teacher trainee is attached to a “school based supervisor” who is a qualified and experienced teacher who guide and mentors the teacher trainee on the art of teaching, first by allowing the trainee watch him/her teach and thereafter supervises the trainee’s application of pedagogy and subject matter proficiency.

Experimental model. The experimental teaching practice model is based on the concept of peer learning. In the teaching practice situation the student teachers as peers collaborate with one another in the business of practice teaching. Peer learning involves students teaching and learning from each other. They share of ideas, knowledge and experiences with emphasizes interdependent learning rather than independent learning (Boud, 2001; Cooper, 2002). These generally informal arrangements have been formalized with the concept of Peer Learning, sometimes referred to as Reciprocal Peer Learning. Peer learning is a ‘two-way reciprocal learning activity’ (Boud *et al.*, 2001, p. 3) in which there is mutual benefit to the individuals involved. The reciprocal nature of the activity is crucial as students do not lord it over each other by virtue of their position in the group as joint partners. Peer learning is bi-directional, it differs from peer tutoring where there is unequal partnership due to the position of responsibility that one hold over others.. Peer learning can be both formal and informal. Formal peer learning occurs when group work or group projects are explicitly scheduled into courses. Informal peer learning occurs implicitly when students discuss lectures, assignments, projects and exams in settings without the directive or influence of the lecturer. The concept of peer learning is not new as it has been used in the structured scientific disciplines of information systems (Chen, 2002; Goode & Teh, 2005; Kjellin & Stenfors, 2003), computer science (Wills, Deremer, McCauley, & Null, 1999), chemistry (Dalgety, Coll, & Jones, 2003) and anatomy (Pandey & Magin, 2003).

Peer Learning involves students working in groups, in pairs or in groups as large as eight to share ideas, experiences and knowledge in order to achieve a mutually agreed purpose (Boud, 2001). Peer assessment and peer feedback are also essentials of the Peer Learning paradigm and students expected to give both formal and informal feedback to their peers (Falchikov, 2001; Keppell, Au, Ma, & Chan, 2006). Peer Learning provides the opportunity to gain feedback from many students, as opposed to only the single tutor as seen in traditional system (Pandey & Magin, 2003). Students can assess the other students' presentations with a pre-agreed design for using these marks as the actual results for all students or in order to enhance performance (Keppell et al. 2006). Peer learning provides the opportunity for socialization, with students working in teams, which inspired Wilkinson (2002) to describe Peer Learning as a social process with educational consequences.

A major benefit of peer learning is that it encourages transfer of skills that students can apply to real-world professional settings. Peer learning also advance lifelong learning and is linked to generic capabilities of teamwork and interpersonal skills that employers place high value (Tan, 2003). The drive of Peer Learning is to move students from the superficial 'surface' learning where students use a lot of learning by heart and reproductive strategies, and connective schemas are not independently formed; to a 'deep' learning, where and students are more preoccupied with the meaning of the concepts and students design their own connective schemas (Hogan, 1999). Hogan (1999) found that the students in their Peer Learning -designed course reported learning about group dynamics, appreciating diversity, autonomous learning and taking responsibility for self-motivation.

Peer learning is not without its challenges, as there is need to consider the context in which it is introduced, the general goals that need to be achieved, the accord between the peer learning strategies and assessment tasks, and the preparation of both staff and students for the enterprise (Boud *et al.*, 2001). The Peer Learning process is an interdependent one, where each student is dependent on the others to improve their own learning. Due to the reciprocal nature of Peer Learning, each student must be an active participant in the process to guarantee the success of the enterprise (Falchikov, 2001). Partners must be careful to abide by the six qualities of peer partnership: voluntary involvement, trust, non-hierarchical status, duration and intensity of the partnership leading to closeness, mutuality and authenticity as identified by (Eisen, 1999)

In the experimental model of teaching practice the trainee teacher does course work on pedagogy and subject matter for about eight semesters in a university college/school or faculty of education and two six-week teaching practice sessions in primary or secondary schools in between these semesters. The teacher trainees are posted to schools as teams who have agreed to work together and have received training on collaboration that is required of them, while a school based supervisor is appointed for the team as a counselor.

Conclusion and Recommendations

The value of teaching practice seems to be accepted without question from any quarters (Johnson, 1994). The system of teaching practice as organized had remained unchanged in the past fifty years (Bullough et al, 2002). In this system the student teacher is assigned a class and also assigned a school based supervisor. In practice the student teacher with a brief guidance from the school based supervisor assumes full responsibilities for classroom instruction and management. This is with the understanding that “the university provides the theory, the school provides the setting and the student-teacher provides the effort to bring them together” (Widen, Mayer-Smith, & Moon, 1998:152). This model places school based supervisors as crucial to the extent of student-teachers learning form the exercise (Wilson at al., 2001).

Bullough et al. (2002) observed that challenges of teaching have dramatically increased, so there is a need to approach student-teacher training differently and to involve alternative models of student field experiences. Bucher et al (2002) emphasized the increasing difficulty and complexity of teaching and the need for collaborative problem solving and capacity building models to address these challenges. Kahne and Westheimer (2000) reiterated that this will give prospective teachers opportunity to develop educational visions and to imagine new possibilities and prepare them for the current challenges. Roth and Tobin (2001) took a position in favour of the experimental model, where they stated that as opposed to the school based teachers and student-teachers conversations in the apprenticeship model, the conversations among the team members in the experimental model are frequent, open and consistent.

In the experimental model the student-teachers have the chance to observe one another teach and do engage in joint analysis of their teaching. This provides valuable opportunities to learn from one another and get better understanding in an atmosphere that supports academic freedom and the scientific method of knowledge acquisition. Feedbacks are less one directional and more conversational addressing mutual interests. Hudson-Ross (2001), states that this model provides enthusiasm, excitement and encouragement for student-teachers to be innovative. According to Anderson and Speck (1998) this model can be likened to team teaching which encourages multiple perspectives, promotes dialogue/increases participation and improves evaluation/feedback.

In view of the forgoing the experimental model of teaching practice is preferred as it holds the potentials to enable collaboration that will provide innovations that is needed to address the present challenges and prepare for future challenges. In particular in distance learning situation it will help reduce the feeling of isolation and help the student-teacher to be socialized through team work and foster communal tendencies and openness to learn from one another.

The writer of this paper recommends that further research be conducted to determine the various strategies that can be adopted to ensure the benefits of the experimental teaching practice model are attained.

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Managing of Financial Resources in the Provision of Secondary School Education to Orphans in Tanzania

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Abstract: This is a research report on the management of the financial support for orphans in secondary school education. Findings indicated availability of various sources of funds for education of orphans although there were variations with regard to the access of financial support amount each orphan gets. Those variations were found to be underpinned by management problems which were caused by non-centralization of the financial sources system. Despite variations, orphans have benefited from available sources of financial support and that have been observed from the increase in percentage in primary school leavers, enrolment in secondary school education as well as graduates at this level of education. The percentage of dropouts for the 5 years consecutively was too small compared to the graduates and therefore insignificant. Effective mobilization of fund for financing orphans and centralization of the sources of financial support are among recommendation put forward for effective management of the orphans' financial support.

The General Context of the Study

An orphan is a child aged between 0 and 18 years who has lost one or all parents. The parents of orphans have gained much recognition recently due to the outbreak of the Acquired immune Deficiency Syndrome (AIDS) which is caused by the virus called HIV. The HIV/AIDS pandemic was reported for the first time in 1981 in the United States of America. However, orphans have been there in the history of man. In this regard, children become orphaned due to the various reasons including wars, accidents, natural disaster, diseases and natural death of parents. In societies, ways of accommodating orphans were presently developed so that the young citizens did not perish as a result of the loss of their parents and indeed to make them useful in the society to take care of children who lost their parents led them to be recognized in

different concepts that are orphanage, children homes, foster parents or adopted children.

Extended family were charged with the responsibility of caring of the adopted children, however, with socio-economic changes, it has increasingly become difficult for many extended families to accommodate these poor children especially where the foster-parents have many children of their own (Mnenge, 1991). This is a threat to many orphans, for it means marginalization in meeting their needs including the basic ones such as education. According to Frankling (1999), education is a right for every human being and the society. Therefore, failure of the society to provide education to people is violation of human right (Hughes, 1997).

These were among strategies set by the Government to ensure equal access for primary schooling. With free primary education automatically many orphans were enrolled into education and that they would be in a good position to be selected to join secondary schools. That being the case, they will need school fees. Learning materials and other basic requirements at secondary schools. Therefore, lack of finance of finance will affect their schooling. Research reveals that financial support is among the factors that affect the child in his/her learning process (Mnenge, 1992). The existing programme do not cater for all needy children including orphans in secondary schools which means that the problems of inequality in secondary school level will entangle in a very near future. It is in this case, access to the funding programs is an important determinant of orphans' survival in secondary education.

