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Editorial

Accessing higher education has been a challenge for many years. The limitations within the institution can cause restricting through redirecting possible means of accessing higher education. Is within the chosen means of admission an individual is categorized as a full member of the institution or remain just an external stakeholder. Through absolute zeal in seeking knowledge comprised by maximizing available means, an individual can succeed to belong to the institution. Therefore, awareness of admission prerequisite unveils the potentiality of a candidate to either proceed with the process or substitute higher education to other opportunities available. Not all aspirants can be quenched by barriers in accessing higher education. There is a possibility of breaking down all hindrances to identify next step in attaining the admired knowledge. Rebuilding the past attainment and accessing required bridging courses are some of the means used for those lagging behind full institutional membership. The admission process is controlled at the institutional level; therefore, institutions need to minimize restrictions for all qualified individuals. Institutions should not be the roadblock of access knowledge; but the societal needs should dictate the limitations in admission. When educational institutions fix the number of students to be admitted without responding to the needs of the society, the submergence of potential manpower and talents prevails. Low admittance hinders the social contribution in building the society due to elevation minority's skills. The reason for small number for intake does not outweigh the loss of superior knowledge, and the highest quality of productivity. The challenge of access should be left to the current needs and future of the society.

The debate on statistical number of possible candidates in higher education and the groups to be targeted narrows the focal point of essence of higher education. Enlightening the small group of students who have proven to excel beyond others can be defended by critics who view the process as a mass production of workforce, waste of resources and minimizing low class job workers. The main knowledge difference within the society can be measured through personal values, cultural practices, beliefs, in reaching conclusion, and through the reasoning processes. The aim of higher education is not only to uplift superior knowledge but to change the society to align to its actual needs and solving its problems. Is through the institutional process scientist, doctor, researchers, leaders and other are publicly acknowledged without doubts. In communities where access of proper knowledge is missing, pockets of individuals can mushroom to occupy the vacuum of proper knowledgeable individual. To motivate and support social transformation Open and Distance Learning (ODL) solves most problems of accessing higher education.

Open and Distance Learning is unbounded to potential access hurdles in a conventional higher learning institution. The open and distance learning is mentioned by Rwegerela, Muganda and Mushi "to widen education opportunities to those who due to historical, socio-cultural and economic barriers could not access higher education". Same authors upload the learning system for promoting gender equity.

The challenges of ODL are to incorporate individuals who are not in working class and adults especially in a rural environment. Adults pass their values to their offspring therefore accessing a proper knowledge will eliminate wrong knowledge passing from one generation to the next. Root cause of educational system are explained in article by Masenge to include “policy implementation” that the author mentioned to “contribute significantly towards the problem of poor performance in mathematics”.

Dr. John Soka
The Editor

Preferred Leadership Styles for Combating Poverty and Discrimination

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Abstract: *The study set out to identify perceptions regarding leadership styles of school principals serving in South Dakota public and tribal school schools in the USA. From 152 public school districts and 20 tribal schools, 55 school principals participated in the study.*

Leadership styles in the study include transformational, transactional, laissez-faire, democratic, and autocratic types. The results showed that the leadership styles preferred for combating poverty and discrimination included transformational and democratic leadership approaches. Respondents did not endorse laissez-faire and autocratic leadership styles. Transformational and democratic leadership styles were correlated, as were laissez-faire and autocratic styles.

School principals administer students from diverse family backgrounds, gender, race, religious affiliation, and disability. Issues encountered most frequently were related to socio-economic status, followed by race; and with religion rated the lowest. Students included inappropriate behaviors, apathy, inadequate school funding, and parental apathy.

Introduction

The struggle to solve social and educational problems puts pressure on individuals entrusted to provide educational leadership to schools in an increasingly complex social, political, and economic environment. School principals in education face this leadership challenge. Rapid social change based on technology and globalization has created demand for innovative educators who can lead education and respond to demands for change. National, and local issues revolve around how education can serve the community through “teamwork, communication, problem solving, [and] social responsibility” (Miller & Sundre, 2008, p. 152).

Those who choose to be educational administrators either select leadership styles and foci to move education forward, or they find themselves using static patterns of leadership and assumed to be effective based only by traditions of practice and culture. In an increasingly diverse and technological context, educators have to make decisions on how best to serve students, facing the perennial global, national, and local issues of pressures to eradicate poverty and discrimination.

Each school principal in South Dakota encounters effects of poverty and discrimination, requiring the use of particular leadership styles. One study on leadership styles determined that dependable leader has attributes such as leadership quality and higher skills for needed in the organization (Baumgartel, 1957). Research by Rice and Urban Institute (2010) has shown that sometimes “the effectiveness and distribution of principals have been undermined by the lack of data to study principals, their complex work, and their impact on school outcomes” (p. 1). Many administrative styles and

purviews of the task of leading have been in use for centuries. Which styles are best today, and how school principals perceive the styles most suited to confronting problems of poverty and discrimination are basic questions that call for a study.

Purpose of the Study

The purpose of this study was to identify perceptions of school principals regarding preferred administrative leadership styles for leading change, and particularly for facing issues of poverty and discrimination.

Research Questions

The study was guided by the following research questions:

1. What are the preferred leadership styles?
2. What are the perceptions of preferred leadership styles, based on demographic characteristics, including gender, role, and years in positions?
3. What are the relationships among preferred leadership styles and potential issues of poverty and discrimination?

Literature Review

Administrative behaviors come under scrutiny of people who have widely varied perceptions about how leadership should occur (Mayeski, Gaddy, & Goodwin, 1999). In spite of the complex philosophies and styles of leadership, however, contemporary educational leaders and teachers need to manage change and accommodate the community that schools serve. While institutional job descriptions try to define what capabilities are sought in a leader, the complexity of factors involved in the challenge of leading a particular educational organization, let alone the complexity of factors in the leader's knowledge, experiences, and preferences; can confound a search for the appropriate fit of teaching and administrator styles in school organizations (Mitchell & Poutiatine, 2001). Convergence of contemporary political, social, academic, and religious attitudes may result in a broad preferences for leadership styles, as well as which social problems might be the focus of human energies.

Schools' structures enable principals to lead educational institutions through valuing its goals and missions. Bennis and Goldsmith (1997) defined a leader as a person "who has the capacity to create a compelling vision that takes people to a new [*horizon*], and to translate that vision into action" (p. 4).

The need of good leadership in schools was encouraged by Cooper (2002) who mentioned that it "provides a spirit to the individuals within an organization as well as a functional foundation for day-to-day operations"(p. 9). School principals are committed in creating a channel that can produce consistence and predetermined final products. Lee and King (2001) defined leadership as the role of "fostering human spirit" (p. 80) through modeling leadership to include supportive environment to ensure work is done.

Leadership qualities are very important in integrating personal beliefs on the perceived needs of organization and actual needs of the relevant community. In order to implement

change, Cooper (2002) described the need for visionary leaders prepared to work productively with both people and educational institutions. The role of a leader is expected to affect the individual's life and the relationship between the society and the organization. According to Cooper (2002) employees became aware of the person in charge when the institution had powerful leadership. The need for direction creates a tendency to rely on entrusted leaders who have resources to solve problem. Bennis and Goldsmith (1997) mentioned that sources of the leaders' decisions come from "their appeal to others, and their integrity on reality, on the facts, on a careful estimate of the forces at play, and on the trends and contradictions" (p. 4).

According to Hilliard (2010), "effective leaders have emotional intelligence and can connect easily with others as people in building relationships" (p. 94). Members of a school relate with a leader according to the level preferred by the leader and daily exposure to the members of the organization. Palmer (1998) mentioned that leaders operations should be "guided by [a] major sense of direction" (p. 162).

Source of poverty and discrimination in the functionalist approach theory was defined by Palen (2001) "as a consequence of cultural conflict where traditional roles, rules, and social structures break down and become dysfunctional" (p. 15). School principals dedicated to facing poverty and discrimination can motivate parents of students to take the lead in reducing issues pertaining to poverty and discrimination. Challenges in solving such social problems was explained by Palen (2001) as not to deal with affected persons but to rebuild social systems.

Leadership styles. The five identifiable as different styles include democratic, autocratic, laissez-faire, transactional, and transformational approaches. Each of the five leadership styles has characteristics that may or may not be familiar to practicing educators even when being applied. According to Penn (n. d) an "effective leadership is dependent on the right behavior" (para. 12). Clearly, the styles are not discrete and mutually exclusive, since a leader may practice some inclusive, participatory, or democratic process, and yet be perceived as a controlling person not always open to suggestions from people who are being served. While each of the five leadership styles require some careful study and detail for full understanding, the brief introductions below introduce the primary characteristics of each of the five, including democratic, autocratic, laissez-faire, transactional, and transformational styles.

The process of sharing leadership power and resources can be used by leaders to suggest that they are democratic. But, using democratic style over a period of time requires more than occasional listening to others. Democracy was defined by Kjær (2004) as "rule by the people" (p. 92). The inclusion of majority of members of the society in decision making is an expected phenomenon in a democratic society. Democracy was described by Donahue and Nye (2003) as a social ethical agreement. Democracy is preferred in many societies, although some leaders oppose democracy as it can reduce or eliminate leader power in the society. Inclusion of the perspectives of others on a systematic basis has also been referred to as authentic democratic leadership. The complexity in

leadership is explained by Donahue and Nye (2003) that, “democratic legitimacy is variable, fluid and often problematic: something to be achieved, not taken for granted” (pp. 170-171).

Ledeen (1999) mentioned the goal of the autocratic leader is “the domination of others, and the winners revel in it, savoring what Machiavelli calls ‘sweetness of domination’” (p. 2). The power to control access to wealth and social resources may add to the material nature of rewards for dictatorial leadership. According to Nye (2008), “Machiavelli believed that when one has to choose, it is better to be feared than to be loved” (p. 110). The autocratic leader does not incorporate values of other; therefore a community is excluded in the decision-making process.

In laissez-faire style, leaders assume that any adult who has reasonable perceptiveness and some social experience can take their turn as the boss, leading a group to follow rules to keep interference from people who want to control others. Laissez-faire leadership was described by Avolio (2011) as “the near-avoidance or absence of leadership and is, by definition, the most inactive, as well as the most ineffective, according to almost all prior research on this style of leadership” (p. 65). Leaders expect members of the society to make their own decisions and execute them with as little oversight, governmental control, or expert intervention as possible.

Transactional style focuses on achieving major changes and productivity as leaders “emphasize constructive promises, praises, and rewards that are contingent on achieving expected performance” (Avolio, 2011, p. 53). This style focuses on behavioral intervention in groups, and is sometimes described as a “carrot and stick” approach. Rewards and punishments are managed to ensure organizational productivity. Using transactional leadership model leaders, are able to attract workers to cooperate in achieve their goal (Hellreigel & Slocum, 2009).

Transformational leadership was explained by Lee and King (2001) as bringing change through “moving into an unknown future, reshuffling the cards, developing new habits and methods, creating systems, working with different people, and playing by different rules” (p. 92). Transformational leaders “develop and encourage new and broader energies among followers” (Nye, 2008, p. 126). Leaders with this style need extensive knowledge of social change, technological change, and global issues to communicate with organizational members in constructing futures visions which can accommodates changing social conditions and needs (Hellreigel & Slocum, 2009). Leaders’ inspiration and ability to influence their followers can help to clarify leadership styles. Nye (2008) posits that “transformational leadership has been the dominant paradigm since the early1980s” (p. 22).

The Methodology Used in the Study

The analysis of the collected data related leadership styles, poverty, and discrimination factors. School principals contributed their ideas on how to bring changes and how to

solve some problems associated with poverty and discrimination. Demographic data were used to relate gender, experience, and school principals' roles in the preferred leadership styles. The survey also identified respondents' levels of job satisfaction. This quantitative research study used a formal survey (Multifactor Leadership Questionnaire) and researcher-created questions to collect data from school principals.

The quantitative research study collected data using online SurveyMonkey. The sample was randomly selected from 152 public school districts and 20 tribal schools in South Dakota schools. The number of school principals who participated in the study was 55. The online survey included the leader form of the Bass and Avolio (1995) MLQ-5X which is a self-rating questionnaire. Online survey had 70 questions whereby 45 were from the MLQ-5X focusing on the three leadership styles of transformational, transactional, and laissez-faire types. The researcher created 25 additional questions regarding autocratic and democratic leadership styles as well as additional items focusing on leading changes related to issues of poverty and discrimination.

The interconnection of school principals' roles was simplified through identifying their administrative roles as single or multiple. School principals who also served as school superintendents were categorized as serving multiple roles. The school principals were grouped according to the years they served as principals. Respondents who served for more than ten years were 47.4% and those who served 10 or less years were 52.6%. Data were downloaded from the SurveyMonkey website to Microsoft Excel sheet and was analyzed using window based SPSS version 19.0. Descriptive statistics and Pearson correlation were used to analyze collected data.

Results of the Study

Preferred leadership styles of school principals. Transformational leadership style was analyzed using five scales known as idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration; transactional leadership style was analyzed using three scales known as management-by-exception (active), management-by-exception (passive), and contingent reward; laissez-faire leadership was measured using a scale known as laissez-faire. The survey scale had a five-point Likert-scale with 0-4 response options (with center of 1.5-2.5). The result indicated that transformational leadership was rated higher with three of its scales having mean score of 3.0 and above (out of possible score of 4.0) while transactional leadership scales had the highest mean of 2.92 (Table 5). Laissez-faire leadership scale had the lowest mean of 0.5 (on scale of 0-4).

According to the MLQ-5X survey results, school principals regarded inspiration motivation as the most important element in their leadership styles (Table 1). Descriptive statistics were used to obtain mean scores and standard deviations of all the MLQ-5X scale factors. Inspiration motivation, a factor in transformational style, was rated highest by the respondents ($M = 3.29$, of a possible score of 4.00). Laissez-faire style was least preferred ($M = 0.50$).

Table 1
Leadership Factors Measured by MLQ-5X

	<i>N</i>	<i>M</i>	<i>SD</i>
Idealized influence (Attributed)	50	2.87	.58
Idealized influence Behavior	50	3.17	.53
Management-By-Exception(Active)	50	1.45	.59
Management-By-Exception(Passive)	51	0.92	.53
Inspirational Motivation	51	3.29	.48
Intellectual Stimulation	51	3.00	.49
Extra Effort	51	2.97	.52
Individualized Consideration	51	3.14	.49
Effectiveness	50	3.17	.36
Contingent Reward	48	2.92	.51
Satisfaction	51	3.25	.47
Laissez-Faire	50	0.50	.44

Note: Scale values ranged from 0 to 4

Table 2 gives data on preferences among the five leadership styles. Democratic leadership style had the highest rating ($M = 3.17$, out of a possible score of 4.00), followed by transformational leadership style ($M = 3.09$). Transactional leadership style was less preferred ($M = 1.77$), followed by autocratic leadership style ($M = 1.56$). Laissez-faire leadership style was least preferred ($M = 0.50$).

Table 2
Leadership Style Preferences

	<i>N</i>	<i>M</i>	<i>SD</i>
Laissez-faire	50	0.50	.44
Transformational	49	3.09	.40
Transactional	47	1.77	.32
Democratic	48	3.17	.48
Autocratic	48	1.56	.51

Pearson's Product Moment Correlation (often denoted r) was used to determine the correlation among all five leadership styles. There was a significant correlation between transformational and democratic leadership styles (Table 3).