The Problem

Contrary to the primary education in Tanzania which is free, other types of education are not free. In light of this, Government policy (URT, 2001) seems not to discriminate orphans and non-orphans' education. The Secondary Education Master Plan (1998-2004) as cited by Omari (1998) indicates among other objectives the Government endeavors the use of adaptation grant to make education more accessible, and to attain equally in rural and urban participation rates.

Yet experience shows that orphans, especially after primary education, fail to cope with schools due to financial problems. The EPSAT (2005) report reveals that 80% of the orphans in Tanzania are able to complete primary education cycle; only 19.4% are able to effectively continue with post primary education. Therefore, reliable financial support is vital if orphans are to pursue post primary education effectively. According to the report, even those orphans who manage to continue with post primary education programs, some get reliable support while some do not. This justifies a need for the study to explore answers to the question: What is the real situation with regard to financing of orphans in post primary education especially at secondary level and semi-professional training? Education of orphans at textual level was not taken into consideration because of the existence of Tanzania Loan Board which to some extent has solved orphans' access toward sources of fund.

Purpose of the Study

The purpose of the study was to investigate sources of funds for orphans in secondary school education and how they access them. Specific objective included (i) Analysis of funding sources for orphans in secondary schools. (ii) Assessment of the extent to which orphans in secondary schools have benefited from the existing financial support programs. (iii) Analysis of the outcomes of orphans' failure to access education funds. Assessment of whether or not there exist variations of financial support system of orphans in public secondary schools.

The Concept of Orphan

A child may lose one or both parents through accidents, suicide, wars, or disease. Children (0-18 years) who lose fathers and mothers at these tender ages are recognized as orphans (Mushi, 2002). The Oxford Advanced Learners Dictionary defines an orphan as a child whose parents are dead. Research findings reveal that orphans are at risk of being denied basic human rights such as food and shelter (Rwiza, 1998), clean and safe water (Jacobson, 2000) and education (Kange, 2003). TACAIDS (2003) explains further that some of them lack proper medical attention and face malnutrition especially when extended family support is inadequate. According to a report on poverty reduction by the president's office, orphans are at high risk of becoming poor by belonging to a vulnerable group.

(URT, 2002). In this case, others in the vulnerable group are the disabled, single parents, the elderly and HIV/AIDS victims.

Orphans and Education

If financially supported to meet their school demands, orphans can perform as well as non-orphans. However, the imposition in schools of fees has had a greater effect on equality in education, affecting the poor (Komba, 1994). Although it has been found out that education benefits the individual more than parents have responsibly to educate their children, education should be left to be a personal issue, namely to poor/disadvantaged parents. On the contrary, education is a constitutional right and every person has the right to education and every citizen shall be free to pursue education in a field of his choice up to the highest level according to his merits and ability (URT, 1998).

Poverty is a major problem which affects education of people. In this case, many people especially in the development countries including Tanzania fail to get education because of financial constraint. According to ILO (1999), about 59% of people in the third world did not have basic education to enable them to live gainfully and therefore face environmental constraints including lack of skills and knowledge essential for self or wage employment. The HIV/AIDS which results into the increase of orphans caused the rate to increase up to 72.3% by the year 2002 (ILO, 2003). To combat the situation, several government laid strategies to ensure that people are getting education to enable them to be liberated that is able to write, numerate and read.

In Tanzania, for example, several measures have been taken that all children in both disadvantaged and advantaged groups get basic education. In this regard, at primary

school level, Government introduced Universal Primary Education (UPE) and declared primary education to be compulsory to every child aged 7-13 years. For effective implementation of the program, the Government declared to abolish schools fees and all mandatory parental contributions so that no child may be denied schooling (URT, 2001).

Government declaration of free primary education was welcomed by many people because for a long time school fees has been an obstacle to schooling among people from poor families. Furthermore, the imposition of school fees brought inadequate and regressive effects affecting the poor when not structures in a progressive manner (Shivji, 1998). Therefore, providing free education is among ways of accommodating those disadvantaged groups of children including orphans and addresses the issue of equity in education provision that is greater fairness in access to schooling. Equity in education is a global issue as it ensures equal access to education for all people in a society which in turn enables them to equally participate in the national development. Proper and efficient financing of education for the these people is among the means to ensure that they get enough and quality education this call and this call for the state to be main player in this tasks (Fravel, 2000). Thus, the financial support given by the state and non-state organs to organs and other needy children in schools is in fact one way of ensuring equality and effectively in the provision of education in the respective schools.

In due regard, reasons for the differences in access to education among different groups have been explained in terms of regional disintegration (Ishumi, 1980), gender (Brock-Utne, 1989) and socio-economic background (Malechela, 1983), Katabaro, 1992). According to Katabaro 1992), Home environment was a significant factor in influencing school achievement with regard to motivation of children of finance and in the case of orphans other constrains could be offset by relief which provide school materials support to the orphans.

Reforms in Education in Tanzania

Katiko (2003) explains that Tanzania has consistently focused its development strategies on combating ignorance, disease and poverty. In this regard, investment in human capital is recognized as central to improving the quality of lives in Tanzania. Thus, since 1995 the government has introduced a series of education reforms (at different level of education through a sector-wide development program in order to address the existing problems in the sector. The challenges facing secondary education sub-sector above all stem from an education system which has been trying to educate a very large number of children from relatively poor households and orphans (Sekiete, 2001).

All along, this has been done within the constraints of a chronic public shortage. Within the education system especially at primary school and secondary level, the most critical problems are related to a constellation of factors that support the quality of teaching and learning process in the classroom. In public primary and secondary

schools, many children learn in crowded, poorly furnished and unfinished classrooms, and often have to share scarce textbooks and many teachers are poorly qualified and poorly deployed, but in any case often are trying to do a good job with a minimum of basic resources (Galabawa, 2003)

The most significant external factor to which the education sector must respond is the severe public and private economic pressure which has resulted from the slow pace of economic development. In this regard, many households with scarce financial resources have to make difficult choices about investing in the education of their children and this situation mainly faces orphans. Over the years enrolment and achievement rates among children coming from poor families and orphans have been declining especially at secondary school level, while non attendance and dropout rates are increasing due to failure to get school fees and other essential educational facilities.

Education for All in Tanzania in Brief Context

Tanzania is part of many international conventions and agreements regarding improving the access to education, equity and quality of education. Since 1995, the Government has initiated a series of policies and reforms in the education sector with the aim of ensuring that all children have equitable access to good quality education at all levels of education. In this regard the Government stresses that poverty, gender, disability; lack of school uniforms, fees and orphanage should not deny the child opportunity to participate in education (MoEC, 1995).

Improvement of the quality of education is the major objective towards provision to all students including orphans. In this regard, the objective of improving educational quality is expected to be met by strengthening three areas. In human Resources, the primary focus is on the in-service professional development of the teacher with complementary efforts focused on head teachers, school committees, and Training College tutors. With regards to teaching and learning resources, in secondary schools, the emphasis is on textbooks and materials, the quality and relevance of the curriculum, and the school environment in order to motivate all students including those from disadvantaged groups to learn effectively. In addition to the input of training and materials outlined above, the quality of education is dependent on the capacities of the society to ensure effective financing of education especially to those from poor families and orphans.

Tanzania Commitments to International Education Targets

The 1990 Jomtien 'World Conference on Education for All' (EFA) was instrumental in identifying internationally agreed targets for the provision of education as a basic human right. Tanzania also is partly to the 2000 Dakar Framework for Action, an international review of educational progress made since Jomtien, and has joined the many nations which have ratified the UN's Convention on the Right of the child. However, it is the universal primary education campaign which remains at the core of Tanzania's determination to achieve EFA. Its principles of access, equity and quality education for all children underpin many of the policies incorporated into this plan for developing primary education. According to appolinary (2005), Tanzania should

indulge efforts to ensure that children of all types are getting primary and secondary education and discrimination in providing this essential commodity is violation of human rights.

Social Class Obstacles that Prevent Orphans From to Easily Access Education

Economy of the people is among major obstacles towards one's success in education. For example, people from poor economic class due to income get problems in accessing education and meeting educational expenses. This situation causes them to fail to complete the education cycle for a given level. The situation is also observed in the public secondary schools whereby 45% of the learners fail to complete secondary education cycle due to poor failure to pay school fees (USD 20) and other school requirement (Appolinary, 2005). Appolinary (2005) continues to narrate that private secondary schools due to high cost only 11.2 % of the students from poor economic class who are sponsored by organizations are available. In the higher learning institutions people from the economically well-of class are well presented. For example, at the University of Dar es Salaam in Tanzania, 64.6% are student from economically well-of class (University of Dar-es Salaam, 2004).