Transformational leadership style had highest significant correlation with democratic leadership style ($r = 0.634$, $p < 0.01$). Autocratic leadership style had a significant correlation only with transactional leadership style ($r = 0.387$, $p < 0.01$). Transformational and democratic leadership styles correlated negatively with laissez-

laissez-faire leadership style ($r = -0.200$ and $r = -0.225$). There was significant correlation between transactional and democratic leadership styles ($r = 0.295$, $p < 0.05$).

Table 3

Correlation among Leadership Styles

	1	2	3	4	5
1. Laissez-faire	1				
2. Transformational	-.200	1			
3. Transactional	.066	.445**	1		
4. Democratic	-.225	.634**	.295*	1	
5. Autocratic	.139	.134	.387**	.123	1

** $p < 0.01$, 2-tailed

* $p < 0.05$, 2-tailed

Preferred leadership styles, based on demographic differences. Female school principals rated both transformational and democratic leadership style higher than male school principals with mean difference of 0.07 and 0.17, respectively. Male school principals rated transactional, laissez-faire, and autocratic leadership styles higher than did females. Both male and female school principals rated laissez-faire leadership style as their least preferred leadership style. Democratic leadership style was rated the highest by both genders, followed by transformational leadership style.

The results of the study indicated that democratic and transformational leadership styles were perceived to be the most preferred styles of leadership. This finding confirms literature suggestion that leadership style for the new millennium should embrace transformational concepts. School principals indicated that those who use transformational leadership styles also prefer democratic leadership and they did not prefer laissez-faire leadership style. The correlation between leadership styles and job satisfaction indicate that both democratic and transformational school principals were satisfied with their jobs. Out of 55 respondents, 32 (58.2%) had multiple roles and 23 (41.8%) had single roles. In terms of gender, 58% of male and 58% of female school principals had multiple administrative roles, such as being a principal and a superintendent.

Apparently, “setting explicit goals for learning” was the preferred future solution for both male and female school principals ($M = 3.13$, and $M = 3.64$, on a 0-4 scale). School principals view setting goals to be more important than increasing salary of teachers. Increasing dialogue between school principals and funding bodies was mentioned as helping in raising funding levels. Dialogue among collaborative groups was rated with a mean above 3.0 for both male and female school principals ($M = 3.03$ and $M = 3.36$).

Potential discrimination and socio-economic status that school principals encounter. School principals administer students from diverse family backgrounds, gender, race,

religious affiliation, and disability. Socio-economic status as a potential problem issue was rated highest ($M = 2.35$), and religious practices of students was rated lowest ($M = 1.08$). Students' race was rated second highest ($M = 2.08$).

Correlation analysis was used to relate leadership styles with potential discrimination and poverty issues. There were significant correlations between transactional leadership and socio-economic status ($r = 0.442, p < 0.01$), gender ($r = 0.490, p < 0.01$), and race ($r = 0.300, p < 0.05$) (Table 4). There was significant correlation between autocratic leadership and expectation to encounter problems associated with social-economic status ($r = 0.303, p < 0.05$).

Table 4

Correlation among Preferred Leadership Styles and Expectations to Encounter Potential Discrimination and Poverty Issues

	Q56	Q57	Q58	Q59	Q60
Laissez-faire	.189	.119	.278	.118	.188
Transformational	.221	.164	.003	.046	.056
Transactional	.442**	.490**	.300*	.165	.255
Democratic	.059	.178	-.011	-.084	.117
Autocratic	.303*	.287	.149	-.176	-.063

* $p < 0.05$, 2-tailed

** $p < 0.01$, 2-tailed

Q56 = Socio-economic status of students

Q57 = Gender of Students

Q58 = Race of students

Q59 = Religious practices of students

Q60 = Disability

Experienced effects of poverty and discrimination among students. Low economic status of students' families emerged as one of the most pressing issues for school principals. Family financial instability was mentioned as affecting students' education achievement and lower graduation rates. Many students from poor families "lose hope that they are 'worthy' to accomplish goals and lose motivation due to lack of encouragement, resources (who to seek and where to seek), isolation from urban areas where resources are available."

Poverty affects students' performance as it "decreases the ability of students to focus on learning." Students from poor families experienced learning difficulties whereby school principals had to "meet the needs of all the students despite the socio-economic divisions (the gap between the 'haves and the 'have-nots')." Socio-economic difference was mentioned to affect students' reading and vocabulary. One respondent mentioned that "schools are forced to do more" to cater for resources that parents of students could not afford.

Some students from low income families had experienced living in “broken homes and having multiple step moms and dads” causing “students to bring a lot of baggage to school that negatively affects their ability to concentrate and learn when at school.” School principals had to face drinking and drug problems while “parents condone these behaviors which make it impossible for schools to keep kids away from drugs and alcohol.” Lack of guidance at students’ homes was also mentioned to contribute on students’ behaviors. The challenge for school principals was mentioned with survey respondent as the “lack of parents’ involvement” in supporting education of their children.

Academic achievement was mentioned as being coupled with socio-economic status of students’ families. Students from low income families had low academic “achievement due to socio-economic inequalities and materialistic values.” Apathy was mentioned as a challenge in improving academic achievement of students. One respondent mentioned that technology can have positive or negative impact on students; therefore, “schools need to continue along with families and religious institutions work on instilling morality” related to technology.

Lack of funding for programs that help students was mentioned as a challenge to school principals especially in affording to offer programs that help students from low-income families. Lack of state’s financial support has affected those students “at risk of not graduating.”

School principals were faced with students’ issues of bullying, harassment, drugs, alcohol, and economic inequality. One respondent mentioned that “not enough respect is given to education” because of what people “see and hear” about schools.

In order to make changes to the school and school community one respondent mentioned that the changing mindset of the people “about the effects that poverty has on students” is important. One of ways to learn about students is for educators to have knowledge about “students’ backgrounds”. One respondent viewed reversing the trend of reducing educational funding by the state as one of the solution to meet needs of students from who might be struggling due to poverty and discrimination. Social reform can create awareness of students’ challenges and needs. “Higher level thinking” in the classroom was mentioned by a respondent to help students to solve their problems.

Some respondents mentioned that in order to promote change school principals need communicate with students’ parents and let them take responsibility of their children education. One respondent proposed motivating students to spend “hours of reading and writing” as part of taking responsibilities for their education. “School teachers and principals should be accountable for students’ achievement.”

School principals can reduce issues of poverty and discrimination through “developing programs that meet individual needs rather than group needs.” One respondent mentioned that school principals can “promote social skills of all students to provide

self-esteem". Positive school climate and justice system can help students' learning. One respondent mentioned that the state need "to invest in the educational system to increase economic development and produce graduates who are ready to meet the rigors of post-secondary education or the workforce."

School principals were committed to change through encouraging social reform and developing programs that meet individual student's needs. Open ended responses linked the possibility of students from low-income families to have low motivation in accomplishing their educational goals. Broken families were mentioned to add pressure to students' academic and lack of support from home. School principals supported students from low-income families and those with behavioral needs. The support included offering equal opportunity, justice, school funding resources parents could not afford.

Discussion

This research study determined the preferred leadership styles of South Dakota school principals. The leadership styles were to determine the best ways of approaching issues of poverty and discrimination. School principals rated themselves highest in preference for transformational and democratic leadership styles. Their preferred leadership styles provided their views on how to reduce issues of poverty and discrimination. Variation in individuals' choice and inclusion of experience makes each school principal to have unique ways of dealing with institutional issues. Personal expression can be a source of order and supportive strength in the leadership role.

The achievement of institutional goals has higher implication on the leadership styles used as the means to achieve final results. Principals are in the position of public domain whereby their relation with individual institutional member indicates the scope of leadership in dealing with matters of institution and its stakeholders. Perspectives of external stakeholders' reality of leadership goal can be viewed either attainable or diverted from reality. Responses from principals are relevant to innovation required to meet challenges of poverty and discrimination. Although leadership styles

Leadership in schools has been a challenging task that needs balance between school and school community needs. The socio-economic and culture of community around the school permeate students' behavior and their expectations in schools. School principals' awareness of students' background including cultural values might be helpful during budgeting and decision making.

This perspective resonates with the characterization of the effects of poverty and discrimination reported in the literature. This study showed that the South Dakota principals responding believe, as other educational leaders, that social change to address poverty and discrimination can be best nurtured with transformational and democratic leadership styles. Dialogue is preferred over the regulatory whip to control, encourage, or empower people suffering the effects of poverty. Despite school challenges affiliated with poverty and discrimination in South Dakota, school principals view dialogue as one of the options that can help schools offer higher quality of education.

Many school principals mentioned that “apathy” was the challenge in dealing with students. Students’ motivation can be attributed to cultural awareness of importance of education and support to achieve goals of learning. Family role models can help students to learn, although some students can go beyond community expectation.

Leadership styles of school principals help students to see school as a trustable learning environment where their needs can be met. Students’ race and religion correlate negatively with democratic leadership style. School principals need to be aware that working in a school where majority of students and parents are not of the same race need to understand the importance of associating with the school community. Some issues of students trusting their teachers of different races were instilled by parents who downgraded educational responses of their children in attaining formal education. Transformational and democratic leadership styles and theories are essential for leaders who will make progress in this context.

Conclusion

School principals are perceived to embrace change through their transformational leadership style. Although school principals have the capacity to bring changes in schools, poverty continues to hinder progress. Preferred leadership behavior related to democratic and transformational styles can be effective in engaging parents and community members to improve their schools. Leaders need to balance the vision of institutions to its stakeholders so that school employees and students can have similar perceptions of the institution. But, poverty results in adequate funding for both the schools and the families in parts of the State. This poverty works against school improvement for children. Some school principals’ initiatives are hindered by parents who condone unacceptable behavior in schools such as use of drugs and alcohol. It is a huge challenge for principals to maintain a vision of the school as important for students who want to get ahead when some parents let their children know that education may not help them to avoid poverty or discrimination. Students who experience both discrimination and poverty learn to have little hope in the school as a social institution. The discrepancy between school values and some family values are challenges brought to school by students.

Many school principals in South Dakota serve in administrative multiple roles. Some male and female school principals have multiple leadership roles in schools. Leading multiple schools in South Dakota does not indicate much difference with leaders of one school on how to solve issues of poverty and discrimination. Contingent theory helps leaders to be flexible in changing their methods of decision-making. Flexibility is a key point for leaders with multiple roles in solving diverse problems.

Students’ family income can affect students’ learning. In order to help needy students, school principals rely in part on creating programs funded by the State of South Dakota. Many school principals who need money for special programs are affected by economic downturn which forces State to reduce funds. The economic downturn affects students’

ability to receive financial support from low-income parents. The cycle of hopelessness and low expectations can infect a community. Transformation leadership, visioning, and engagement of school leaders in projects for economic development can be important in rural communities.

According to the research results, students from the poorest county such as Ziebach are subjected to some family financial challenges which can affect their academic achievements. The importance of democratic and transformational educational leadership cannot be underestimated in facing deep and continual issues of poverty and discrimination.

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Women's Voices on Gender Mainstreaming in ODL Institutions: The case of the Open University of Tanzania

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Abstract: *Open and Distance Learning (ODL) has widen education opportunities to those who due to historical, socio-cultural and economic barriers could not access higher education. There are still less women representation at ODL institutions. At the Open University of Tanzania, the enrolment of female students is less than 30%, while women academic staff are 119 constituting 35.5% of total number of academic staff. Women administrative staff constitute 57% most of them in lower cadres of employment (OUT 2012). Gender mainstreaming in the institutions has been identified as a viable mechanism for enhancing gender equity in education. The study is based on a recent qualitative research study entitled "Women's Voices on Gender Mainstreaming in Higher Learning Institutions: The Case of The Open University of Tanzania". A sample of 100 women from different categories of OUT staff, work stations and age groups was purposively selected from the target population. Open handed questionnaire, interviews and documentation techniques were used to collect data while content and discourse analysis were employed to analyse the data.*

The findings of the study indicated that the prevailing understanding of gender mainstreaming was that it is 'a process of increasing women participation in all aspects of the organization'. Most women at OUT did not interrogate gender perspectives and practices in relation to existing policies, guidelines and plans. Some voices however, indicated that certain practices including budgets, staff development and work environment were gender blind. Some of the positive gender initiatives at the institution require strengthening.

Introduction

For a long time in history women's voices have been silenced by socio-cultural traditions which do not allow women to air their views even in the matters concerning their own lives. Socio-cultural inclinations and stereotyping have created and reinforced the relationship between discrimination and silence. Social construction of gender and the relationship between sexes has rendered women's views not valued. Meanwhile, men's views, tasks, roles, functions are valued higher than those of women. Traditionally in many tribes of Tanzania for example, women were not allowed to contribute to men's talk, they had to listen. This applied also to community meetings whereby women were not allowed to contribute even in the matters concerning their own lives, including child bearing, family resources and education. In contemporary time policies, structures, procedures and practices play a very important role in shaping conditions of life, and in doing so, they often institutionalize the maintenance and reproduction of the social construction of gender. Often this construction of gender contains an unequal power relationship with male domination and female subordination in most spheres of life; from family up to places of work. Discrimination of women takes away their confidence and courage to act or speak where men are in control. The research and literatures on gender often focus on women. This is because gender inequalities are still more often a manifestation of women's lower status in income, power to make decisions and access to education, services and resources.

Gender mainstreaming is a process that aims at redressing such situations hence widening opportunities for both women and men in acquiring resources, social services and power to make decisions. It is important therefore to examine gender mainstreaming at an institution providing resources and educational services. Focusing on the Open University of Tanzania this paper examines gender mainstreaming in open and distance learning (ODL) institutions.

One of the major potentials of open and distance learning (ODL) is to widen education opportunities to those who due to historical, socio-cultural and economic barriers could not access higher education. Thus, gender equity and balance in education is among the envisaged achievements of ODL. There are still less women representation at ODL institutions. At the Open University of Tanzania, for example, the enrolment of female students is less than 30%, the number of female is also less than men. Gender mainstreaming in the institutions has been identified as a viable mechanism for enhancing gender equity in education. This paper analyses the voices of women staff at ODL institutions on gender mainstreaming. The paper is based on a recent qualitative research study entitled "Women's Voices on Gender Mainstreaming in Higher Learning Institutions: The Case of The Open University of Tanzania". The purpose of the study was to register OUT women staff's voices; to assess their understanding of gender mainstreaming and analyse their views on policy, plans, procedures and practices that were either challenging or enhancing gender mainstreaming at their work place. The paper discusses the finding of the study and suggestions of strategies for enhancing gender balance through gender mainstreaming are proffered and as a way forward.

Understanding Gender Mainstreaming

Gender mainstreaming is a globally accepted strategy for promoting gender equality. Gender mainstreaming is not an end in itself but a strategy or approach; it is a means to achieve the goals of gender equality. Understanding gender mainstreaming requires clarity on related concepts of gender, equity and equality.

The concept of gender

Gender refers to social attributes and opportunities associated with being female or male and the relationships between women and men. These attributes, opportunities and relationships are largely, socially constructed and are learned through socialization processes. Gender determines what is expected, allowed and valued in a woman or a man in responsibilities assigned, activities undertaken, access to and control over resources as well as decision-making opportunities. Gender is part of broad socio-cultural context

Gender equity

Gender equity is the quality of being fair and just to both men and women. It includes fairness and justice in the distribution between men and women of responsibilities, access to resources, control over resources and access to benefits. It embraces affirmative action where and when necessary. This implies that gender equity does not

mean sameness between women and men hence where there are gender inequalities positive discrimination in favour of the disadvantaged group or individual is encouraged. Gender equity is a step towards gender equality.

Gender equality

Gender equality is between women and men. It refers to the equal rights, responsibilities of women and men, girls and boys. Equality implies that women and men have equal rights to resources, services, responsibilities and opportunities. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration. Therefore gender equality is not a women's (feminist) issue but it concerns men as well. Equality is a human rights issue and a precondition for and an indicator of justice.

Gender mainstreaming for achieving gender equality

The term gender mainstreaming was logged in global policy at the Beijing conference in 1995 and adopted as a development accepted methodology for achieving gender equality (United Nations, 1997). Specifically, gender mainstreaming is a strategy for making women's and men's concerns and experiences an integral part of designing, implementing, monitoring and evaluating programmes and activities in the socio-economic and political spheres of the society. It involves a process of incremental change in policies, strategies and activities for the benefit of both women and men. Gender mainstreaming is a process of assessing and bridging gender imbalances. Therefore, policy, plans, programmes and decisions should incorporate gender analysis at all levels in order to contribute to equal outcome for women and men. Thus, gender mainstreaming is about more than gender analysis; it involves all the steps between analysis and incorporating that analysis into the policy and programme decisions that will contribute to equality of outcomes for men and women (Hunt, 2000). The ultimate goal of gender mainstreaming is to achieve gender equality.

The Need to Examine Gender Mainstreaming at the OUT

The Open University of Tanzania is a higher education institution offering programmes through ODL. One of the major potentials of open and distance learning (ODL) is to widen education opportunities to those who due to historical, socio-cultural and economic barriers could not access higher education. Thus, gender equity and balance in education is among the envisaged achievements of ODL. To date however, there are still gender imbalances in ODL institutions including the Open University of Tanzania.

In response to UN declaration, national frameworks and for harmonious human relations there is need for each institution to mainstream gender into its policy plans and practices. Through declarations and protocols at regional and sub-regional levels, African nations have expressed support to gender mainstreaming. The Nairobi Looking Forward Strategies (1985); The Beijing Declaration and Platform of Action (1995) and Gender Development Declaration of the Southern African Development (1997) are expressions of the support to gender mainstreaming.

Tanzania has been in the forefront to promote equity and equality for its citizens both men and women especially at the policy level. The United Republic of Tanzania (URT) constitution of 1977 (as amended from time to time) provides for recognition of equality of persons, and the constitution has incorporated a Bill of Rights, which bans discrimination on all grounds. Article 9 of the constitution provides for respect of human rights as provided for in the Universal Declaration of Human Rights. Article 21 asserts that, every citizen of the United Republic of Tanzania has a right to participate in the governance of the country directly or through their elected representatives. Article 22 provides for equality of opportunities and equal rights through equal terms and conditions to hold any public office. The Constitution establishes an affirmative principle as a temporary measure to rectify the historical gender imbalances.

Tanzania is a signatory of various international conventions related to gender. The government has endorsed and adopted the implementation of various strategies and plans of actions as an effort to promote gender equity and equality in Tanzania. In order to address gender issues properly, Tanzania formulated the Women and Development Policy in 1992. This was replaced by the National Gender Policy in 2000. The policy directs formation of gender focal points within the government structures at all levels.

In response to national policy and directives, OUT has undertaken initiatives of mainstreaming gender in its policy and plans. The OUT Charter stipulates guidance on systematic execution and accountability for gender concerns at OUT headquarter and its Regional Centres. The OUT Five Years Rolling and Strategic Plans which is regularly reviewed includes gender equity and mainstreaming as one of the priority objectives; the institutional structure provides for Gender Steering Committee as one of the decision making participatory organs of the university. Efforts towards institutionalizing gender issues at OUT have led to the establishment of the Gender Unit of OUT under the office of the Vice Chancellor.

Despite these commendable efforts, however, gender balance and mainstreaming has not yet been attained at the Open University of Tanzania. There are gender imbalances observable in areas of student enrollment and participation, curricula, staff recruitment, human resource development, leadership and institutional culture. Student enrolments, for example, indicate that female students constitute less than 30% of the total enrolment. By 2011 male academic staff constituted 65% of the total while women constituted 57% of the administrative staff, most of them in low cadre jobs.

The situation presented above indicates a mismatch between the policies and the situation of gender equality at the institution. The question are the members of the staff aware of the policies and plans that are supportive to gender mainstreaming? Are the policies and plans being translated in actions and activities? Which plans and practices are envisaged to be supportive to gender mainstreaming?

A qualitative study was deemed necessary so as to examine policy and practices at OUT. The objective of phase1 of this research, whose results are a focus of this paper, was to

register OUT women staff's voices; to assess their understanding of gender mainstreaming and analyse their views on policy, plans, procedures and practices at their work place that were either challenging or enhancing gender mainstreaming or were gender blind.

Methodology

The study was mainly qualitative research with descriptive statistics for elaboration and clarification of issues. A sample of 100 women from different categories of OUT staff, work stations and age groups was purposively selected from the target population which comprised all women staff at the institution. Documentation, interviews (Kiswahili/English languages) and focused group discussions were employed to collect data while content and discourse analysis were employed to analyse the data. Related ideas/perspectives were clustered to form thematic areas that are presented in this paper. This first phase of research focused on women participants mainly because they are the more negatively affected of the two gender groups.

Findings

The following is the presentation and discussion of voices of OUT women staff on gender mainstreaming at OUT based on their experience as OUT women workers/employees. The participants were women in different positions at the Open University of Tanzania: Administrators, Human resource, Academicians, Secretaries, Registry clerks and Office attendants. Their age profile indicated that the majority range from 18-45 and only a few were above 46.

Participants Understanding of Gender Mainstreaming

The research findings show that gender mainstreaming is a new concept for the majority of women employees at the Open University of Tanzania. Most of the participants indicated 'femininazation' of gender mainstreaming. While some see gender mainstreaming biased towards women and against men others sees it as a process of emancipating women from male domination. The following are some of the statements of the participants

- *'Gender mainstreaming is giving women a chance to take leadership positions'.*
- *'Gender mainstreaming is taking actions to address women issues'*
- *'Gender mainstreaming is to remove discrimination of women by men.'*

More participants however, were aware that the concept of gender included both women and men. During the focused group discussion some participants required an explanation why the research included women only while the focus was on gender. The researchers explained that this was one of the three phases of the research. The second phase will constitute men's voice; and phase 3 will be comparative analyses of the voices of both men and women. The researchers further explained that this first phase of the research has focused on women participants mainly because the analysis of the gender situation of OUT indicate that women are the more negatively affected of the two gender groups.

Gender Mainstreaming and OUT Policies, Procedures and Structures

The Swedish international Development Agency (SIDA) has contended that gender mainstreaming strategies can be identified in three spheres/ arenas including: (i) the organization's structure, policies and procedures; and in its culture.(ii) in the substantive activity that it undertakes (its programme) and (iii) in the impact of this work on increased gender equality in broader community (Schalkwyk, Thomas and Woroniuk 1996:4) As stated earlier OUT has a number of policies on student Affairs; staff recruitment, deployment/placement; staff development, research and publication; HIV/AIDS, research and consultancy, quality assurance and gender mainstreaming; etc; to guide all major practices. However, majority of participants were ignorant of the existence of most of these policies. The participants contended that the policies are not made available to all employees. *"They are kept as gray literature in the library hence most workers are not aware whether policies are gender mainstreamed or not"*, said one of the participants.

A few of the participants of the focused group discussion (FGD) said that they were aware of the gender policy which is awaiting printing but did not know its content.

"I have heard about the gender policy, the Gender Unit coordinator talked about it at certain meeting; but I have not seen the document. Where and how can I get it? Where is the OUT Gender Unit office?" Some of the women employees who have come across OUT policies but are not fluent in English language expressed that they could not understand the content of the policies.

"The documents are written in English language. They should be translated into Kiswahili language so that the majority of us can read and understand them". Said one participant. *"Even for those who can read and understand English they need to be guided by experts because the policies are written in a technical language that is not easy to understand"* Another participant added. Such statement indicated a feeling of exclusion from the contents of the policies and even the policy formulation processes which consequently make gender mainstreaming in policies a far reached dream. Thus, the researchers probed further on the issue. It was revealed that normally those who are eligible to attend forums where draft policies are discussed hold certain positions. The majority of these positions are held by men.

The participants also questioned some of the policies on gender mainstreaming; *"When you look at the OUT policies you wonder. Currently all the top leadership positions are held by men. Women make about 30% of management. But the policy aims at increasing the number of women in management positions up to 40% by the year 2015. Why not 50%?"* A participant lamented. Other participant added *"What does that mean? Does it mean there are no women to hold top administrative posts?Why can't the policy aim higher for women?"* Such statements indicate that given the opportunity the female staff of OUT could question the policies and identify gender mainstreaming issues.

Regarding the organization structure, OUT institutional structure provides for a Gender Steering Committee as one of the decision making participatory organs of the university. This Committee is chaired by the Vice Chancellor. However, the participants noted that

the committee is not representational. The members of this committee comprise of heads of faculties, directorates and administrative departments the majority of who are men. This situation indicates gender imbalances in participation in the decision making processes.

Gender mainstreaming activities at OUT

Majority of the participants were not aware whether there were gender mainstreaming activities at OUT. *"I have been with OUT for more than a year now I have never heard about gender activities"*. One participant said.. *"I have recently heard about a social activity to commemorate the 'a women's day. That is all"*. Another participant said. The findings also indicated that there is no clear strategy for advocating gender mainstreaming at the institution. The following statements denote this situation

- *"Sometime back, about 3 or 4 years ago we had a seminar on gender. It was good. I thought the event was to happen every year"*.
- *"I think last year there was a workshop on gender and HIV/AIDS. Only a few were selected to participate. I do not know what they discussed"*.
- *"Fortunately, I participate in the RSP workshops. There is where I have heard about OUT gender policy and action plans. But only high ranked academicians and administrators participate in RSP workshops"*.

Gender Sensitive Policy and Practices

Participants from the faculties indicated that there were gender courses in almost every faculty. However these are not coordinated and not all students study these courses. In some departments gender courses are elective. There is no Gender programme offered at OUT which could provide skills and in-depth understanding of gender and gender issues. Such programme could in turn produce more gender experts. *"If OUT had a gender studies programmes like they have at Makerere we would have more gender experts."* It was also revealed that in recent years advertisement for recruitment for posts at OUT is including a statement that women are encouraged to apply. Some of the participants required an explanation on this. They asked what difference it make if the criteria for recruitment (e.g. GPA) are the same. The explanation was that if a man and a woman had the same criteria then the woman will be selected for the post.

Voice and silence

Participants indicated that they had not been voicing their gender concerns because they did not often participate in the forums that discussed gender issues. Those who participated in some discussions on policy and procedures explained that sometimes they were not sure it was the right place or they were the right persons to raise gender issues. Participants at the FGD expressed that the meeting was an eye opener. The following are some of the statements by participants

- *"...this is good. I have learnt something about gender mainstreaming..."*
- *"We should meet more often"*.
- *"... We could use such meetings to ask those who have knowledge and experiences on gender mainstreaming to educate others"*.

The participants urged women employees to collaborate and to give a helping hand to each other. *“those on higher positions should pull others who are below. And those in lower positions should push others who are above. This way we will reach very far”*. Thus, participation in the FGD was seen as a way of giving confidence hence voice to whole group.

Suggestions for Transformation

Transformation means taking steps to make changes for the betterment of the situation. Most of the participants agreed that OUT was increasingly taking some strides in gender mainstreaming but more needs to be done if OUT was to achieve gender equity in the near future. The participants' recommendations included

- OUT need to create awareness of all employees on what constitutes gender mainstreaming through gender sensitization meetings, seminars, workshops and events.
- OUT management should make policies available and accessible to all.
- OUT to train staff on gender and gender mainstreaming in so that staff are able to identify the presence or absence of gender mainstreaming in policies, plans and practices.
- OUT need to increase the budget for gender mainstreaming activities. Disseminate the OUT gender policy. Enhancing research on gender and gender related issues.
- OUT should strengthen the gender Unit which in turn would coordinate gender mainstreaming activities and address gender issues. *“The gender unit should establish a gender help desk If a I had a gender issue I would not know where to go”*, one participant stated.

Concluding Remarks

From the voices of women staff at the Open University of Tanzania we note that lack of awareness and limited knowledge about gender mainstreaming are challenges to gender mainstreaming and gender equality at ODL institutions. Such challenges may be met by institutions organizing gender awareness and gender sensitization seminars, workshops and meetings; improving participation in decision making processes by ensuring gender balance among participants and capacity building through training on gender analysis and gender mainstreaming so that OUT staff and students gain knowledge, skills and competences in gender analysis and gender mainstreaming. It is also important for institutions to undertake gender analysis of all institutional policies and to ensure that all members of the institution (employees and students) are aware of the gender mainstreaming strategies and activities.

We also conclude that gender blind policies are in most cases gender insensitive. Therefore, institutions need to engage gender experts to ensure that policies and important documents contain correct conceptualization of gender and gender is mainstreamed in the documents.

ODL institutions need to strengthen or establish a strong gender coordinating unit which can provide leadership on the gender mainstreaming at the institution and act as a focal

point whereby students and employees can share expertise and experiences on gender issues; air their views and concerns; network and collaborate for the purpose of enhancing gender equality at the institution and beyond. Institutions should also encourage and support learning from good practices in gender mainstreaming.

ODL institutions should encourage and enhance research on gender and gender issues; document and learn from good practices of gender mainstreaming and share research and experiences on gender mainstreaming, equity and equality. The good practices can be within or outside the institution. One mechanism would be establishing a databank of research and literature on gender at institution, which can scale up to national, sub regional and regional levels.

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Prospects and Challenges at the Open University of Tanzania: Experience from the Field

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Abstract: *While effective and balanced teaching and support systems have been pointed as among the contributors to the success at Open and Distance Learning (ODL) institutions and necessary conditions for learners' retention at ODL, practitioners at Open University of Tanzania seem to ignore this balance. As we are celebrating the 20 years of Open University of Tanzania existence, there is a need to stop and assess how we are faring on. This paper presents the finding of the opportunities of ODL and challenges facing distance learners at the Open University of Tanzania based in Kagera Region. These opportunities, challenges and some suggestions to rectify the situation are brought to view as eye openers for the OUT to gain insights and move forward while making informed decisions on how to capture the opportunities while minimizing the challenges that its students face as they pursue their course of studies.*

Key words; *Open and Distance Learning, Challenges, Students service supports.*

Introduction

This paper presents the finding of the opportunities of Open and Distance learning (ODL) and challenges facing distance learners at the Open University of Tanzania (OUT) based in Kagera Region. Since 1994, OUT has been providing higher education opportunities to Kagera region residents who are unable to attend traditional universities due to various socio-economic barriers. For example, women who have been denied access to higher education, because of household responsibilities, and workers who prefer to upgrade their education level while continuing with their employment responsibilities. Learners from these groups would otherwise denied access to higher education.

The potential benefits of ODL related to its flexibility, accessibility, affordability and life based education are numerous. ODL could enable an expansion of tertiary enrollments at less cost per student than under the traditional residential campus system (Pityana, 2004), since it allows the training of more people. Greater flexibility enables ODL courses to adapt to specific student needs or work requirements, thereby enabling greater relevance (Saint, 1999). ODL also accommodates the growing demand for lifelong learning more easily than do residential programmes.

The statistics shows that, ODL is increasingly dominating global educational systems. It is revealed that about 4.6 millions students are enrolled in ODL courses in United States (Allen & Seaman, 2010), compared to 1.6 million students in 2002. In India, 22% of the total numbers of students enrolled in India's higher education system are distance learners (Forzdar & Kannan, 2006). Meanwhile as in 2006 in China, 1.4 million or 24.4% of its 5.8 million students in higher education were studying through ODL (Forzdar & Kannan, 2006). According to Perryer et al. (2004), in England more than 2.4

million students were enrolled in ODL and it is estimated that there are about 1.6 distance learners in Turkey.