Infrastructure

Poor infrastructures are reported to be social obstacle that prevents some individuals from achieving educational success. For example, students from poor housing cause them to fail to do practical studies and homework (Kanyika, 2006). Students' failure to do home-work causes them to be truancies and other drop-out from schooling by fearing to be punished by teachers. Poor housing is associated with lack of essential learning facilities including light, chairs, tables and conducive environment. It is a fact that a student will not be able to do homework during the night if there is no enough light. Further more, absence of chairs and tables cause private study and writing of homework to be difficult tasks.

About 57.7% of the educational institutions in Tanzania have poor building. Floors and wall are not are plastered, no enough desks, chairs and classrooms a situation which causes students in primary schools to sit on the floor (Haki Elimu, 2005). Furthermore, in some schools there are few toilets a situation which cause students to spend classrooms hours seeking this service out of the school compounds (Mkere,2007). Such situation causes some students to fail to attend class a situation which negatively affects their learning. Generally, poor infrastructure- demotivates students from learning for example, sitting on the floor school uniforms become dirty and they are not able to learn comfortably. This prevents them from achieving educational success.

Methodology

Purposive sampling method was used to decide on the area to conduct a study. In this case, the study was conducted in Bugandika and Kitobo wards which are located in Misenye district Kagera region. Case study design, qualitative and quantitative research approach was effected through the use of research techniques such as interviews, observations and documentary analysis. These research techniques

provided flexibility with regard to data collection a situation which enabled the research to unfold information through triangulation method. The rationale for employing quantitative approach is that the approach does not consume time and therefore much data was collected, analyzed and computed within a short period. Furthermore, it enables the researcher to interpret and analyze data from various instances understudy. According to Marshall and Rossman (1980), quantitative approach reduces data to numerical indices hence leads to generalization. During the study statistical data were computed into the percentages for easy analysis and interpretation. Furthermore, data collected by quantitative research approach are in most cases free from biases.

Generally, the researcher employed both qualitative and quantitative research approaches because both approaches are compatible (Guba & Lincoln, 1998). Thus, according to Schadt (1986), during the study the researchers enjoy the reward from both numbers and (Quantitative) and words (qualitative). Thus the combination of data from interviews and observations and computed percentages, enables the research to draw valid conclusions and put forward researchable issues for further studies. The sample consisted of 55 respondents and Table 1 indicates sample distribution by gender.

Table1

Sample distribution by Gender

N=25

Category of Respondents	Male	%	Female	%	Sampling
Head of schools	3	5.45	2	3.73	No sampling method
Orphans	20	37.7	20	37.7	Purposive and simple random sampling Purposive sampling
MoVET Officials	6	11.11	4	7.44	
Total	29	53.7	28	46.27	

Source: Research Data, 2007

Instruments for data collection

Instruments employed during the study interviews, observation, documentary review which were effected through the use of instruments such as interview question, observations and documentary review schedules. Ethnographic data analysis that pertains specifically to the naming and categorizing of phenomena through case examination of data. (Enon, 1998). In this case, the first step was to transcribe data. Data analysis begins with individual response and responses from different respondents were purposively sorted and grouped to make them coherent with objectives and research questions. Comparison of data was done to identify those similar. This activity

reduced the data into small manageable and analytical packages which was used for data analysis and discussion.

Findings indicated that there were financial sources for orphans which insisted them to pursue post primary education. These included: Families, non Governmental organizations, local government, individual people and the central government. According to the findings, 8 (14.54%) said that relatives funded education of children who lost their parents. They explained that according to culture and tradition of their tribe, when parents die relatives have a task of providing care to the orphans which extends to supporting them in schools.

One respondent (1.8%) from the group of the head of educational institutions explained further that “there are 20 orphans students at muinstitution and 7 students are supported by relatives who pay school fees and other educational costs such as uniforms and learning facilities”. Another head of school elaborated that “some orphans have failed to continue with studies because relatives did not pay school fees and other educational costs for them”. This was confirmed by 5 orphans in education institutions who said that two colleagues dropped from schooling (one in form two and another in form three) because relatives refused to pay school fees for them. In light of this, respondents 10 (18.18%) from the group of orphans criticized relatives sponsorship that was dominated by harassment and that was not effective as well as adequate. One respondent (1.8%) narrated:

All heads of institutions 3(5.45%) challenged this type of sponsorship that creates problems to orphans since most of the orphans’ relatives were not effective in providing 100% financial support to orphans. Findings indicated that the rate of relative sponsorship for example in secondary school diminished from form one to form four. This was revealed from one secondary school, 14 orphans were sponsored by relatives in the year 2004. Therefore orphans under this type of sponsorship decreased as follows: in the year 2005 (Form II), the number was 27, in the in year 2006 (form III), the number was 21 and in the year 2007 (From IV) the number was 19. the head of the education institutions explained this situation occurs mostly to relative sponsors who have extended families. This situation is true because it has been observed that the change in socio-economic changes cause difficulties for many extended families to accommodate these poor children (Mahenge, 1991).

Findings indicates that respondents 19 (34.54) said that sources of funds for education of children in post education training institutions was also from NGOs. Head of education training institutions 3(5.54%) highlighted that there were also 8 NGOs in the study area. One head of school (1.8%) explained that *‘These NGOs provide uniforms, exercise books, text books and few pay tuition fees for orphans’*.

However, they explained that the support is not enough. They elaborated that many NGOs provide support one a year and in most caters were not reliable. One of the respondents cites an example of one NGO which provide 3 exercise books to each

orphans once a year while each students in a year nee a minimum of 15 exercise books. They also cited and example one NGO which provides one pair of the uniform to each orphan per while one student needs two pairs uniform per year.

Ten respondents (18.18%) from the orphans group said that they got financial support from religious firm. They explained further that those religious firms give them items such as soaps and shoes which are important in keeping them in healthy conditions for effective learning. However, one respondent from a group criticize this type of financial support that “I do not like this type of support. They always give us much soap. I don’t like soap but I need money to buy a type of soap or shoes I like. I need money to buy educational material I need”. This respondents indicates that students were not given freedom to choose type of support they needed a situation which caused them not to values the support. (Paisely, 1997).

Despite of the problems with regard to access of education funds, findings indicated that orphans have benefited from the existing financial support services. Documents indicate that in between the year 2000 and 2004, forty five percent of orphans in the study area completed primary education, 42% were enrolled in post primary education program and 31% successfully completed primary education. It was revealed that from the study that in the same year 2% of the orphans in post-primary education programs dies. Similarly, between years 2004 and 2006, 67% of orphans completed primary education and 65.8% pursued post primary education program, 53.4% successfully completed program and 1.5% died before completing training. The above findings apart from being contributed by the increase in the sources of financial support, it was also contributed by proper management of fund a situation which enabled orphans to easily access them. Furthermore, the decrease in the death toll was found to be contributed by the increase in the provision of health serves to orphans especially those who were HIV/AIDS victims.

Findings also indicated that mismanagement of financial support resulted into the variations in orphans with regard of accessing education funds. Forty respondents (72.72%) said that some orphans get financial support from more than one source. One respondent from this argued ‘*...orphans financial support system is not centralized and that causes problems in the identification of the extent each orphan is getting such support*’

Respondent’s argument is valid because centralized system facilities efficiency with regard to movement ethics, in this case, one is able to easily identify financial support status for each targeted persons and re -llocate available funds according to the priority and needs (Kangek, 2005)

It was revealed from the study that variations in the financial support have impact on orphans’ learning. Students 15(27.27%) explained that they were not happy to see their colleagues getting funds from more that one source. One student explained further *that “... is getting financial support from one source...” it is not enough to meet education costs.*

I fail to effectively continue learning”

The respondent explained further that those who are getting financial support from more than one source are able to follow training effectively because they are financially well-off”. Is this case, orphans like students with

Conclusion

In this regard, the government need to lay strategies to enable this group of orphan and other disadvantaged groups are getting quality education to enable them to be gainful in a society. This could be achieved through formulation of good education policy to enable orphans to attend schools effectively. Thus positive way is to provide stable and enough funds to orphans in order to be able to get all basic and educational needs.