In Tanzania, by 2010, OUT had already admitted 56,889 students (OUT, 2011). However, the data show that enrollment has been on the increase but completion rate is very low, though on the increase trend. For example, between 2000 - 2009, OUT had admitted 24,602 (Table 1) students in various degree programmes, however, in the same period only 3,519 students had managed to graduate (OUT, 2011).

Table 1

OUT enrollments and graduation in degree programmes 2000-2009

Year	Enrollments	Graduands
2000	675	47
2001	1209	71
2002	1340	68
2003	1567	192
2004	1920	210
2005	2692	380
2006	3460	296
2007	5668	530
2008	2565	466
2009	3506	1259
Total	24602	3519

Source: OUT, 2011

Such low completion rate is a sign that distance learners at OUT do experience obstacles on their educational journey. Despite the expanding growth of ODL and individual learners' self struggle, imbalanced teaching and lack of effective support seems to hinder the smooth utilization of perceived ODL advantages. Although, successful learning at a distance essentially demands learner's self-directing (Bhalalusesa, 1999); supports to students from immediate social environment within which learning is pursued and from the educational institution offering distance education cannot be ignored.

Lack of supports from social environment and from educational institution offering distance education can increase burden to distance learners who are naturally isolated learners. ODL students have been shown to face many challenges related to individual, institutional and instructional (Cross, 1981; Mbukusa, 2009; Mushi, 2001). However, to review the challenges facing distance learners, it is the literature of student attrition that is most helpful (Bird & Morgan, 2003). This makes a sense that; it is unfortunate we must wait until students drop out before exploring their needs.

At individual level distance learners are challenged with those barriers related to time constraints like failure to balance time for self study versus work and family obligations (Garland, 2007) ; Mbukusa, 2009; Tresman 2002). For example, Garland (2007) found

that students felt that the course took more time than anticipated because they failed to judge the demands of work, home and school, thus failed to integrate the demands of off campus study with family, work and social commitments. In fact studying by distance mode demands equal time as traditional mode if not more. This is the realistic demands that most of the students fail to realize prior to enrollment.

Another challenge is lack of experience and/or training with instructional technology (Juutinen & Saariluoma, 2006; Zirnkle, 2004). Distance learners are lacking two types of skills namely; technical competence and information literacy that people need in order to have effective access to contemporary ICT (Mossberger et al., 2003). Further, learners are challenged by scarce or apparent absent of technological devices (Basaza et al., 2010; Mbukusa, 2009). Other challenges include problem of transport, greater distance to study center, poor financial capacity and lack of encouragement from family (Mushi, 2001; Pierrakes & Xenos, 2004).

Challenges facing distance learners related to instructional includes; poor course material design (Pierrakes & Xenos, 2004; Tresman 2002) unhelpful course information, lack of direction and dissatisfaction with tutors (Senanayake & Dadigamuwa 2005; Keegan, 1996). Other challenges are such as low students' engagement in teaching and learning. Tresman (2002) claim that tutors' quality is a significant causative of these challenges and an issue even in well-established ODL institutions like Open University UK. Indeed, academicians in distance education institutions need a qualitatively extra dimension. They must have a passion for and commitment to distance education as a mode of learning delivery, empathy with their learners and skills to participate in a distance learning mode.

Open Universities may be causing, or at least contributing, to their own students' sense of burden (Tresman, 2002, Carnwell, 2000). Institutional barriers are constructed by educational institutions with or sometime without their knowledge (Zernke, 2004). The institutional related challenges includes difficulty in administrative services such as registering and paying fees, and lack of appropriate advice provided under the umbrella of students services support. Others are lack of guidance and information prior to enrolment (Carnwell, 2000), and lack of an effective institutional network of technical assistance, (Zernkle, 2004). Other cited challenges are those concerned with poor logistics, inappropriate and delayed study materials at regional centers, lost assignments and other important documents (Bhalalusesa, 1999; Mbukusa, 2009; Mushi, 2001).

These challenges obviously prompt many problems to distance learners. Among these problems are high rate of students' drop-out and late completion. High attrition in ODL is regarded as a dilemma for which appropriate solutions as yet to be found. Drop-out rates vary between countries. In United States, Carr (2000) indicated that drop-out rates ranged from 20% to 50%, and it range from 20% in the United Kingdom to 45% or more in Austria, France, and Portugal. It is estimated that in Nigeria and South Africa and other African countries the drop-out rate is much higher topping 50% and above (Daniel, 2005). Such high dropout rate not only leads to financial loss to both the students and the

institution, but also leads to student's psychological distress as they fail to reach their ambitions. Some fragile students may feel they have personally failed, when in reality it is the system that may have made them fail (Fozdar, et al., 2006).

Methodology

Population and Area of the Study

The population of this study consisted of undergraduate students who were enrolled in various degree programs offered by OUT, ex-OUT students, and OUT staff based at Kagera Regional Centre. The centre was purposely selected from among 30 regional centres, because of its familiarity to the researcher who has been a distance learner at the Centre. Given limited time, choosing regions other than Kagera would take the researcher more time to get familiar with a new area; a situation that would extend the research process and make the data collection plan difficult to execute. It involved a sample of 61 respondents including an academic staff, 39 continuing students and 21 former OUT students.

Procedures

The study adopted descriptive research design. The study also adopted a mixed methods approach, which is a procedure for collecting, analyzing and "mixing" both quantitative and qualitative data at some stage of the research process within a single study (Creswell, 2002). The validation for mixing approach is that neither quantitative nor qualitative methods are sufficient by themselves to capture the trends and details of the situation, such as difficult issues pertaining to challenges facing learners in distance learning environment. Three issues (priority, implementation and integration) in mixed research approach were observed.

Sampling and sampling Procedures; Because respondents in this study were drawn from a number of different categories (i.e. continuing students, former students and OUT staff), the sampling design may be best described as stratified sampling (Patton 1990). However, elements of simple random and purposive sampling were involved at some stages. Hence, two sampling techniques namely, stratified- random sampling and purposive sampling were employed to obtain the sample. The stratified random sampling was used to choose the respondents from two groups namely, continuing and former students. Whereas, purposive sampling was used to select the study area and respondents from main sample framework who were subjected to interviews.

Methods of data collections; Data collection instruments included combination of various techniques namely: questionnaire, interview and documentary review. The use of more than one technique was considered as an appropriate way for ensuring reliable and valid data through triangulation. The primary instrument for data collection was self-developed questionnaire, containing items of different formats, such as dichotomous answers like "Yes" and "No", self-assessment items, measured on the likert-scale type, and open-ended questions. The questionnaire was self-administered to 61 respondents. The face-to-face semi structured interviews were used as a second tool to get deeper understanding of the study and supplement the main data gathering technique

(questionnaire). This method can yield a great deal of useful information and allow the researcher to use verbal and non-verbal cues to adapt their questions as necessary, clarify doubts and ensure that the interviewee's responses are clearly understood by repeating or rephrasing their answers to questions (Leedy & Ormrod 2005). Thus, it enables the researcher to have access to "what a person thinks" (attitudes and beliefs). A sub sample of continuing and former students from the main research sample framework and one academic staff were interviewed.

Data Analysis Procedures; In accordance with the employed research approach, data analysis process blended both qualitative and quantitative analysis. Literature suggests that the combination of these two types of data analysis is necessary in order to remove each method's shortcomings in the research field (Rourke & Anderson, 2004). The qualitative aspect focused on the verbal data analysis where as quantitative descriptive measures such as frequencies and percentages helped to reduce the subjectiveness of qualitative analysis.

Results and Discussion

The study was carried out From December, 2011 to January, 2012. The focus of the study was to establish view on the prospects and challenges at the OUT as perceived mostly by students. These opportunities, challenges and some suggestions to rectify the situation are brought to view as eye openers for the OUT to gain insights and move forward while making informed decisions on how to capture the opportunities while minimizing the challenges that its students face as they pursue their course of studies. Various issues were emerged from participants' responses. The main findings from the field and discussion follow.

Perceived Individual Related Challenges Facing ODL Students

One specific objective of this research was to determine the individual related challenges facing ODL students as experienced by continuing and former ODL students. This objective was guided by the research question, 'what are individual related challenges facing ODL students? In the questionnaire, respondents were asked to rate seven selected individual related challenges in a likert scale format. These selected challenges were reviewed from the literature as most cited individual related challenges facing distance learners.

Over 80% of the respondents either strongly agreed or agreed with three individual related challenges facing them. These challenges were lack of sufficient time for study (86.7%); difficulties in learning complex and/or technically demanding materials (85%); and information and communication technologies barriers (80%). These responses to individual related challenges confirm with Bean and Metzner attrition model. That, environmental (socio cultural) variables such as finances, hours of employment, family responsibilities, and social services infrastructures can determine the succeeding or withdraw of distance learners (Zirnkle, 2004).

Results from open responses also revealed that respondents were challenged by lack of enough time for self-study. One respondent who was a teacher commented that, *“high teaching load left me with little time for self study”*. Another respondent posted that, *“it is not easy studying while working”*. Many other statements indicated that respondents were constrained with time management. Likewise, the findings from interviews also revealed that employment pressure had impact on individual learner learning progress. One interviewee stated that; *“the major problem facing me is lack of time, as most of the day time is dedicated to work”*. Time management problem among the distance learners is not new. Nash (2005) in United States found that the “number one” challenge facing distance learners was time management. In another study, Rao and Giuli (2010) concluded that most of the distance learners face difficult in keeping up with deadline and completing coursework.

In contrast, two interviewees demonstrated that time management to distance learners is not the matter of being fully employed or not but it depends on self-commitments and dedications Interviewee (graduate) mentioned that *‘I successfully completed my degree within three years while teaching (working)’*. Another interviewee disclosed that *‘studying while fully employed is a matter of self- determinations’*. The same interviewee continued to highlight that *‘always time is a scarce resource, is difficult to graduate from OUT, it needs sacrifice and extra efforts’*. This is in line with Tresman’s (2002) findings that students who are able to devote extra efforts in studying are likely to succeed in their academic endeavor. Further, according to the results, 58.3% of the respondents had no computer/laptop and 36% were computer illiterate. Moreover, interviewees showed the magnitude of these challenges related ICT applications as illustrated in the following statements:

“Cannot access SARIS unless I seek help from someone”

“With little computer operation skills, to get what you pay for from the internet café is a difficult task”

“I cannot search from the internet to supplement my coursework materials”

“I used a computer owned by my employer; it was often difficult to use it at convenient time. Working hours are very limited to attend my work duties and for self- study”

These findings reveal that, distance learners who are not well versed with skills of information literacy, the use of an electronic medium in distance learning can inadvertently exclude them or be problematic in their education undertakings. Prior studies, for example, (Mbukusa, 2009) found that barriers related to applications of technologies in ODL is a cross sectoral issue, but most of the affected are individual students. Despite all these difficulties, ICT is increasingly dominating the educational systems globally; therefore, application of ICT in distance learning is not a matter of choice, but a must.

It is fair however, to note the development made by OUT in information and communication technologies. During the field visit the researcher observed the modern computer laboratory at Kagera Regional Centre connected to internet. It was further revealed from the interview that computer courses are offered and the OUT is assisting students to buy laptops at reasonable price. It is therefore fair to anticipate that, though

under circumstances some students are unable to access ICT facilities offered by the University, others might be lagging behind time simply because they are reluctant to change their mind set towards accepting the fact that, ICT is increasingly becoming the part and parcel of distance learning enterprises.

Although respondents identified lack of support from employers as a challenge facing them, with statements such as, *“denial of permission from employer to attend exams”, “my boss does not recognize my effort in advancing my qualifications,”* etc. Many indicated that they were self-sponsored, an indication of self-motivation in learning. Brien (1992) asserted that distance learners who are self motivated with “never give up” attitude are more likely to persist, even more under the most adverse circumstances, such as lack of support from employers and financial constraints.

Furthermore, the study intended to establish the relationship between home environment and learners’ motivation to learn. The results showed that respondents were less concerned with unfavorable home learning environment as a challenge facing them, and instead, insisted on isolation and difficulties in creating learning communities (study groups) with their fellow students. Carroll (2008) asserted that distance learners have many challenges to overcome such as physical groups has negative impacts to distance learners as these groups could lessen isolation nature of distance learning.

Moreover, the study wanted to find out whether distance from home to Regional centre had any impact on learning. Some of those who saw distance as a challenge had this to say:

“Because of taking care of my little baby, I was forced to travel back and forth to regional center for the all days during exams. My home is about 40 kilometers away, then you can imagine how it cost and risks”.

“I have to incur travelling cost to regional centre and sometimes could not get expected services.”-

“I had to lodge during the exams and tests, in spite of being expensive; the lodging environment was not friendly for studies”

From these responses, it was concluded that, distance from home to regional centre was among the challenges to distance learners, where many students were forced to lodge especially during examinations, tests and face-to-face sessions. Similarly, prior studies documented the problems related to travelling distance, for example, Mushi (2001) reported problems of transport and greater distance to regional centre as among the challenges facing ODL students in Tanzania.

Perceived Instructional Related Challenges Facing ODL Students

The research objective two was concerned with determining the instructional related challenges facing ODL students. In the first stance, the questionnaire presented instructional related challenges as perceived from the literature. The respondents were asked to rate them in likert scale containing six items. About 83% of the respondents separation, feeling of isolation, and feeling disconnected. Failure to form voluntary study

agreed that delayed or ineffective feedback was a challenge; 75% agreed that lack of instructor's contact and /or inadequate academic support was a challenge. Inappropriate learning materials were identified by 60% of the respondents as a challenge facing them.

Further, findings revealed that, many respondents experienced delays with the instructors' feedback on the marked assignments, and timed tests as a discouraging factor to their studies success. One respondent revealed that, *'if you do not know the results from what you did, it becomes difficult to progress'*. Meanwhile an interviewee (former student) remarked that:

"I received feedback on my first year assignments and timed tests scripts on the followed year when I had already sat for annual examinations. It was if these assessments were used for grading not for individual student academic growth".

Respondents' experience on timing of feedback showed that there was no fixed time for instructors to send feedback to students. Some indicated a few months, (0-3 month and some over the year. If students' feedbacks are delayed, they may contribute negatively to students' future learning. It is difficult for the students when they do not receive timely feedback as they may find it hard to move on to new content. Hara and Kling (2001) found that students reported confusion, anxiety, and frustration due to perceived lack of prompt or clear feedback from the instructors.

Through open-ended responses and the discussions which the researcher had with the interviewees, it became evident that the, problem of scripts getting lost frustrated, discouraged and brought many discomforts to students. One respondent (former student) remarked that; *"I lost so many scripts which I had to repeat, not easy to explain"*. The same respondent continued showing the magnitude of the problem when he commented *"I repeated some assignments and timed tests, again did not get the results"*. The researcher was interested to probe further how that respondent managed to graduate in such situations. It was disclosed that he once travelled to Dar es Salaam (OUT headquarters) to make follow-up and it took him a year to clear the gaps that were not of his fault. Other several respondents indicated that lost scripts and/or unrecorded grades costs them a lot, for they were forced to travel to Dar-es-Salaam to make a follow up, and in many cases, they had to pay more fees to sit for the missing grades. Some of responses expressing these views are as follows:

"It affected me a lot either I was supposed to delete the affected course and start afresh or in order to remove incomplete in my examination records I had to accept zero as if I failed. This affected my grade"

"I had to do them for the second time. It mean I lost my time and money"

"I was supposed to graduate in 2009 but I came to graduate in 2011, because some of my academic records were missing I repeated three courses in 2011".