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Hopes and Hurdles in the implementation of e-Learning at the Open University of Tanzania

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Abstract: *Although the e-learning has great potentials for ODL, it is associated with many challenges, in access and attitude towards ICT, faculty commitment and attitude toward online facilitation, and improvement of the teaching and learning process. This is a qualitative study, reporting on case studies of OUT students. The study was designed to find out the opportunities and obstacles associated with the move to e-learning at the Open University of Tanzania, so as to finally propose ways of alleviating problems embedded in the e-learning system, which will lead to smooth running of e-learning by the University. The use of student case studies allowed the researchers to follow in depth a single student's academic life in whole academic year, thus discovering and appreciating individual student's moments of hope, difficulty and despair. Using the Pedagogy, Economy and Technology (PET) analysis framework the study concludes that it is the pedagogical hurdles more than economic or even technological hurdles that affect e-learners negatively. The case studies followed in this study point to the conclusion that OUT students are still pessimistic about the e-learning move, thus requiring revisiting e-learning practices and better student support mechanisms to orient the students to e-learning.*

Key words: e-learning, ICT, case study, open and distance learning, Open University of Tanzania

Introduction

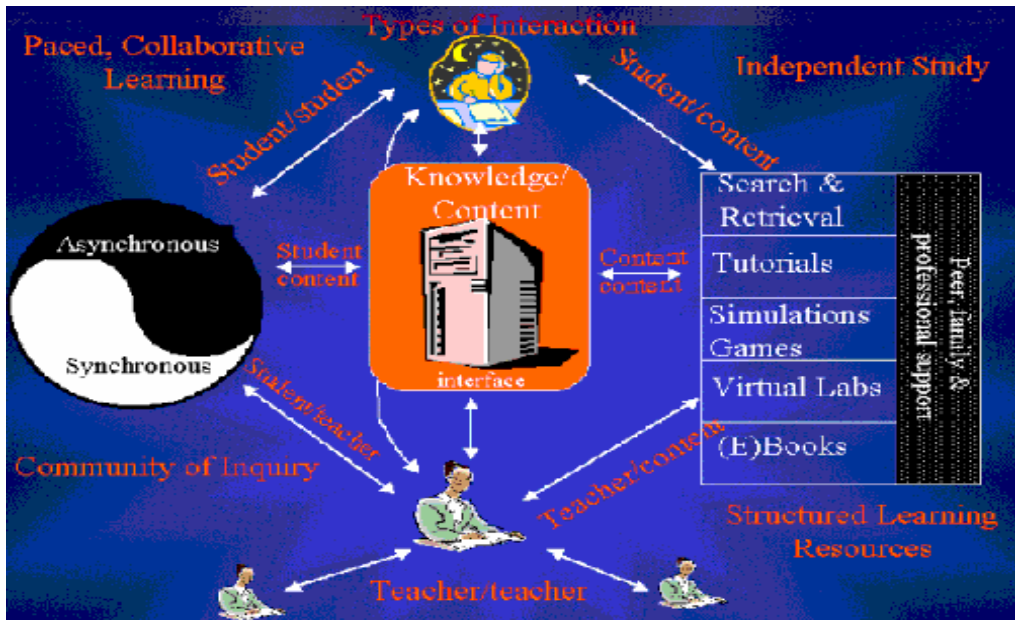
E-learning is increasingly becoming the way forward for many higher education institutions mainly due to limitations of both the conventional campus mode and the traditional distance education. While such modes are suited for any learning and teaching, their effectiveness and efficiency can be somewhat constrained by the fixed time, space and pace limitations of learning and teaching in conventional campus-based classroom settings. Similarly, printed study materials, while they afford transportability, are limited by their inability to capture and carry much else other than text, pictures, and illustrations. Yet, although e-learning has great potentials, it is

associated with many challenges, in access and attitude towards ICT, faculty commitment and attitude toward online facilitation, and improvement of the teaching and learning process. This is a qualitative study, reporting on case studies of OUL students.

The problem and its background

The major advantage of e-learning, according to Anderson (2003) is the possibility of ensuring interaction; which is crucial in deep and crucial learning. Interaction could refer to learner-teacher, learner-learner, learner-interface, learner-content, teacher-teacher, teacher-content, and content-content interaction.

Figure 1
A model of online learning by Anderson (2003)



In the developing world, most advanced form of technology is not a viable medium for most ODL learners. Many live in very remote areas, generally in isolation. Coping with book learning is itself an innovation, says Pityana (2004), and the investment necessary to navigate the computer may become a barrier. There are many more such resentments regarding adoption of e-learning particularly in the African countries. They include the digital divide; which argues that there are global disparities in access to the Internet and other ICTs, which have led to a “digital divide” between technological haves and have-nots (Furuholt and Kristiansen, 2007). The digital divide results from the socio-economic differences between communities, which in turn affects their access to digital information, mainly through the Internet. The digital divide can be categorised as

global, regional or national; and yet at the national level, there is an urban-rural digital divide. African countries are highly affected by this phenomenon. This view is also amplified by the concept of information poverty (Ahmed and Nwagwu, 2006), which asserts that countries are increasingly judged by whether they are information rich or information poor. Unfortunately, African countries are marginalized in terms of ICT infrastructure; hence, development of a new form of poverty called information poverty, within these countries.

There is yet another challenge called computer tragedy (Unwin, 2005). Unwin observes that problems with ICT, particularly computer technology, are deeper than mere limited access. They are due to socio-cultural reasons such that even where the computers are available they usually lie idle to be used only in some special occasions. The African computer tragedy, as Unwin calls the phenomenon, is all about having computer investments in various institutions that are not used for some unjustifiable reasons. This problem, argues Unwin, brings limitations in arguing for the use of modern technologies in African contexts. He registers that use of ICT particularly computer and the internet may not be the solution to education provision. Unwin links media and technology use to a top-down approach whereby computer and the internet are considered to be the solution. He is of the opinion that these technologies end up being underused especially in African institutions.

There is this notion that there is some resistance and reluctance among teachers/instructors in embracing e-learning. The resistance, as observed by Leary and Berge (2006) is due to such excuses as “lack of time and skills needed in adopting new technologies, lack of both formalized reward system and technical support, a concern about the loss of the teacher-student relationship, marketing for programs, financial rewards, maximizing returns on their investment in time and money, and major increases in administrative work” (Leary and Berge, 2006 p.53). While Leary and Berge’s studies were carried out in developed countries, there is no indication that African instructors would not show the resistance, due to even more excuses. A very recent study at OUT (Ng’umbi, 2012) reveals that there is also some resistance among instructors, in adopting mobile phone technologies for academic purposes. The instructors would wish to encourage the use of computer technologies instead.

ODL learners in African countries are typically digital immigrants who are taught by another group of digital immigrants, to use Marc Prensky’s language. ‘Digital natives’, as opposed to digital immigrants is ‘the most useful designation’ that Prensky (2001) found for “our students --- (who) are “native speakers” of the digital language of computers, video games and the Internet”. Hence, those who were not born into the digital world but have taken interest and mastered many or most aspects of the new technology are, referred to as ‘digital Immigrants’. The point is, there is something detrimental with immigrants that cannot be eliminated regardless the effort taken. Immigrants are almost involuntarily forced to think in the original language before attempting to speak in the new one. They definitely cannot hide their accent. The ‘accent’ in the context of e-learning is significant because of the impact it has in the

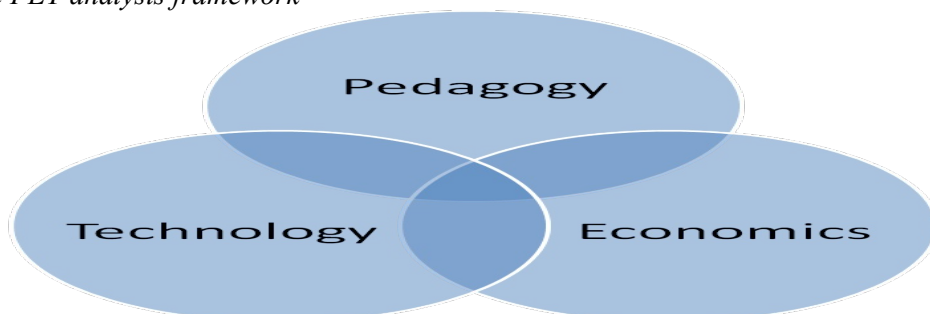
teaching and learning process. Hence; predominance of immigrant learners in ODL, predominance of immigrant instructors in ODL with lots of funny accents but with serious impact on the quality of ODL teaching and learning. The phenomenon has had some consolations recently from some scholars who object the categorisation of learners as digital natives and digital immigrants. A study by JISC (2007), for example, notes that, while use of internet technology, particularly for social networking, is almost ubiquitous among 16-18 year olds, this does not translate into a desire among this group for more technologically-focused approaches to teaching and learning at university. However, the fact remains that e-learning depends on orientation and mastery of ICT, which, unfortunately most African ODL learners will have to struggle on.