These findings confirm what Mbukusa (2009) pointed out that, more money and time was lost when students repeated courses several times due to ineffective and poor students' records keeping. In an ODL setting where learners are isolated, accurate ways of students' grades recording and ensuring that instructors give regular feedback is of great importance not only for learners' satisfactions, but also for institution's reputation.

It is imperative, however, to note some acknowledgments submitted by respondents on improvement made by OUT so far. Commenting on those improvements, one interviewee said, *‘there are remarkable improvements in students’ scripts handling and marks recording. For the time being, I do not have serious problems compared to the past.* Documentary analysis revealed that following the establishment of Examinations Syndicate, coupled with the revival of the marking panel sessions (OUT, 2011), students’ academic progressive records handling has improved.

Commenting on the effectiveness of their instructors, different comments were provided ranging from ‘very effective’ to ‘poor’ and it would be unfair to make any conclusion from these comments as it failed to provide any base from which judgment could be drawn. These variations might be attributed to the fact that respondents were not much conversant with the role of instructors versus the role of learners in ODL enterprises. For example, one respondent fumed that *“Student like me who is fresh from school needs many lectures, but we had never received any. OUT lecturers are paid for nothing-(they don’t teach)”*. This reflects the lack of understanding of what distance learning entails. Consequently, students failed to understand not only their teachers’ role but also their roles as distance learners.

Perceived Institutional Related Challenges Facing ODL Students

This part presents the findings for objective three, which aimed at determining the institutional related challenges facing ODL students. Delayed or apparent lack of study materials emerged as a key institutional related challenge facing ODL students. Results demonstrated that, students receive study materials late or never got them. Open ended questions produced the following responses:

“Study materials are not provided”-

“I have taken long to finish because each time there are no study materials”-

“Some courses never receive materials for the entire year”

“Most of us are getting tired with the situation of study materials”

The findings also show that most of the respondents (over 50%) received study materials late or never got them. Barriers related to study materials in ODL were also reported in previous studies. Bhalalusesa (1999) and Mushi (2001) reported logistics problems that lead to delayed study materials at regional centers. Basaza et al (2010) also found that lack of study materials was a challenge hindering distance learners in Uganda. OUT acknowledge that *‘the shortage of study materials has been a genuine problem for the University and impacts negatively on students’ overall performance’* (OUT, 2011,p.26). However, the status of development of new study materials is not impressive. Accordingly, starting 2006 to 2010, only 80 new study materials have been produced. This is inadequate when you compare with the current courses on offer.

Similarly, participants showed their concerns on the minimal flexibility in learning associated with the use of study materials delivered through electronic media. They said that it was a very tiresome exercise when required to do “screen reading” where some of them had little computer skills and do not own computer. Transforming study materials into softcopy is inevitable as ODL cannot remain static in the present age of new

technologies, however, lack of access to computer and other ICT devices bar students from accessing the required materials (Zirnkle, 2004). McIsaac (1993) warned that materials and services that are transferred without attention being paid to the social and technological settings of the recipients could affect technology based distance learning.

Inadequate academic support and poor contacts between the instructors and students were also the issues which emerged during the interviews. Respondents complained about the low instructors' responses to their problems and inadequate or apparent absence of academic advice at the regional centre. One respondent had this to say, "*We are doing things in our own ways; there is an acute shortage of instructors at the Regional Centre who can assist us, even the few available are not supportive enough*". This was supported by another interviewee who stated that, "*there is nothing like that (academic support); it is better you fight for yourself instead of wasting time looking for nothing*". Lack of direction from instructors' supports has been proved to be one of the major factors contributing to students' dilemma, as there is no frequent contact with instructors, students are likely to have trouble in self-evaluation (Keegan, 1996).

Further, majority of respondents claimed that some administrative personnel are not supportive enough. They reported abusive language, inconsiderate and failure of regional centre administrative team to attend to their problems accordingly. "*They are lacking customer care skills*" one interviewee claimed. A statement like that sounds simple but it has big implications on today's ODL enterprises. What matters most in the case of ODL institution like OUT is the presence of staff personnel who pay attention to students' problems and who help students feel that they are supported (Daniel, 2005).

Conclusion and Recommendations

The findings show that there are several challenges that OUT students face emerging at individual, instructional and institutional levels. In addition, some good progress made by OUT so far were revealed.

First, it is recommended that, although studying through ODL mode is an independent endeavor OUT should equip students with independent study skills. Specifically, OUT should strengthen its initiatives of compulsory introduction to ODL courses with a focus to improving students' ODL knowledge and skills, as means of helping them to cope with changes to non-traditional education. Secondly, OUT should continuously establish necessary infrastructure for ICT at its Regional Centre and provide students with access to ICTs facilities such as audio –visual conferencing facilities, computers and CD-ROMs. More important, those students who are reluctant to change their mind set towards ICT should be oriented to ICT.

Third, OUT should plan for hostel services at the Regional Centre with permanent buildings. Hostel services would not only create revenue to OUT, but also provide safe place to students and cuts the cost and risks related to lodging environment during the examinations and face to face sessions. Fourth, attention should be paid to improving administrative services at the Regional Centre by appointing right personnel. Students'

services should include counseling and guidance as most students are compounded by various problems. Further, OUT must ensure on-time production and delivery of study materials. It is not proper in ODL when study materials are not available, as study materials form the basis of teaching and learning.

Generally, OUT should strive to achieve effective and balanced teaching and learning system. This means provision of high quality education that satisfies the desire of the learners to the extent that they would wish to come back to the institution for further studies and to feel proud of their institution to recommend it to others who are seeking for knowledge.

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Implementation of the Tanzanian ICT policy in Education in a Teachers' Colleges

A research paper presented in the Distance Education Association of Tanzania (DEATA) annual conference held in the Open University of Tanzania- Dar es salaam on 24th August, 2012

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Abstract: *The education systems around the world are pursuing policies that embrace pedagogical integration of ICT in education as a means to develop a competitive human resource, for the global knowledge economy jobs and careers. In Tanzania, the ICT policy in Education has been developed to initiate the integration of ICT in teaching and learning at various levels of education. This paper reports data from an empirical study about the implementation of the policy on ICT integration in teaching and learning, by tutors in a public Teachers' College. A mixed method approach was adopted for the study which included a survey, interviews, focus group discussion and document analysis. Analysis was done using the Knowledge ladder conceptual framework of ICT levels of integration. Results seemed to reveal that; despite government provision of ICT infrastructure and training of tutors, majority of tutors had limited understanding of how ICT can be integrated in their teaching. Tutors not only lacked knowledge of the goals of the ICT integration policy but also lacked the necessary aptitude and knowledge to support the adoption of the ICT policy. This paper, therefore, recommends a more integrated and holistic approach in preparing tutors to adopt ICT.*

Key words: *Policy implementation; ICT; ICT integration; Knowledge economy*

Background

The turn into the 21st century has experienced a growing understanding among nations that effective ICT integration in social and economic activities can maximize global social and economic development (Haddad, 2007; Selwyn, 2011). ICT has been broadly defined to constitute media like the computer, telephones and networks, television, radio, print, video, DVD, both hard and software used to process, transmit, store and share information through electronic means (Kozma, 2011; MoEVT, 2007). ICTs, particularly computers, internet and mobile phones, have had a major impact on social and economic development by acting as key resources for knowledge acquisition, dissemination, creation and evaluation (Brown, Lauder, & Ashton, 2008). The rise in the importance of ICT has led to the growth of knowledge economy. The concept of knowledge economy recognizes human knowledge and skills as capital for social and economic development (Haddad, 2007; OECD, 2003; Sachs, 2008). The authors emphasize that what propels social and economic development is the shift from mass production to knowledge and skills production whereby a small group of highly skilled labour force use technology to maximize production. In response to this global ICT trend, nations and individuals around the world, and Tanzania in particular, have adopted ICT in their socio economic activities. Like many other nations, Tanzania resorted to integrate ICT in education in an attempt to prepare its citizenry for active participation in the knowledge economy (MoEVT, 2007; URT, 2003). Research has confirmed that, effective ICT integration in

education may foster higher-order thinking skills which are essential in the knowledge economy jobs (Lim & Tay, 2003).

In order to make ICT integration in education a practical endeavour, nations around the world developed ICT in education policies that would map out plans and frameworks for guiding the nation's initiatives in ICT integration in teaching and learning. It was in line with this premise that the ICT policy in education in Tanzania was developed (MoEVT, 2007). The policy states that, "the integration of ICT in education will empower learners, teachers, educators, managers and leaders to use ICT judiciously and effectively for expanding learning opportunities and ensuring educational quality and relevance" (MoEVT, 2007, p. 2). Through ICT, learners can up-skill their work competencies by studying electronic content through the internet and participation in on-line learning programmes that may increase productivity in their organizations (OECD, 2003). Moreover, scholars have argued that effective ICT integration in education helps to develop and foster learners personal skills including creativity, networking, self organizing, entrepreneurial and innovation hence-learners competitive in the knowledge economy based jobs (Brown et al., 2008; Marsh & Willis, 2007).

Different literatures posit that ICT integration has positive benefits to learners and educational administrators. Haddad (2007) assert that, learners' motivation and creativity is enhanced when learning in ICT integrated environment. Additionally the author argues that, ICT integration in education encourages collaborative learning among learners in peer groups within the school and beyond the school setting. On the other hand, Barak et al (2011) assert that, ICT integration enhances learners disposition to research and problem-solving focused on real social situations.

In order to tap on these ICT benefits, the MoEVT committed itself in a phased integration of ICT in the education sector. The first cycle of ICT integration in education focused on teachers' colleges which is also the focus of the study reported in this paper. In the year 2005, MoEVT in collaboration with Swedish International Development cooperation Agency (SIDA) initiated a project in implementation of ICT in Tanzanian public TCs. In this project, all 34 public TCs were provided with ICT facilities including computers printers, projectors and internet connectivity (MoEVT, 2007). In addition, a group of college tutors were given training aimed at equipping them with both computer application and maintenance skills. The group of tutors who received this training, formed college teams for cascading similar training to all tutors in their respective colleges.

Since the official launch of the ICT integration in Tanzanian public TCs in 2007 (MoEVT, 2007), there is little that is known about how ICT integration is implemented by tutors in the TCs despite the important role tutors play in preparing teachers of secondary schools who, in turn, are expected to integrate ICT in their teaching. This has created a need for a study that would help to bridge the knowledge gap on how ICT is being integrated by tutors in teaching and learning in Tanzanian TCs. Previous studies have mainly focused on existing inputs and expected outputs for ICT integration in

relation to policy recommendation (Ghumpi, 2008; Hennessy et al., 2010). Other studies focus on use of ICT in particular subjects in secondary schools in Tanzania (Voogt, Tilya, & Akker, 2009) and others focus on ICT integration in a university education (Komba, 2009; Mtebe, Dachi, & Raphael, 2011). However there are limited studies on how teachers are prepared to integrate ICT in schools. Consequently, much remains unknown on how the policy on ICT integration is implemented in Tanzanian TCs.

The ICT policy in education explicitly states that teachers must have the necessary skills needed for ICT integration (MoEVT, 2007). As with many other skills expected of teachers, ICT integration skills are taught to teachers at TCs by tutors. However, little is known about the role of TC tutors in the overall implementation of the ICT integration policy and specifically on how they prepare teachers to integrate ICT in their teaching. Consequently, this study intended to investigate how tutors in a public TC in Tanzania contribute to the policy on ICT integration in teaching and learning in their training of teachers.

Literature Review

The rise of the knowledge based economy across the world has intensified pressure in individual countries to adopt ICT in their socio economic sectors. The UNDP cited in Avgerou (2003) in an attempts to qualify how technology, especially ICT, is ‘enabling’ development effects argued that “Technological innovation enhances human capabilities – such as a healthy life, knowledge, creativity, and participation in the social, economic, and political life of a community – and impacts on economic growth through productivity gains. At the same time, human capabilities are an important means for achieving technological innovation. Therefore, technology innovation and development are ‘mutually reinforcing, creating a virtuous circle” (p.28). This argument suggests that ICTs act as resource for development and that people and their capabilities are an important avenue for achieving technological innovation that can further social and economic development. Kirkman, Cornelius, Sachs and Schwarb (2002) propose a framework of factor contributing to a country’s capacity to exploit the opportunities offered by ICT ‘Networked Readiness Index that identifies the education level and the incorporation of ICT in education as a major determinant.

In view of the importance attached to ICT innovation and the critical role education plays, different nations including Tanzania developed policies to guide the implementation of ICT in their socio economic sectors and particularly in education (MoEVT, 2007). However, despite the development and implementation of a comprehensive ICT integration policy in 2007 and the realization that ICT integration benefits for development accrue in five years (Kirkman, Cornelius, Sachs and Schwarb, 2002), there has been no notable changes in Tanzanian ICT and development indices since 2005. Tanzania Networked Readiness Index in 2012 is a meagre 2.95 and is ranked 123rd out of 142 countries, its human development index HDI is 0.466 ranking 123 out of 187 countries (World Economic Forum and INSEAD, 2012). This development scenario is no different from the case in 2005 and consequently seems to suggest that the policy

on ICT integration may not have been effective and is what generated an interest in exploring the implementation of the policy on ICT integration in teaching and learning.

In a public policy process, implementation is a stage in which a policy formally adopted is put into practice (Fowler, 2004). Policy implementation consists of actions by public and private individuals or groups directed at achieving objectives set forth in policy decision (Paudel, 2009). A great deal of research in policy implementation has evolved into top-down and bottom-up approaches (Elmore, 2004; Matland, 2009; Paudel, 2009). The top-down approach represents a hierarchical flow of policy decisions from the policy makers at the top through the macro level technocrats, down to the micro-level implementers at the bottom. The approach considers macro-implementers as key actors in successful policy implementation. Under Top-down approach, what matters as implementation includes budgeting, funding and evaluation of practice in relation to policy intent (Elmore, 2004; Paudel, 2009). On the other hand, the bottom up approach is set at the premise that policy implementation is manifested at the bottom level through collaboration between the micro and macro-level implementers (Fowler, 2004; Elmore, 2004). The main assumption in this approach is that, micro-implementers [street level bureaucrats] are key actors in successful policy implementation due to their knowledge of implementation context and close interaction with learners who are the target of the policy (Fowler, 2004; Hill & Hupe, 2006).