To add on the list is the psychosocial factors (Mushi *et al.*, 2011) whereby use of technologies among some people (Mushi's study was conducted among academic staff of an ODL institution) becomes a problem that could best be explained in terms of personal and family and work-related factors. In a way, Mushi's study confirms the complications that are likely to occur due to both the fact of being a computer immigrant (Prensky, 2001) and instructor resistance to e-learning (Leary and Berge, 2006). There are some more other unresolved socio-technological issues (Ng'umbi, 2009) that would add to the excuses not to adopt e-learning because they pose as hurdles. They include the issue of unreliable power source, unreliable and/or unaffordable internet connectivity, and inconvenient educational technologies. The issue of stigma on e-learning has not quite disappeared. Columbaro and Monaghan (2009) suggest that there still may be a marked stigma attached to online degrees throughout the hiring process among various employers. They contend that all scholarly research to date has concluded that the "gatekeepers" have an overall negative perception about online degrees. This was particularly evident at the level of a bachelor's degree for those seeking jobs.

The Conceptual Model

The PET framework (Lomine & Buckingham, 2009) is adopted to guide analysis of the case studies. The model categorizes the factors into pedagogy, technology, and economics. Pedagogy deals with issues such as: what is the pedagogical aim, what are the (intended learning) outcomes? The rationale must be anchored in pedagogy, as opposed to using the available technology just because it exists. Pedagogical considerations also refer to students' demographics ('digital natives' vs 'digital migrants' as well as their learning needs/styles. Technology may not be suitable to all types of students. Economics with such issues such as: What are the cost implications for users – both teachers and students? Some networks provide. Do we consider the cost in acquiring computer and internet connectivity? There is a need also to consider the cost of other contextual limitations like the alternative power source for both the institution and the learners. Technology: The vast majority of learners will still depend on the computer (desktop and laptops) to access e-learning. A few may have good phones and other mobile gadgets. How is the institution prepared to ensure that all these are actually in place and convenient to both instructors and learners? How appropriate will be LMS be?

Figure 2
The PET analysis framework



Methodology

This study used case studies because it was aimed at understanding, from individual students, the psychological and practical implications of the e-learning move at OUT. Conducting research studies is increasingly becoming a more cautious and sophisticated kind of activity that requires regular justification of whatever methodology investigators employ. The use of case study, in particular, has been criticized as having limitations that makes it incapable of leading to generalizing conclusions. One obvious criticism has been of its microscopic nature i.e., reliance on single cases. The microscopic nature does not disappear by simply increasing the number of cases (Yin, 2003). Gone are the days when educational research was synonymous to quantitative studies. Even a single case can be used to generalize results provided it is well designed and analysed and seeks to test theory (Yin, 2003).

Designing case studies that have construct validity is especially problematic because of potential investigator subjectivity. Yin (1994, p.20) identified five components of research design that are important for case studies: a study's questions; its propositions, if any; its unit(s) of analysis; the logic linking data to the propositions; and the criteria for interpreting the findings. While Tellis (1997) sees a little concern on internal validity (except if the study is a causal (explanatory) case), his concern is on external validity. Researchers using case studies can address external validity by using mixed model designs and fuzzy generalisation (Fidler, 2007). The two concepts are not the same. Fuzzy generalisation refers to presentation of a generalisation that offers possible solution to the problem under study – one that is neither likely to be true in every case, nor likely to be untrue in every case. Logically then it is left to the consumer of the research findings to decide the trustworthiness of the findings. Mixed model design (Brannen, 1992; Creswell, 2003) employed in a study can increase the likeliness of the findings to be generalised to a large population.

Participants

This study involved three cases of OUT students. The students were asked and volunteered to be interviewed. They also provided their mobile phone contacts for

further follow up. The respondents were promised confidentiality and particularly anonymity; hence the names as tabulated below are only pseudonyms:

Case	Description of the student	Regional centre
Case 1: Peter	A first year male student from the Faculty of Law	International student
Case 2: Zuhura	A first year from the Faculty of Education	Dar es Salaam
Case 3: Albert	An OUT member of staff participating in the online orientation course	HQ, Dar es Salaam

Yin (1994) presented the concept of a case study protocol that requires investigators to prepare not only the study instruments but also procedures and general rules that should be followed in using the research instruments. He went on to present features of a typical protocol: an overview of the case study project (objectives, issues, topics being investigated); field procedures (credentials and access to sites, sources of information); case study questions (specific questions that the investigator must keep in mind during data collection, and a guide for case study report. A case study protocol for this study was developed. Apart from the general objectives of the study, the protocol outlined the issues to be studied, the questions to be asked and a guide for data analysis.

Data were collected throughout the academic year using phone contact with respondents. There were, however, two face to face interviews. The first was at the beginning of the 2010/11 academic year at the OUT headquarters in Dar es Salaam. All respondents were asked to provide their views on the move announced by OUT to adopt e-learning. They were specifically asked to comment on what they understood by e-learning and to comment on the move, and to explain how they were prepared to cope with e-learning. The second was at the end of the academic year. The informants were believed to have experienced e-learning. They were thus asked to explain their experiences. The study was designed to be explorative and grounded so as to generate deep insights from the informants.

Data analysis of case studies has to abide by the rules of validity. Yin (1994) attempted to demonstrate how case study researchers could ensure high quality of their studies. He presented four principles: show that the analysis relied on all the relevant evidence; include all major rival interpretations in the analysis; address the most significant aspect of the case study; and use the researcher's prior expert knowledge to further the analysis. Yin (1994) further presented two possible analytic strategies. One is relying on theoretical propositions of the study to analyze the evidence based on those propositions. The other is to provide case description which would be a framework for organising the case study and analysis through objectives of the study as a way of organising the study. In this study, case description is used whereby each case is presented before making a cross-case analysis. The main themes regarding hopes and

huddles in e-learning were identified and the organisation of the case study analysis is grounded on the findings, not on literature. The information collected through case studies was analysed mainly through these themes.

The case studies

This section briefly presents the academic lives of the three students, during the 2010–2011 academic year.

Case study 1: Peter. Peter had been an OUT student before joining the university in 2010. He had just completed his Foundation Course and selected for a bachelor's degree in Law. He was a 35 years old young man who worked as a policeman in one of the regions in Tanzania. During the first face to face interview, Peter was clearly worried of the e-learning move. The fact that study materials were be sent to students through the OUT website, that most of communication would have to be through student official emails and that exam registration and exam records would be accessed online, etc., all seemed a barrier to his learning. But all that changed when he was sent to Darfur, Sudan for a peacekeeping mission, just a month after the initial interview. He called to explain that he had changed address and that, now he looked forward to having e-content ready so that he could continue with his studies while outside the country.

By April 2011, the student called and expressed his disappointment that there was no e-content for the respective faculty. *“If they do not upload the content then I will have to postpone my exams this year”* he showed his disappointment. Consultations with the relevant faculty confirmed that the content was still being scanned; and that the student was to use the course outlines which were online to look for some relevant literature wherever he is. During the June/July, 2011, the student was in Dar es Salaam. He was doing his annual exams.

I have been forced to look for some copies of study materials from second year students. I have taken sometime to quickly study a few courses for which I will have to attempt both main tests and annual exams, because I couldn't come for the January session. My fellows who have been here did not experience much trouble in accessing the study materials. They have been borrowing study materials from second and third year students

Case study 2: Zuhura. Like Peter, prior to joining a degree programme at the OUT Zuhura had undergone the Foundation Course. She had been selected to join a bachelor's degree in Education. She worked as a primary teacher in the City of Dar es Salaam. In her late 30's, she had finally found a chance to pursue a degree programme. The move to adopt e-learning was clearly an obstacle to her learning, as she put it, because she could not use a computer although she had already attended a course on computer application. Asked how she was prepared, Zuhura responded that she had bought a new desktop computer and a printer, presumably to download and print the online materials. In April 2011, she was called to report her progress with her studies.

She had done the main test for all the courses she had registered for. She had not received most of study materials. A few that she had managed to get hold of were requested from fellow students, especially those in the second year. There was no e-content as promised, except for the course outlines. She had not unpacked her brand new computer and printer. By July 2011, Zuhura had managed to write exams for all 14 courses she had registered for, although she had done very poorly in five courses. She attributed the failure to lack of materials particularly in Kiswahili courses. She had sold her computer and printer.

There is no need to keep the computer. I still can't use it. There isn't much relevant e-content either. Something like a modern mobile phone would be better than a useless computer.

Case study 3: Albert. Albert is a case study of a different type of OUT learners. He was actually an OUT member of academic staff in the Faculty of Education. He was included in this study because he had registered in the online orientation course offered to academic staff by OUT. For Albert access to computer and to the Internet was not a problem. He had his laptop, with internet connection most of the time. His office desktop had access to the internet as well. The online course offered on the Moodle was a compulsory sort of course. Albert's description of the course was that while most of the course content was relevant to academic staff it was not exactly what he had expected to get from the course. He said what he had expected was a content that enables an ODL instructor to actually do his/her job, i.e., the practical side of ODL facilitation, particularly, online facilitation. Instead, the course had concentrated too much on theory, most of which had already been encountered in the Education programme he had taken previously. According to Albert, there were some more other issues with the orientation course: that while there were more than 100 participants in the course, the participants were not interacting among themselves; they were not interacting with the course instructor either, because the instructor was anonymous! Asked how he and other participants were seeking advice on the course, he responded that in case of problem they had been instructed to contact a computer technician. What was in the LMS was a content that lacked interactive features such as learner activities. Generally, Albert had developed a negative attitude toward the online orientation course.

It is an online course that is supposed to be a model course for ODL practitioners. It is better to attend a one day workshop on e-learning, because you will become a better course instructor; than to participate in the orientation course. You will end up having the obsolete bookish knowledge of concepts, without any practical skills on ODL facilitation.

By July 2011, Albert had not completed the orientation course.

Discussion

A growing body of literature on learning and teaching is suggesting that learning is greatly enhanced when it is anchored or situated in meaningful and authentic problem-

solving activities. This approach to learning and teaching is founded on the principles of learning by doing and experiencing. It places or confronts learners with authentic situations and scenarios which are motivating and which require learners to carry out tasks or solve problems and reflect upon their actions (Naidu, 2006). Readiness by both faculty members and students appears to be doubtful. However, from this study, it is clear that it is the faculty readiness that matters most. It is the faculty that has to develop and manage the e-learning materials. All cases portray the disappointment among students that there was nothing uploaded online except the course outlines. Some faculties were scanning materials to be uploaded. Now the scanned materials may not be the best materials for e-learning since they perpetuate the print-based ODL, despite the fact that the material is presented in LMS. Providers of the course need a better understanding of needs of the learners, the appropriate materials for such learners and incorporation of interactive features in the teaching and learning process. Crucially important is consideration of having in place some “learning by doing” pedagogical designs (Naidu, 2006).

Zuhura’s case is good in understanding the state of mind of students who have to struggle working with computer and the internet. This is not a surprise though. The finding supports literature on the scale and depth of the problem (Mushi *et al.*, 2011, Ng’umbi, 2009; Prensky, 2001). Students like Zuhura have the economic power to purchase computers, printers and other necessary gadgets but they cannot use gadgets. The fact that there is still some difficulty in learning how to use computer by itself is an interesting issue to be followed further. How can one take all the trouble to purchase hardware that cannot be used! In deed one of the interpretations to that could be that the choice of technology is not that convenient to such learners. When Zuhura mentions of selling the computer and buying a good mobile phone she could be pointing to some more convenient technologies. Consistently literature (Ng’umbi, 2012; 2009; Lomine & Buckingham, 2009) has pointed to the possibility of using mobile phones to address the digital divide and host of the psychosocial effects that hinder effective use of computer among digital immigrants.

A general principle to adoption of e-learning is that the costs of e-learning need to be affordable for both the institution and for the learner (Perraton *et al.*, 2002). Results of the study bring a relief that cost is not a hurdle at all. All students involved in this study did not point to cost as an obstacle to the e-learning move. In fact all of them had invested in the necessary hardware such as purchasing desktop computer and printer (Zuhura), and laptop and modem (Albert and Peter). This finding is consistent with the observation made by Lomine and Buckingham (2009) that the cost of technology on the part of students could be minimal, although their observation was based on mobile phones. This study goes further to show the level of preparedness for e-learning among students, in terms of computer and the internet as well.

Conclusion and Recommendations

E-learning has brought both hopes and hurdles among students particularly. The hopes include: more flexibility, opportunity to practice computer skills, and opportunity to

acquire knowledge and skills for better performance. These are basic and realistic expectations in any learning environment. The fact of matter is that these hopes were not met among the participants of the study. There seems to be some setbacks in pursuing the e-learning policy that need to be addressed.

The study has also pointed to some perceived hurdles among students who participated in this study. The hurdles include: pedagogical – learning objectives derived from without the learners, methodologies employed being inappropriate to the learners, and relevance of the course not being so clear among course participants. Particularly with the Orientation programme for OUT staff, this hurdle could be inherent within the notion that the programme is not by choice but rather by design. Although there are no clear indications of hurdles in acquiring the necessary technology, there are serious concerns among participants, particularly the digital immigrants on how to actually develop expertise and confidence in using such technologies. The study points out that there could be some issues with appropriateness of the chosen technology, the computer and internet, especially if other technologies are to be abandoned.

The key finding in this study is that of pedagogical hurdles rather than economic or even technological hurdles. Pedagogical hurdles are barriers inherent in the course design. Plainly speaking, pedagogical hurdles result from poor course planning, designing and development that does not consider the objectives, the experiences and needs of the learners and the methodologies relevant to the learners. While technological and economic hurdles can easily be controlled by the learner, as the case of the three case studies, pedagogical hurdles are actually outside the control of the learner. This is what could lead to despair and withdraw.

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Instructor-student interaction through mobile phones at the Open University of Tanzania

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***Abstract:** Telephoning distance learners has long been found to be positively related to student success. However, the recent mobile phone boom has attracted even more ODL research interest in trying to understand the sort of interaction that can be explored, designed and nurtured so as to improve interactivity in ODL. This study was designed so as to follow mobile phone practices among instructors and students at OUT. The objectives were to explore, analyze and document: instructors' attitudes towards the use of mobile phones for academic purposes; and instructors' opinions on how to improve instructor-students communication. Having interviewed 30 faculty members, majority of interviewees would not prefer to communicate with students through mobile phones. There are some factors that lead to resistance over use of mobile phones, which include additional workload, additional cost, odd time calls, rude and offensive calls and text messages, the beeping behavior, and fear of reaction from spouses of students. It is recommended that OUT consider putting in place a policy on responsible use of mobile technologies.*

Key words: Mobile learning; mobile phones; open and distance learning; interaction

Introduction

A study that was conducted among student teachers of the Licensed Teachers Programme in Tanzania (Ng'umbi, 2009) uncovered a little surprise. The researcher had developed interest on an email respondent who was responding almost instantly to the researcher's emails. The researcher, assuming the respondent would have had an office or home with internet connection, went on to ask the respondent to describe his town and its internet connectivity. The surprise was, the respondent was communicating from a remote rural village that did not even have electricity. People in the village would use car batteries to recharge their phone batteries. He had no computer: he simply used his mobile phone to access the internet that enabled him to read online materials, and to access the internet!

The use of mobile internet should not have been a surprise at all, especially if it was happening in one of the developed countries. In 2001, *The Economist* (cited in Divitini et al, 2002) had already foreseen that in year 2003 the number of internet-capable handsets would exceed the number of PCs with internet browser. In terms of solving the digital divide (Furuholt & Kristiansen, 2007), it is certainly the mobile phone not the PC that is responsible in most parts of Africa. At OUT, learners' access to computer-based internet is as little as 6%. However, the technology that is abundantly available is the mobile phone. Mobile phones are not only accessible to an overwhelming majority of almost 95% of the respondents but also have proven to be one of the possible ways through which learners could access the internet (Ng'umbi, 2009). Mobile phones have become part of everybody's life, including and most conveniently, distance learners. In this article, the author reports on a study carried out among academic staff of the Open University of Tanzania regarding the use of mobile phone for academic purposes. The aim was to explore attitudes (knowledge, beliefs and behavior) on applicability of mobile phones as a means for academic communication between instructors and their students.

The Use of Mobile Phones in Teaching and Learning

The mobile phone's rapid popularity, particularly in Africa, is something of a social phenomenon. In almost every socio-economic sector, mobile phone has had its significance. In the education sector, m-learning (the use of mobile technologies in teaching/training) has taken various forms, playing a complementary role for student and instructor social interaction, motivation and learning (Zurita & Nussbaum, 2004). It has been found that students view m-learning as an important supplementary role to e-learning and that developing countries that face challenges in designing and developing relevant learning environments have found that mobile technologies are convenient, flexible and cost effective (Motiwalla, 2007).