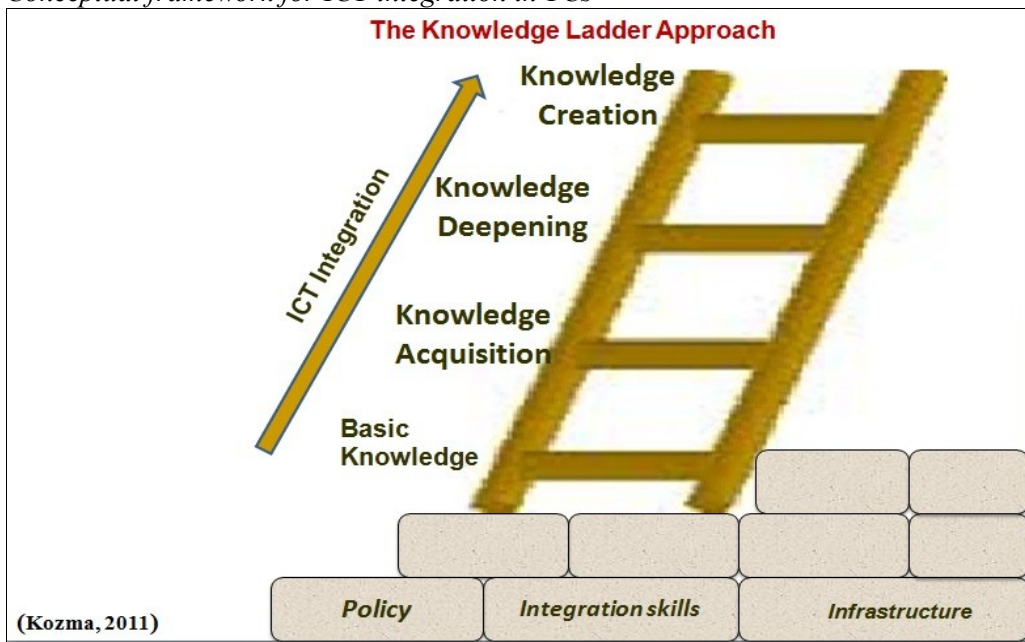
The study reported in this paper adopted the bottom up approach intended to explore how tutors, who are micro level implementers, contribute to the policy on ICT integration in teaching and learning through their preparation of teachers. The implementation process for ICT integration in Tanzanian public TCs involves roles of different actors including the policy makers at the state level who authorize the policy; followed by macro implementers involving ministry of education, curriculum and assessment authorities; and micro implementers consisting of college principals, ICT programme coordinator for TCs and tutors also referred to as street level bureaucrats (Fowler, 2004). In order to maintain efficiency in policy implementation, different institutions provide different services in the implementation of the policy. The Tanzania Institute of Education is responsible for designing, developing, evaluating and monitoring curriculum process; The School Inspectorate is concerned with monitoring the quality of the implementation; The National examinations Council of Tanzania conduct assessment and evaluation of student teacher and Ministry of Education and Vocational Training (MoEVT) take charge of overall administration and management of the programme (MoEVT, 2007, p.6). Together these institutions are supposed to ensure the successful implementation of the policy by effectively playing their different roles. However, policy implementation is never as smooth as intended (Paudel, 2009). The involvement of many actors in their individual and institutional capacities, open room for different interpretations of policy and subsequent different implementation, Bell and Stevenson, (2006a) label these different interpretations policy refraction.

Effective implementation of ICT integration depends on the extent to which different actors in policy implementation understand what ICT integration entails. ICT integration

has been interpreted differently by different scholar. In summarizing some of the definitions, Hew and Brush (2006) notes ICT integration being defined as narrowly as teachers use of technology in the classroom in activities like students searching for materials from the internet. ICT integration has also been interpreted as blending of ICT and other crucial components such as content and pedagogy into one entity such that, the quality of the lesson may diminish if the ICT component is removed from the ICT integrated lesson (Wang and Woo (2007).

Kozma (2011) came up with the knowledge ladder (figure 1). The knowledge ladder suggests that ICT integration should start with it first being adopted as a subject (basic knowledge), then by being blended in the curriculum (knowledge acquisition), then used for problem solving (knowledge deepening) and finally as a pedagogy (knowledge creation). He argues that it is only when ICT is adopted as a pedagogy that ICT integration can have an impact on development. Figure 1, illustrates the knowledge ladder approach and some of key factors affecting effective ICT integration in teaching and learning.

Figure 1
Conceptual framework for ICT integration in TCs



The knowledge ladder questions the narrow view where ICT integration is referred to as the process of learning about technologies (including hardware, software and networks), instead it emphasizes on the adoption of appropriate pedagogical design in the use of technology to enhance student learning in a lesson, topic or at curriculum levels (Kozma, 2011; Wang & Woo, 2007).

Specifically the constructs in the knowledge ladder depicts complementary alternatives in the adoption of ICT in education beginning from lowest level of knowledge acquisition to the highest level of knowledge creation. According to Kozma (2011), Basic knowledge level aims at equipping learners with skills that will help them to participate in the formal economy. In this case, ICT use focuses on awareness of technologies for supporting work performance. This is followed by knowledge acquisition which emphasizes on preparation of workforce that is knowledgeable and skilled and capable to take up new technologies. Kozma argues that, knowledge acquisition entails organization of ICT knowledge into a distinct subject aimed at mastery of technologies rather than integration of technologies into teaching and learning.

On the other hand, knowledge deepening focuses on infusing technology into teaching and learning with the intention of solving complex real world problems in a particular subject and across subjects and disciplines. The author asserts that, ICT integration is more evident in knowledge deepening level as the curriculum and daily classroom practice supports ICT integration. Moreover, in knowledge deepening ICT facilities are fitted into classroom to support teaching and learning unlike the basic knowledge and knowledge acquisition levels where ICT facilities are placed in the labs for teaching and learning of technologies. The last part of knowledge creation is the target level for ICT integration in education. Kozma (2011) argues that, knowledge creation is the level in which ICT integration takes pedagogy as the point of departure. In this level, ICT integration extends beyond the subjects and disciplines to include, “the ability to use a wide range of technological tools and resources, search for, organize, and analyse information; to communicate effectively in a variety of forms; to collaborate with others of diverse skills and backgrounds; and to think critically, innovatively, and creatively” (p. 25).

At the core of the Tanzanian ICT policy in education is the statement that defines the goal of ICT integration. It states that, “ICT integration in teaching and learning will focus on two main aspects: the first is teaching of ICT for learners who will specialize in ICT related careers and, secondly, ICT will be integrated as a pedagogical tool for teaching and learning in other subjects” (MoEVT, 2007, p.19). This statement suggests that the goal of ICT integration in education is to see that ICT is taught both as a subject and be used as a pedagogical tool by teachers. The policy’s interpretation of ICT integration is similar to conventional definitions of ICT integrations in as far as it relates to facilitating pedagogy. In literature, most of the definitions relate to the use of ICT as a pedagogical tool where ICT is embedded into teaching and learning with focus on enhancing the quality learning outcomes (Guzman & Nussbaum, 2009; Haddad, 2007; Pritchard, 2004).

Clearly, research in ICT integration in education posits that ICT integration skills are essential in pedagogical integration of ICT in teaching and learning (Mishra, Koehler, & Henriksen, 2011; Schmidts et al., 2009). The authors maintain that, the key implementers of ICT integration need to embrace a domain of knowledge that seamlessly combine

technology with subject content and relevant teaching and learning strategies that will augment mastery of requisite competencies in that particular subject. This constitutes the Technological Pedagogical Content Knowledge (TPACK) domain. Teaching and learning strategies that may enhance pedagogical integration of ICT include those which emphasize on development of learners' critical thinking, problem solving skills and inquiry based learning (Barak, Nissim & Ben-Zvi, 2011; Tondeur et al.2007).

However, the Tanzanian ICT policy in education also envisions teaching of ICT as one of specialization subjects students learn. This conjures the policy intentions to prepare technology specialists for the knowledge economy jobs and careers. Despite the focus on technology, the quality of competencies and creativity acquired by learners determines their participation in the knowledge economy jobs. Brown and Tannock (2009) emphasize on the development of creativity among learners in order to enable them to compete in the knowledge economy labour market. The authors argue that, "the key factor propelling economic prosperity is the rise of human creativity as the prime mover of economy" (p.378). This seems to suggest that, teaching and learning in the TC need to embrace the development of creativity among student teachers in order to include them in the knowledge economy. Studies in ICT integration cautions on the existing interpretation of ICT integration in a subject as replication of office application skills (Kozma, 2011; Unwin, 2005). According to Unwin (2005), "word processing, presentation software and spreadsheets are merely tools that usually have little if anything to do with substantive educational or pedagogical practice", (p.118). This means ICT integration in teaching and learning in TCs need to emphasize much on teaching and learning through ICT rather than dwelling mainly on basic use of ICT. In addition, Voogt et al (2009) and Wang and Woo (2007) maintain that, what matters in ICT integration is not merely having technologies in the lesson but the extent to which the quality of teaching and learning is enhanced through the use of technology in the lesson. In essence, the authors are trying to illuminate the importance of having a rationale for adopting technologies in the lesson and the need to ensure that technology adds value in the learning outcomes of learners.

Additionally, Wang and Woo (2007) assert that effective implementation of ICT integration in teaching and learning requires continuous reflection of the integration process in order to ascertain whether it adds value in relation to target learning outcomes. This suggests that where ICT integration is not yielding expected outcomes; a reflective implementer may discover the problem and improve the practice.

ICT integration is also highly influenced by availability of adequate and relevant ICT hardware, software, internet connectivity and technical support to facilitate integration. These facilities need to be fitted into the curriculum during integration process (Mandell, Sorge, & Russell, 2002). Additionally, effective implementation of ICT integration in TCs requires understanding of what the policy seeks to attain. This can be achieved through continuous policy dissemination and sensitization to all policy implementers throughout the policy process from initiation to institutionalization stages (Fullan, 2007).

Methodology

The study used both qualitative and quantitative data collection methods aimed at capturing depth and breadth of data on how the policy on ICT integration in teaching and learning was implemented by tutors in the teachers' college. Three subsidiary questions which sought to understand: the policy context in which ICT was implemented; tutors views about implementation of the policy on ICT integration and strategies used by tutors to implement ICT integration were used to answer the main study question.

The study reported in this paper adopted an embedded design. According to Ary, Jacobs, Sorensen, and Razavieh (2009) and (Yin,2009) an embedded design involves one form of data supporting a second form of data within a single study. In the current study, quantitative data are embedded within a qualitative case study where by the quantitative are supportive of the major qualitative findings. The rationale for mixing qualitative and quantitative data was the need to collect rich data that would enhance clarity of findings and subsequently inform the education stakeholders on the status of policy implementation on ICT integration in the TC. In addition, data from both qualitative and quantitative strands will help the researcher to generalize tutors understanding of, and level of, ICT integration in the TC. According to Stake (2010), survey is a strategy in social research that produces generalisable results.

This study adapted a case study methodology intended to explain how ICT integration in teaching and learning was implemented by tutors in a TC. The rationale for using a case study was to help the researcher to get deeper understanding of realities in ICT integration through interaction with key participants in the implementation of ICT integration in their work context. Yin (2011) considers case study as a research methodology that captures real life experiences of people in their natural context as was the case of a TC in this study.

In qualitative, a focus group discussion (FGD), Interview and document analysis were used to capture realities about ICT integration as viewed by study participants (Yin, 2009), whereas in quantitative a survey was used to capture data from all tutors in the TC. Data collection for this study was done concurrently. According to Driscoll, Yeboah, Salib and Rupert (2007), a concurrent design helps to validate one form of data from the other. Likewise, the current study adopted concurrent design in order to facilitate comparison of both qualitative and quantitative data that involved tutors as the main focus of the study.

Participants

In qualitative strand, participants for FGDs consisted of 10 tutors and 10 student teachers in different sessions. In order to understand how ICT was integrated in different subjects, two participants from ICT, Sciences, Languages and Education subjects were selected. The subject disciplines acted as a strata from which tutors were selected (Denscombe, 2007). Student teachers were purposefully selected in order to understand their view about ICT integration in their learning. Discussion guides consisting of open-ended questions for tutors (Appendix B) and for student teachers (Appendix C) used in this

study. The use of open-ended questions allows for flexibility among participants individually or in groups to articulate their views in an understandable manner to other participants and the researcher (Yin, 2009). Interview involved the college principal and ICT programme coordinator for TCs who were purposefully sampled due to their experiences and roles in the implementation of ICT integration in the site for this study. Interview guides (Appendix D1 & D2) with open ended questions were used in data collection. Document analysis was done by the researcher. This was especially important in the review of policy statements, documents and communications which provided important insights in the goals, strategies and outputs of the policy. A document analysis protocol (Appendix E) was used in the analysis of documents.

Analysis of Qualitative Data

Data from focus group discussion, interview and document analysis were analyzed instantly as they were collected. Audio data from focus group discussion, interviews and documents was transcribed into text and coded into categories indicating issues and ideas relevant to the study (Denscombe, 2007). After coding, the data was read in-depth in order to interpret emerging themes from the converging ideas across data sources. This convergence of ideas could inform the researcher of the meaning conveyed by data from different participants or data collection methods in relation to the study problem (Stake, 2010). The next section presents the quantitative data collection process.

Quantitative Data Collection

Data was collected using a questionnaire adapted from ISTE. In order to cater for validity, structures of items in the questionnaire were modified by including addition of demographic information and aligning the items to constructs of the knowledge ladder (figure 1) in order to meet the purpose of this study but without changing the prior meaning of the survey. The survey finally used in this study (Appendix A) consists of five points Likert's scale of Strongly Agree (5); Agree (4); Neither Agree/Disagree (3); Disagree (2) and Strongly Disagree (1).

In order to ensure for parsimony in interpretation of findings, the survey likert's scale was collapsed into a three-point scale as illustrated in table 1

Table 1

Collapsing scale

Survey scale	% Merged scale
Strongly Agree; Agree	Agree
Strongly Disagree; Disagree	Disagree
Neither agree/Disagree	Neutral

The quantitative strand involved the target population of 114 tutors in the TC. The response rate was 100 (88%) of the population. According to (Baruch & Holtom, 2008), a survey response rate averaged around (50%) is good for an academic study. This

response rate (88%) was good because it was valid and representative and can therefore be generalized to all tutors in the TC.

Validity and Reliability

In order to ensure that the questionnaire is understandable to the respondents, the researcher conducted an expert review with a group of five Master of education course participants at AKU IED EA for construct validity. Some of the suggested changes from the expert review included adding sections in the survey in order to help the respondent have a clear understanding of the requirements in the survey. In this case, separate sections for demographic information; ICT environment and ICT in teaching and learning were created. After the review, the questionnaire was piloted for reliability with a group of 15 tutors from a different TC to the study site for the current research. An internal consistency method was used, which yielded a reliability coefficient of 0.794 Cronbach's Alpha coefficient. According to Cohen, Manion and Morrison (2007), a reliability coefficient of "0.70 to 0.79" is reliable for a study, (p.506).

Quantitative Data Analysis

Survey data was analyzed using SPSS software version 20. Data was coded into SPSS using the constructs from the knowledge ladder. The descriptive analysis based on determining frequency and percentage of responses from each of the constructs was made in order to create parsimony in data interpretation. Tables and charts were used to provide for visual display of data in the interpretation of findings. Findings are reported using the total percentage of responses in each construct in line with the knowledge ladder as discussed in the literature review section. In the discussion of findings, data from the survey are embedded within qualitative findings in order to make sense of the meaning communicated by data as suggested by Johnson and Onwuegbuzie (2004).

Results and Discussion

Overall results seemed to reveal a very low level of ICT integration in the TC. While the ICT policy goal suggests that ICT integration should be implemented in teaching and learning other subjects in the TC, evidence on how tutors integrate ICT suggest that ICT integration is not happening in the TC as envisioned by the policy. This has been caused by a number of factors including; policy refraction at the stage of designing syllabus; low level of ICT integration skills among tutors and inadequate ICT facilities specifically teaching software and internet connectivity.

In exploring the policy implementation context for ICT integration, it was found that, the ICT policy in education in Tanzania seeks to prepare a human resource that is competitive in the knowledge economy (URT, 2003). The policy states that "ICT will be taught as a subject and be integrated as a pedagogical tool in teaching and learning other subjects." It further recommends that, "the ICT academic syllabus will cater for ICT as a subject of specialization and the pedagogical syllabus will be compulsory for all student teachers in order to equip them with competence to integrate ICT in other subjects" (MoEVT, 2007, p.7). In my view this policy proposes that ICT integration should be done by both teaching ICT as a subject and as a pedagogical tool for teaching

other subjects. More importantly the policy recommends that all training teachers should be equipped with ICT integration skills.