Table 1

Lomine and Buckingham's typology of possible use of mobile phones

Category	Description	Example of activities
Contact and communication	This is a basic level including all communication that is administrative in nature	Timely information: Reminders of key dates, homework, preparation, deadlines Cancelled/rescheduled classes (or change of room, late arrival etc) Update (on marking, assignments available for collection etc) Overdue library books Contacting students: • Late/missing students Off-site students (e.g. on placement, at workplace, distance learning etc)
Teaching-related	Not direct teaching but provides additional information and	Personalised support Motivational messages sent to students Feedback on lectures, ideas or projects Alerts to check email (with longer message)

	clarifications on or to visit webpages (newsfeed)
	academic issues
Direct teaching	This is a purely academic level of communication that may involve simple to complex programs.
	Interactions: asking questions or sharing views/information (tutor to students, students to tutor, students to students)
	Learning activities (e.g. quiz questions, instructions, even mini theoretical input)
	Tasks for consolidation, suggestions for revision

Lomine and Buckingham (2009) have proposed a typology of possible uses of mobile phones, with three categories: direct teaching; teaching-related; and contact and communication with students. The same categorisation has been adopted to suit the purpose of this study and the purposes of distance learners.

Some Interesting Cases of Use Mobile Phones for Learning Purposes

M-learning has had some very successful initiatives around the world. Using a one lecturer experience of using texting with her students, Horstmanshof (2004) has shown how SMS can effectively be used to support and encourage students to persist in a programme. Horstmanshof simply encouraged her students to communicate with her using text messages and she actively send SMS to her students as a way of encouraging them to participate in various class activities. She acknowledges that initially there was some resistance regarding the use of mobile phones for something as serious as learning at higher education level. However, the informal nature of SMS, according to Horstmanshof, was found to be necessary as it fosters the sense of belonging and student integration in the university community, faculty support, peer-support and classroom comfort.

More mobile phone features could be used to the advantage of teaching and learning. Seppälä and Alamäki (2002) reported of a study that was carried out at the University of Helsinki. The idea of the project was to enhance communication between supervisors and trainee students, and discussing and sharing their ideas about teaching methods through mobile device and also use SMS-messaging and digital pictures as a part of supervising process. The use of digital pictures which were delivered via mobile device came up to be surprisingly successful. The goal was to create flexible teaching solutions, which would enable accessing of information with all kinds of devices, and to support learning in a variety of situations. Similarly, the University of Wolverhampton invested in a large-scale scheme that used bulk SMS texting to enhance student support, inclusion and retention (Riordan & Traxler, 2005).

The Text2Teach project in Philippines (Natividad, 2009) is just another successful initiative. The Text2Teach idea was further implemented by Hagos. Hagos' (2008) developed mathematics lectures in SMS format and aimed to find out the engineering students' assessment of the lecture-texts. It is reported that the research found out that the lecture-texts were a valuable tool in filling in the students' time into learning opportunities when the teacher is late or absent from class. The research also found out

that the engineering students assessed the lecture-texts' illustrations, contents, ability to promote self-learning, ease of use, self-pacing and flexibility as very satisfactory.

The BridgeIT project in Tanzania is another mobile phone project that was implemented as from September 2007. The International Youth Foundation and the Tanzania Ministry of Education and Vocational Training launched BridgeIT Tanzania, in close partnership with the Forum for African Women Educationalists, Nokia, Nokia Siemens Networks, and the Pearson Foundation. The BridgeIT project in Tanzania was a replication of the text2teach project in Philippines. Teachers order video content through their mobile phone, which is downloaded directly to the classroom, where students and teachers view the videos. The project allowed remote schools and communities to access a vast range of educational video content to enhance the learning content that children receive through textbooks and classroom resources.

At OUT attempts to deploy m-learning have been explored through a pilot project to student teachers who were involved in the Licensed Teachers Programme (2007-2009) (Bakari, n.d). The pilot project was designed in collaboration with the Ministry of Education and Vocational Training (MoEVT) of Tanzania, University of Dar es Salaam, and Mid Sweden University; to address the then observed “communication breakdown problem after face-to-face sessions between students and OUT lecturers, accessibility problems, power problems, bandwidth /Internet infrastructure problems, affordability problems, low availability of PC's, and limited knowledge how to operate PC's and computer networks”.

Despite a seemingly very potential area of research in the realm of educational technology, there is scant literature on the perceptions of academic staff on the use of mobile phones for academic purposes. For instance, while it is the OUT policy for staff to provide contacts to their students, it is not known to what extent the staff are playing an active role in communicating with their learners. The objective of this research therefore was to study attitudes of members of academic staff at the Open University of Tanzania, on the use of mobile phones for academic purposes. Specifically, the study sought to explore the instructors' attitudes towards use of mobile phones; their perceptions on suitability of mobile phones for academic purposes; their actual use of mobile phones for communication with their students; and their opinion on the way forward for adopting mobile phone technology for academic purposes.

Methodology

For constructivist educational research, truth is taken to be “a matter of consensus among informed and sophisticated constructors, not correspondence with an objective reality” (Guba and Lincoln, 1989, p.44). This kind of research encourages researchers to look at context as a dynamic whole, including individual and socio-historical backgrounds (Duffy and Cunningham, 1996). Obviously this is a sharp contrast to the traditional objectivist perspective that views context as separate from the researcher and in which the context is actually manipulated. Qualitative research (the paradigm for constructivists) is credited for its ability to allow the cognitive and affective

components to be explored in greater depth than quantitative methodologies. It encourages the informant to introduce concepts of importance from the emic (cultural-specific) aspect rather than adhering to subject areas that have been pre-determined by the researcher.

The study was conducted among OUT academic staff at the headquarters in Dar es Salaam, in March 2012. A stratified random sample of 30 staff was interviewed using a semi-structured interview schedule. Of the total sample, 6 were female respondents. The use of a semi-structured instrument allowed the researcher a chance to systematically collect data on identified issues while at the sometime allowing the respondents to explain and clarify the issues. As such, in the analysis of data has been possible to both quantify the data and reorganize the main themes. The strata from which the samples were drawn were substantive posts of the respondents which were:

Table 2

Sample size

Substantive post	Number
Professor	0
Associate professor	2
Senior lecturer	4
Lecturer	8
Assistant lecturer	12
Tutorial assistant	4
Total	30

As a qualitative study, the interest was on getting perspectives of academic staff from various levels as far as teacher-student communication is concerned. The interview instrument covered four main areas, namely: 1) Readiness for communication with students and hence the questions asked were on the preferred communication means, feelings over having to receive calls or text messages from students, willingness to initiate communication, perceptions on having to incurring own resources, innovativeness in communicating with students more effectively. 2) Instructors' reaction to communication habits, which included questions on reaction to beeping, reaction to calls made at odd times, and reaction to rude or offensive calls/texts. 3) Use of mobile phone communication for academic purposes (magnitude of calls and texts, how academic, and how to make them more academic). 4) Opinion on how to improve mobile phone communication with students (whether OUT can have simple rules in place; and hence the rules, if any).

Findings

This section reports the key findings of the study. The study's central focus was instructors' attitude towards the use mobile phones for teaching and teaching-related purposes. The starting point therefore was to probe on instructors' preference for use of mobile phones for communication with their students.

Attitudes Towards Communication with Students Through Mobile Phones

As shown on the responses from different respondents, most of them, (67%), would not prefer using mobile phones. They would instead wish to communicate with their students through e-mails. However, probed further to clarify how they felt having to respond to calls made by students, over half of the respondents (53%) replied that they felt 'happy' talking to the caller, while 27% felt 'normal' as they would feel talking to any other caller. However, a considerable group of respondents (17%) said they actually felt 'forced' speaking to student callers.

Table 3

Preferred means of interaction

Means of interaction	% Preferred means
Email	67
Phone calls	20
SMS	13

Usefulness of Mobile Communication Academically

Common issues students talk or write about through their mobile phones, categorized as per Lomine and Buckingham's typology.

Table 4

Issues in the out student calls and text messages

Contact and communication	Teaching-related	Direct teaching
<ul style="list-style-type: none"> • Application and registration • Student loans • Study schedules • Asking for a responsible officer • Complaints over some tutors • Change of study programme • Missing study materials • Examination dates • Missing exam records • Asking for recommendations further studies and job applications 	<ul style="list-style-type: none"> • Clarification on subject topics • Clarification on assessments • Supervision of dissertations/theses writing • Progress on reading dissertations /theses 	?

Table 4 is a summary of issues that commonly students report through mobile phones, as analysed from the respondents. Most of the communication is at the level of contact and communication. Most respondents (80%) believed that most of the communication was administrative, but disagreed on whether the communication was really useful academically. While 44% said the communication was very useful, 43% and 13% said the communication was only *somehow useful* and *not useful at all*, respectively. They

went further to suggest ways in which the communication could be academically useful:

Students should be encouraged to raise academic issues with their course instructors; each academic year, course instructors should be made known as well as their mobile phone contacts. Hence students should be advised by the respective course instructors, not by programme coordinator or head of department. As of now, the course instructors are usually not declared. Contacting heads of department or coordinators would mean limiting issues to be of administrative nature.

SMS and phone calls could be used in seeking for clarifications on topics or lectures; help on how to write essays, to fill in portfolios, and to search for references.