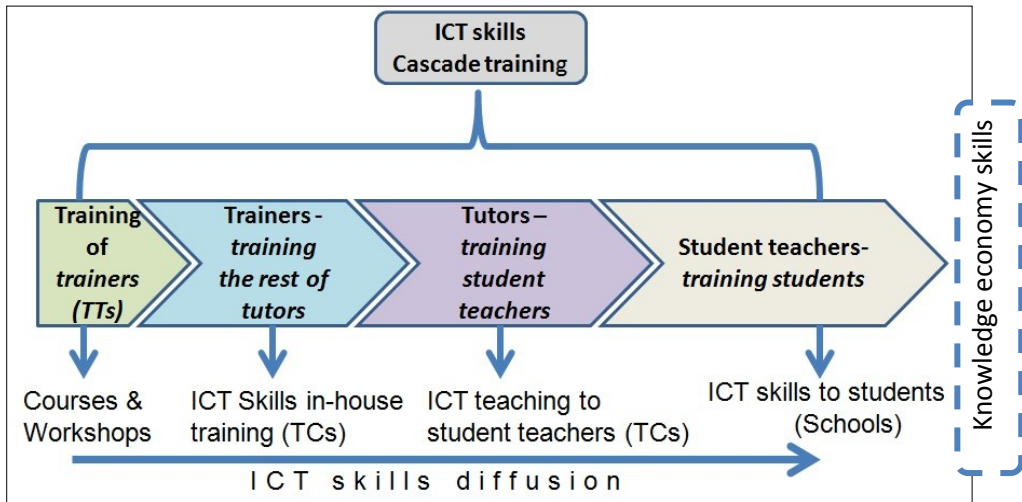
To facilitate the achievement of ICT integration, training and provision of ICT infrastructure were implemented. Specific to training, the policy states that “MoEVT will ensure that a sufficient number of experts, curriculum developers and educational content developers are trained in the development of, and use of ICT as a pedagogical tool” (MoEVT, 2007, p.16). Findings from Ministry of education training report (Appendix F) reveal that, from the year 2006 to 2012, MoEVT has trained total of 1564 tutors from across the TCs in: CISCO – an ICT maintenance and networking course, pedagogical skills like mapping, teaching and learning pack and in the use of learning management systems like Moodle (Document analysis, ICT training report for tutors, 11th May, 2012).

Training for ICT integration in TCs adopted the strategy of a cascading model (Figure 2). Findings from the Ministry of Education training documents showed that a group of 16 tutors four from each zone college were initially trained as trainers in ICDL and CISCO courses for basic ICT Skills and computer maintenance respectively. The 16 trainers conducted cascade training in ICT basic skills to the rest of tutors in their respective colleges and zones. Similarly, a further group of 28 tutors from seven TCs trained as trainers on the use of Moodle in teaching and learning. The trainers were expected to cascade the training to the rest of tutors in their respective colleges. In turn, tutors in each college have to impart the acquired ICT skills to student teachers and eventually student teachers are expected to pass on the acquired ICT skills to students in schools.

Figure 2 summarizes the process of training for ICT uptake in TCs up to the point in which a learner in a Tanzanian school acquires ICT skills. It creates a question on how can student teachers integrate ICT in teaching their students when the tutors in the TC were not integrating ICT in their teaching of student teachers.

Figure 2

ICT integration in Tanzanian TCs, Cascade training



In my opinion, while cascade training model may be useful in replicating ICT skills to the largest population possible, its effectiveness in providing tutors and student teachers with requisite skills for ICT integration may be minimal because ideas learnt are diluted each time they are passed on to a new group of learners (figure 2). Furthermore, in light of ICT integration in teaching and learning, the cascade training model adopted may be questionable because of being dominated by learning about technology rather than infusing technology into teaching and learning as suggested by the policy and previous studies in ICT integration in teaching and learning (Kozma, 2011; Pritchard, 2004; Unwin, 2005).

Providing ICT facilities to TCs was another policy implementation strategy adopted by the nation. Analysis of ICT inventory records revealed that all 36 public TCs including the one under study were provided with ICT hardware, software and internet facilities in order to support ICT integration in teaching and learning. Hardware facilities include *Sunray 270* thin client computer, *X2200 servers* running *Solaris* operating system [open source], printers and data projectors. A total of 1293 thin client computers were issued to TCs. The distribution of computers in TCs ranged between 15 and 72 with the former being issued to colleges with smallest number of student teachers and the later being for zone colleges which coordinate ICT activities across several colleges located in one geopolitical location like a region. Ten computers were also provided to zone colleges for conducting computer maintenance training. Moreover, all colleges were also provided with internet connectivity using aperture terminal (VSAT). A total internet bandwidth of four (4) megabits per second is shared by all 36 TCs (Document analysis, 11th May, 2012). In addition to these computers, the TC in which this study was conducted received 45 extra computers for language teaching. The language lab facilities were funded by USAID through MoEVT. This makes the total number of computers in the TC to be 127 (Researcher's field notes, 25th May, 2012).

As noted in literature review, effective implementation of the policy on ICT integration among other things requires ICT facilities to be fitted into the curriculum during integration process (Mendel, Sorge & Russell, 2002). The findings show that great initiative has been made by the Tanzanian government in equipping TCs with ICT facilities in order to facilitate ICT integration in teaching and learning. However, having ICT facilities placed in labs which are allocated specific subjects like ICT and languages as noted in the study site, has tended to limit chances for use of the labs in teaching other subjects in the TC, and subsequently perpetuates teaching of computer skills instead of ICT integration in teaching all subjects in the TC.

Moreover, the implementation of ICT integration in the TC seemed to be influenced by policy interpretation by policy actors at macro level including: the Tanzania Institute of Education responsible for designing, developing, evaluating and monitoring curriculum at both TC and school level (MoEVT, 2007, p.6).

Analysis of policy document reveal that, what was proposed by the policy as a pedagogical syllabus for implementation of ICT integration in teaching other subjects in TCs, seemed to be interpreted as the pedagogy syllabus for preparation of teachers of information and computer studies subject (ICS) in secondary school as revealed in the ICS syllabus for Diploma in secondary education (TIE, 2009, p. v). This discrepancy between policy and curriculum seemed to be predictive of the level of policy implementation in the TC where, ICT integration has meant teaching of ICT subject rather than other subjects through ICT as proposed by the policy. In addition, the discrepancy seemed to affirm the aforementioned policy refraction (Bell and Stevenson 2006a) which may delay the attainment of ICT integration skills among teachers and subsequent delay the attainment of the envisioned competitive human resource for knowledge economy based jobs. This scenario created a need for analysis of how policy implementation context affect how ICT was integrated by tutors in the TC. To do so, analysis based on tutors' views about implementation of the policy on ICT integration specifically on meaning tutors made of ICT integration in teaching and learning.

Overall FGD findings suggest that, tutors were at a very basic level of ICT integration. This could have been caused by inadequate training on ICT integration skills. The kind of training conducted through cascade model (figure 2), seemed to focus much on basic computer skills which appeals to basic knowledge level of the knowledge ladder (Kozma, 2011). Results from tutors FGD revealed that, the meaning of ICT integration expressed by tutors seemed to be mainly associated with the use of LCD projector and application software such as PowerPoint with few tutors focusing on the combination of content, pedagogy and technology as proposed in the conventional definition for ICT integration. In the FGD when asked what ICT integration was about, one of the representative meanings given by tutors explained:

Extract 1a

"I think ICT integration may be the use of programs like power Point in teaching my subject..." (Focus group discussion-tutors, 25th April, 2012).

The findings (extract 1a) suggest that some tutors have low understanding of what constitute ICT integration because the key pedagogical components like mastery of subject content and teaching methods and approaches seemed to be missing in their ICT integration meaning.

In contrast however, few tutors seemed to have a deeper understanding of ICT integration. They were able to relate the use of technology to pedagogy and content. As one of the tutors explained:

Extract 1b

“When you talk of ICT integration you talk of TPACK ... You integrate technology, content of your subject and teaching methods in teaching your subject” (Focus group discussion- Tutors 25th April, 2012).

This view (extract 1b) seems to demonstrate an understanding of what entails ICT integration as explained in the use of TPACK. TPACK refers to the nature of knowledge consisting of subject content, pedagogy and technological knowledge expected of a teacher in this case tutor in order to be able to integrate ICT in teaching and learning (Mishra et al., 2011; Schmidts et al., 2009).

The two extracts (1a &b) seem to suggest that tutors at the TC had different interpretations of what ICT integration is. The interpretation of ICT as simply the use of LCD projector and power point application software by tutors is particularly disturbing because it means this is the knowledge they will pass on to teachers and the knowledge teachers will pass on to students as illustrated in the cascade model (figure 2). In relation to the knowledge ladder, a focus on mastery of power point and use of LCD projector lends itself well with basic knowledge and knowledge acquisition levels (Kozma, 2011; Temechehn, 2012).

The qualitative data was corroborated with survey data which indicated a similar result that majority of tutors (83%) agree that they had basic knowledge in relation to Kozma’s knowledge ladder summarized in figure 3 below. In addition (10%) of responses disagreed possessing basic knowledge level of the ladder. This means, they either do not have basic ICT skills at all or their level may be higher than basic knowledge. If they are in higher level, could be tutors whose meaning of ICT integration focused on TPACK as afore explained. On the other hand (7%) were neutral which means they could not make any opinion on whether they are at basic knowledge or at a higher level. It can be noted that, unless tutors’ ICT integration skills are enhanced, their current basic knowledge level may not adequately facilitate ICT integration in their teaching as envisioned by the policy.

Figure 3

Tutors basic knowledge levels of ICT skills

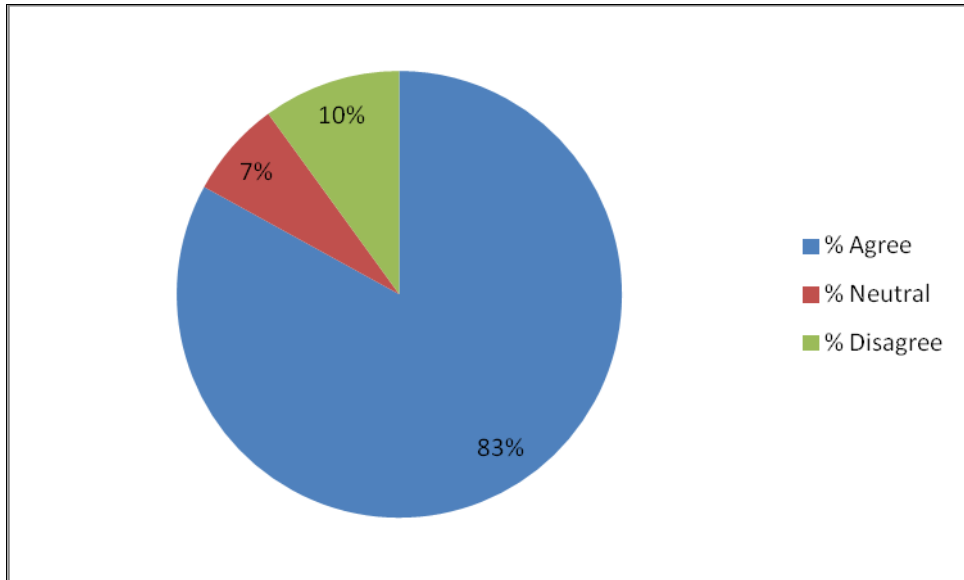


Figure 3 shows tutors responses on their level of ICT integration in line Kozma's Knowledge ladder.

A further clarification of how ICT integration was implemented focused on understanding the strategies tutors use in implementing ICT integration policy. Findings revealed that, tutors strategies for implementation of ICT was influenced by their level of ICT integration skills. Some strategies used like problem solving seemed to have more relevance to ICT integration, while the use of demonstration and creating repository in moodle seemed to be associated with technology skills rather than technology integration in teaching and learning.

Problem solving was noted in the explanation by the head of department for English subject when explaining the use of the language lab in teaching writing skills.

It was explained that:

Extract 2a

"In teaching writing skills, I engage my student teachers in a live discussion forum in the language lab. I post a problem to the forum and student teachers respond to the problem by typing their responses and I type back responses [feedback- My addition] to each of the posts and allow student teachers to reply to responses from their fellow student teachers" (Conversation with the English language department head in the language lab, Researcher's field notes, 25th April, 2012).

My interpretation of extract 2a was that, ICT was used to facilitate problem solving in a writing skill session. The use of the online discussion forum in the lesson seemed to present an attractive scenario for pedagogical integration of ICT in teaching and learning as it created a possibility for learners to develop multiple skills like cooperation, writing

skills and the technology application skills that could help to improve their classroom teaching and learning as intended by the ICT policy in education. The extract presents a similar experience as discussed by Barak et al (2011) who argue that, in problem solving learners cooperate with peers each contributing to the group knowledge according to his/her ability so that at the end of the process the group will reach a reasoned solution together.

Demonstration is one of teaching strategies where by the tutor performs an instructional activity or a process as learners observe. The aim of the demonstration is to provide learners with a concrete illustration of what they are expected to do, how they can best do it and how they can tell when they have used the skill or ability correctly. During the student teachers' FGD, one of participants explained how ICT subject was taught. It was explained that,

Extract 2b

"In ICT subject, the tutor uses a projector to show us steps of doing something in topics like word and excel, we observe and later practice the skills shown by the subject tutor" (FGD, Student teachers 16th April, 2012)

In my interpretation, extract 2b showed that demonstration was one of strategies used to develop student teachers' skills in the use of technologies. Demonstration seemed to be used for the purpose of equipping student teachers with skills to use technologies as part of the ICT subject. What seemed to happen was practicing the use of technologies through technology. In this case, if the benchmark for ICT integration were technology awareness alone, the identified use of demonstration strategy in the ICT subject could have been the best practice.

Another strategy used by tutors to integrate ICT in their teaching and learning is through storage of teaching and learning content in the moodle platform. This was revealed by student teachers when they argued that,

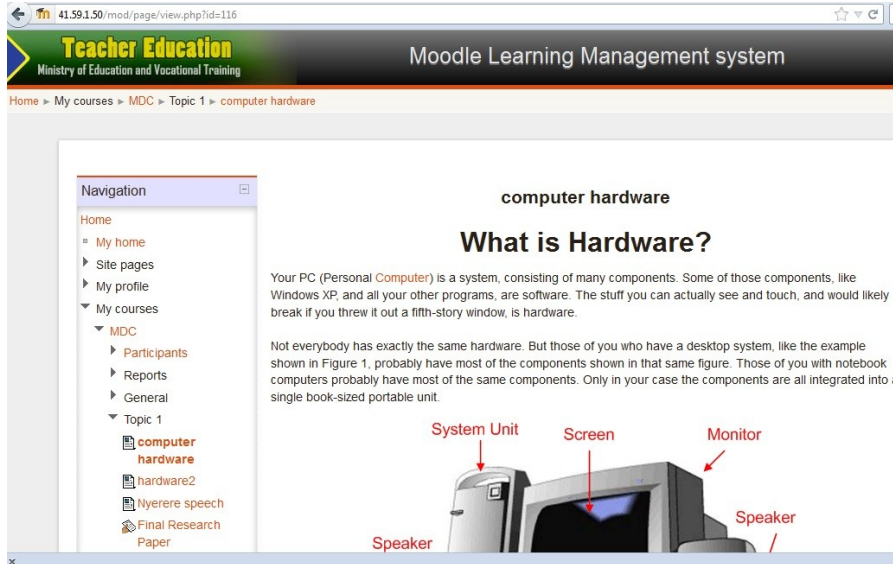
Extract 2c

"We access information about other subjects in the system called moodle ... we get syllabus and other content for different subjects" (Focus group discussion, student teachers, 16th April, 2012).