Factors Influencing Resistance to Mobile Phone Communication Between Instructors and Students

There are many reasons for the resistance over mobile phones:

Additional workload. Although many respondents seem to receive few calls and text messages from students there was a feeling that they were against the tendency of having to be interrupted by unexpected calls from students. The number of calls per day differs, although most of the respondents (43%) receive 1 to 5 calls a day. It is about the same percentage of respondents that receives 1 to 5 text messages from students. Instructors fear that their workload will be unmanageable if students are allowed to communicate with them through mobile phones; as was noted during interview with one instructor mentioned that, “We have been discouraging the use of mobile phones because we cannot be reduced into some telephone operators having to constantly respond to students’ calls”.

Additional cost. About 60% incur their own money to call or text their students very often; while 37% incur only sometimes. When asked on how they recovered the cost, a very interesting observation emerged: almost half of the respondents (47%) said while they had actually spent their money on communicating with the students, they never expected to be refunded by the university. About 43% have never recovered the cost, although they would wish to. Only 7% of the respondents have airtime paid for by the university.

Lack of expertise. The research also probed on the instructor’s active role in initiating communication with their students so as to establish their willingness to use mobile technology. Most of them (60%) would initiate communication only ‘sometimes’. Asked whether they have thought of using group emails and group SMS as a way of communicating with students more effectively, most of them showed that they either weren’t aware of or had never used group emails and group SMS to reach many students at a time. In fact only six and five respondents have used group emails and group SMS respectively.

Calls during odd times. Students making phone calls during odd times is an unwelcome behaviour. Findings show that most respondents (93%) would prefer receiving calls from students during work hours, and if a student made a call during odd times, the call would be ignored or the caller would be warned for having made such a call.

Table 5

Reaction to calls made at odd times

Reaction to calls made at odd times	Percentage
Ignore	34
Receive and warn the caller	33
Receive and talk normally	30
Call back and confront the caller	3

The beeping behavior. Another informality of mobile phones is the beeping behaviour, which could be offensive to some call receivers. Respondents agreed that the behavior is annoying, but that there were different reactions to such intentional missed calls.

Table 6

Reaction to beeps

Reaction to beeps	Percentage
Ignore	34
Call and talk normally	33
Call back and warn	27
Send a beep back	3
Send SMS	3

Offensive/rude calls and text messages. Probably the most unwelcome behaviour is that of sending some offensive calls and text messages. There was a significant group of respondents (37%) who acknowledged having been victims of offensive calls and text messages from students. However, most of the respondents (60%) would choose to ignore such texts or calls.

Table 7

Reaction to rude SMS/call

Reaction to rude SMS/call	Percentage
Ignore it	60
Call back to confront the caller	20
Report case to manager	10
Take time to investigate before action	7
Call back and clear the misunderstanding	3
Report case to the police	0

Fear of reaction from students and their spouses. There were cases of fear over reaction from students and particularly their spouses. Several respondents had actually undergone some bitter moments for having phone called or texted a student. The following accounts have the message clear:

(1) The wife of the student received the call and without giving me a chance to explain myself, she poured insults on me. Well, later the student called and apologized.

(2) Sometimes I find incomplete particulars while marking or searching missing academic records. It is when I trouble myself in calling students. One day, I called a student but surprisingly the call was received by her spouse, with very unfriendly and rude responses. It all got me into thinking, “what on earth am I dragging myself into?”

(3) It was during preparation for graduation. The list of prospective graduands was to be cleared. I volunteered to work overtime to ensure that all prospective students’ records were properly kept, mostly by calling the students to explain their status regarding some missing records. I remember it was a Sunday afternoon. I called the student and explained why I had to call her during weekend and how important the student had to provide the missing records if she was to graduate. It all seemed OK; until the following morning when a man showed up and announced, “I need to see the teacher who called my wife yesterday afternoon?” Everyone was puzzled. I was standing right there not sure whether to reveal myself or to run away.

A need for rules of mobile phone communication. Asked whether there was a need to put in place some rules on use of mobile phones, most of the respondents saw the importance of having in place not only some rules but also a comprehensive policy; although two of the respondents objected the idea. Each one of the two had a different reason: one was that there was no need to have rules because student callers are simply callers like any other. ‘If we can’t impose rules on others why should we play double standards to our own students?’ asked the first. The other reason was:

We need no rules because we don’t need to encourage the use of mobile phones. What we actually need is to ban the use of mobile phones. Let our students use emails and Moodle discussion forums. Let each course instructor have course group e-mail to assist students. I totally disagree with the use of mobile phones.

Suggested rules to be observed by students when they communicate with instructors:

- Specific time for receiving phone calls from students
- Appropriate language
- Limiting calls to academic issues
- Calling the appropriate officer
- Need for calls to be specific
- Not making beeps to instructors

- Not blaming before presentation of concerns
- Need for students to be understanding on the fact that not every issue has to have an immediate solution from the instructor
- Need for students to direct problems to instructors only if they cannot be solved at their regional centres.

Discussion of the Findings

Resistance over the use of mobile phones for academic purposes is not a surprise. In fact, UNESCO (2012) observes that

Negative social attitudes regarding the educational potentials of mobile technology constitute the most immediate barrier to the widespread embrace of mobile learning. Broadly speaking, people tend to view mobile devices (and mobile phones in particular) as portals to entertainment, not education, and, as a result, this technology is regularly dismissed as distracting and disruptive in school settings (pp. 11-12).

Instructors and students at OUT have been having mobile phone interaction without any guiding policy. It is the role of ODL institutions, in particular, and higher education institutions in general to develop policies to embrace mobile technologies.

There are signs of resistance on the part of instructors to receive calls from students although they, the instructors, feel they have the liberty to use their mobile phones to call or text their students when need arises. Evidence shows a paradox that those who resist receiving calls and text messages from students are the leading users of mobile phones when they have some immediate information to pass on to students. The Directorate of Examination Syndicate, for example, has insisted on discouraging the use of mobile phones for students who enquire issues of exam records but they themselves use mobile phones extensively to communicate particularly during examination periods. They text invigilators to notify on amendments in exam papers, send passwords for downloading exams, and even send exam questions to exam rooms through mobile phones. This is a remarkable testimony of the role of mobile phones in the academic arena.

There exists a top-down mentality (Unwin, 2005) on the use of mobile phones. While the instructors think they have the right to interact through mobile phones they discourage use of the same among students. The tendency to insist on students' use of emails tends to present a communication barrier because of the internet limitations in the country. The readily available technology which every student can afford is the mobile phone.

Resistance, reluctance and excuses on the use of mobile phones are a result of lack of institutional policy to guide the practices. Although there are cases of irresponsible use of mobile phones among students, that cannot justify banning the use of mobile phones at higher education levels, in an ODL institution. In fact, a ban will deprive OUT or any other ODL institution, of an essential interaction medium of delivery, which other ODL institutions are rapidly embracing. It is worth noting that distance learners are constantly and desperately searching for what is referred to as 'collective affiliation'

(Kember, 1995); and when they do so they seek to get integrated into the life of a training institution. As most of them are new to the ODL mode of education they usually develop a feeling of isolation, disappointment and this, if not properly handled by for example maximizing interaction avenues, could end up in dropout. Walker (2002) demonstrated new ODL students' desperation for interaction when he came up with an article "Is there anyone there?" summarizing a plea not just for information but also for contact, for human contact, someone to talk to. Such feeling of isolation inhibits any possibility of dialogue in learning and interferes with the learning process, and dropout could follow (Simpson, 2002).

Conclusion and Recommendations

According to the results in Table 4 most interaction between instructors and students is not direct teaching or even teaching-related. It is 'contact and communication', implying that the interaction opportunity is not well utilised. Most calls and SMS are related to missing examination marks, inquiry of clarification on some dates on the university's almanac, or the whereabouts of a particular study material for such and such a course. The study finds that the mobile phone interaction between instructors and students at the university is a great opportunity for turning the currently administrative-like interaction into more academic.

Another important finding is that there is some resistance among academic staff over the use of mobile phones for academic interaction. Among the factors that influence the attitude on mobile phones is inappropriate use of phones by students, implying a need for regulations on use of mobile phones. The study recommends:

- investing in m-learning research, and embracing mobile technologies;
- putting in place institutional policy to guide the use of mobile technologies;
- conducting a similar study among students, since this study reports the use of mobile phones at OUT from the staff perspective only. The practices and issues regarding this topic can be understood more clearly from the perspective of students; and,
- making mobile phone interaction more academic. The ideal situation is to have in place an atmosphere among course instructors that encourages them to take a moment to actively communicate with their students through mobile phones; an atmosphere that will make a course instructor proud to communicate with students.

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