My interpretation of extract 2c was that moodle was used as repository for content that could be accessed by student teachers during their learning as illustrated in figure 4 below.

This screenshot shows the kind of content stored in moodle repository for teaching and learning content in different subjects. Although availing content for learners to access was important, little evidence could be obtained to substantiate that pedagogical

Figure 4
Teaching and learning content stored in Moodle



Moodle screenshot accessed at Mashujaa TC, (9th May, 2012)

integration of ICT was taking place through moodle. This was because apart from syllabus and content, activities that could demonstrate interaction between tutors and student teachers through moodle were lacking.

Overall extracts 2a, b, and 2c, seemed to reveal that, a great deal of ICT use is left to tutors of ICT subject. Demonstration strategy seemed to be the dominant strategy used in ICT subject lessons. The problem solving strategy (extract 2a) noted in the English language subject was among the very scarce scenarios that could not sufficiently count as ICT integration in the TC. It could have happened in English subject in the process of trying to use facilities in the language lab. Generally pedagogical integration of ICT seemed to be lacking. Findings obtained from analysis of lesson plans (Table 2) seemed to affirm that ICT is not adequately used in teaching other subjects in the TC.

Table 2 presents a disturbing scenario on the implementation of ICT integration in teaching and learning. The data were collected from tutors' lesson plans prepared from February, 2011 to May, 2012. In my interpretation, it seemed that, ICT integration in teaching and learning in other subjects as recommended by the ICT policy in education was not yet the current focus in the TC. This scenario may delay the attainment of competitive human resources for the knowledge economy based jobs as envisioned by the nation.

Table 2
ICT integration in lessons

Subject	No. of lesson involved ICT	Type of ICT used	Comment
Development studies	4	Materials downloaded from Internet	No any URL presented
Biology academic	3	Internet resources	No any reference presented
Biology (Pedagogy)	-	No any ICT cited	No evidence of ICT use
Educational media and technology	3	Internet resources	No any URL presented
Educational research	3	Internet resources	No any reference presented
Geography	2	Internet resources	No any reference presented
ICS	1	ICS syllabus in moodle	Content in moodle
English (Pedagogy)	-	No any ICT cited	No evidence of ICT use
Chemistry academic	-	No any ICT cited	No evidence of ICT use
Curriculum and teaching	-	No any ICT cited	No evidence of ICT use

Source: Analysis of Lesson plans 12th May, 2012

Having identified the strategies used, I then sought to find out the level of ICT integration that tutors afforded. Survey finding indicated that majority of the tutors were at the minimum level of ICT integration, which is Basic knowledge (83% see table 3 below) and Knowledge acquisition (69%). This means that tutors possess basic technology skills. This finding affirms what is found in qualitative data which shows that majority of tutors appeared to express awareness of basic technology skills specifically use of Office application software like word processing, and presentation application as discussed in extract (1a).

Table 3

Tutors rating of level of ICT integration they practice

Construct	% Agree	% Neutral	% Disagree
Basic Knowledge	83%	7%	10%
Knowledge Acquisition	69%	17%	15%
Knowledge Deepening	62%	14%	24%
Knowledge Creation	77%	14%	10%

Table 3 shows tutors' levels of implementation of ICT integration policy in relation to the knowledge ladder. However, effective implementation of ICT integration requires tutors to have mastery of ICT integration skills that can equip them with strategies that adequately combine technology, subject content and pedagogy (Schmidts et al., 2009).

These strategies appeal to knowledge deepening and knowledge creation levels of ICT integration. Contrary to findings in tutors FGD, survey findings indicate that majority of tutors are highly versed with ICT integration skills as (62%) agreed that they integrate ICT at knowledge deepening level, and (77%) agreed that they integrate ICT at knowledge creation level. In my view, the difference could be a methodological weakness attributed to the use of the anonymous questionnaire which lead to attribution bias (participants' tendency to attribute positive outcomes to themselves and negative outcomes to others) (Muijs, 2011). In addition, the high rating in the survey could have been attributed to tutors low level of knowledge of what ICT integration entails. Perhaps the tutors' understanding of ICT integration is based on their prior knowledge on the use of computer office programs, which basically focus on awareness about technologies rather than integration of technologies in teaching and learning. Spillane et al (2002) found that tutors and other policy implementing agents tend to assimilate new knowledge about instruction into their existing framework for understanding. Consequently, the intended outcome of equipping student teachers with ICT integration skills may be constrained.

Due to the aforementioned disparity document analysis was done to shed more insights. I conducted the analysis of tutors' lesson plans (Table 6), which confirmed low ICT integration in teaching and learning in the TC.

Moreover, survey findings indicate a large number of tutors (24%) who disagree about being able to integrate ICT at knowledge deepening level; whereas in knowledge creation (10%) rated disagree. This difference have been caused by rating behaviour of respondents where positive items were rated "Agree" and negative items 17,18, 19 and 20 in knowledge deepening and 26 and 27 in knowledge creation (Appendix A) were rated "disagree". The difference in this case was caused by the number of negative items which were four in knowledge deepening and two in knowledge creation (see summary in Appendix G). This scenario seems to affirm the aforementioned attribution bias (Muijs, 2011). On the other hand (14%) of responses rated on neutral which means, they either can integrate ICT in either knowledge deepening and knowledge creation levels but not in the current practice, or they are not sure of either of the levels. Consequently, the overall findings indicate low ICT integration in the TC.

The study recommends the need for a detailed inquiry on how tutors can be trained to teach in line with technological pedagogical content knowledge (TPACK) which is an important knowledge base for the implementation of the policy on ICT integration in teaching and learning.

The study further recommends the adoption of an alternative model (Figure 5) for preparation of tutors to integrate ICT that will improve on tutors' mastery of ICT integration in their teaching.

Figure 5

Model for tutor preparation for ICT integration

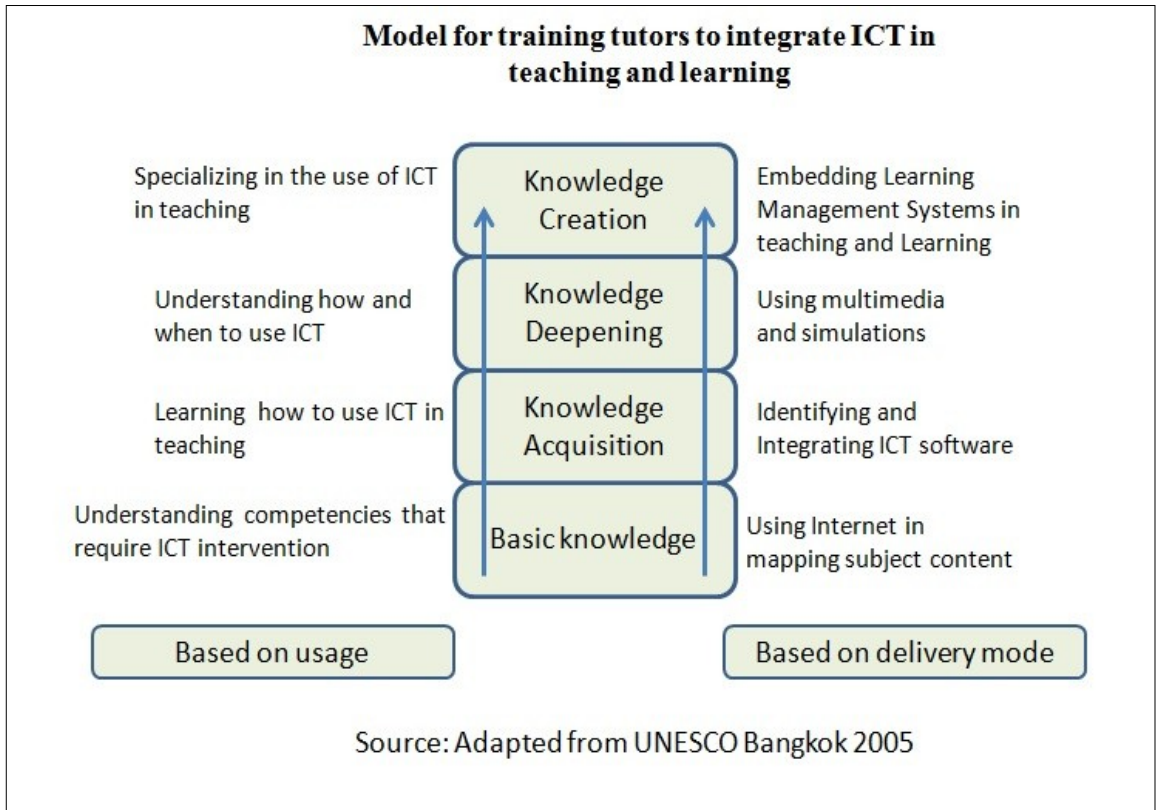


Figure 5 presents an alternative model for training of tutors to integrate ICT in their teaching. The model proposes that ICT integration in TCs follows a dual mode which focuses on both the delivery mode of ICTs used and on the pedagogical use of ICTs. By so doing TCs focus on both ICT as a subject [delivery mode] and ICT for pedagogical purposes [based on usage] and in so doing fulfill the dual intentions of the ICT integration policy of integrating ICT at pedagogical and subject level. In addition, the model also highlights the various levels of ICT integration that tutors would need to cater for to ensure that ICT integration is adopted to levels that can prepare teachers for the knowledge economy. The assumption in the model is that a tutor poses the basic knowledge level of technology literacy as presented in the knowledge ladder (Kozama, 211).

Conclusion

The study reported in this paper intended to ascertain how tutors contribute to the ICT policy in education by preparing teachers who would integrate ICT in their teaching in schools. Overall findings revealed low level of ICT integration in the TC accompanied by low level of ICT integration skills among tutors. The findings further indicate that, one of the greatest challenges in ICT integration in the TC was policy refraction at the

stage of designing ICT syllabi. The current ICT implementation in the TC emphasizes teaching ICT as academic subject and pedagogy for teaching computer studies in schools rather than equipping student teachers with skills to integrate ICT in teaching other subjects in schools as proposed by the policy. The study finally proposes an area for further research and an alternative model for preparation of tutors who will subsequently equip student teachers with ICT integration skills in their teaching in schools.

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Flexible Delivery of Education: The Globalization of Life Long Learning

A Paper Presented at the National Open and Distance Learning Conference, at The Open University of Tanzania, Dar-es-salaam, Tanzania

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Abstract: *In this paper the author provides brief explorations on flexibility in the delivery of education, globalization and lifelong learning. Flexible online, m-learning inclusive, is conceived as the most appropriate means through which globalization of lifelong learning can be realized. Among the issues that are discussed as pertinent to the globalization of lifelong learning are: flexibility in terms of institutions, instructors, programmes, time and space; qualifications in education are no longer measured in terms of paper credentials, but rather on practical outcome-based relevance of what is attained through the education provided; assessment mechanisms in online education is no longer teacher-based or institutional based; learners acquire extensive freedom/autonomy to either engage institutions and instructors or to educate themselves through Open Education Resources (OERs) and other forms of online educational resources.*

Globalized online learning and proposes that relevant contextualized online education has great potentials as a realization of democratization of education on a global scale in accordance with UN's proclamation of education as a human right. It provides a means through which meaningful and relevant innovations in education can be realized instead of current trends where education has become a sustained system of producing technological and scientific products. Globalizing lifelong learning is realizable, while online education provisions contemporary educational technologies and enhanced capabilities for content development, use, distribution, storage, retrieval, updating, and pedagogical alternatives and enhancement.

Key Words: *Flexible delivery of education, globalization, lifelong learning, technology, open and distance learning (ODL), open education resources (OERs), online learning, m-learning, e-learning, learner autonomy/freedom.*

Introduction

The globalization of lifelong Learning within the confines of flexible delivery of education can best be conceptualized when education is considered as a basic right for all human beings. This position is backed and underscored by the UNs declaration of human rights and supporting policies that have featured at international, national and organizational levels. Until very recently, the practice of leaving behind majority of humanity without formal education was a taken for granted norm. There wasn't much hope that this state of affairs could ever be proactively addressed because of great limitations experienced within the dominant hegemonic traditional education systems around the globe. With contemporary Open and Distance Learning (ODL), advanced technologies and the capabilities of such technologies there is hope at the end of the education tunnel! E-learning, online learning and m-learning which characterize contemporary ODL are gradually proving that education can reach most, if not all, individuals wherever they are and whenever they wish to study. The systems provide expansive flexibility ensuring multiple teaching and learning spaces enabled through the

cyber space, computer and m-gadgets screens; speedy completion rates; global outreach; greater choices of programmes, instructors, institutional affiliations and pedagogical approaches. With contemporary systems of ODL; what counts most is individuals' realization of the need to acquire and generate knowledge, skills as well as values that will facilitate 'healthy and prosperous livelihoods'. There is need to cultivate or motivate global populations to have the interest to learn and be aware of what they want to learn. To be able to locate where to obtain the materials/content they want to learn. The rest of the learning processes are then handled through technology capabilities and expert facilitation of lifelong learning.

Globalization

There is no 'one fit all' conceptualization of globalization both as a term and a practice (Mudimbe-Boi, 2002; Peters, 2004; Goodfellow & Lamy, 2009). Some scholars represent globalization as the extension of the crafty imperialistic enclosure of local economies, spaces and political systems (Goodfellow & Lamy, 2009; Un Ulrik, u.d; Miranda, 2011). This consideration focuses on globalisation as disruption of local ownership and enforcement of the instatement of subservient political regimes. Using his working experience with the port industry –dock workers in Sweden, Ulrik (u.d) projects globalization as an indication of unemployment, exclusion from jobs, and a violation of basic human rights. Globalization is typically characterized by 'global ownership and management'. Ulrik further asserts that "the creation of the economy within the global system turns towards biopolitical production of social life in which economic, political, and cultural aspects overlap and invest one another. This situation allows global systems to redefine power relations since governance is executed without strong governments (Dale, 2007). Corporate elites collude with corrupt state governments to lure local populations into trusting multinational investors as competitors although the competition is unlikely and in fact, almost none existent because of unequal socioeconomic and political status or economic levels/clout of the competitors.

The perception of globalization briefed in the preceding narrative provokes interrogation of the new global order of life which gradually cannot conceal its complex reality of furthering deeper social stratifications, social disequilibrium, and in most cases chaos that has continually led to endless wars, loss of lives and ecological destabilization. The new structures that emerge with this way of perceiving and practicing globalization has forced individuals into lifelong learning loops that ensure their survival as they learn and re-learn so as to fit into endless stealthy exploitative innovations that have little or no benefit to the individuals but rather benefits amalgamating and expanding multinational corporations and corrupt political elites (Mudimbe-Boyi, 2002; Goodfellow & Lamy, 2009).

The first perception of globalization calls peoples and governments to interrogate their position in a system where there is "the persistence or recurrence of the binaries colonizer/colonized, center/periphery, empire/its Others, local/global, pre-modernity/modernity, all of which are still prevalent despite a widespread public discourse on globalization [and] ... heterogeneity" (Mudimbe-Boyi, 2002, p. xiii). Our

main focus as we ponder over this perspective is to engage discourse of flexible delivery of education that enables lifelong learning processes capable of generating equity amid global and local diversities that exist harmoniously. The aim should be to initiate and sustain learning processes that eliminate capitalistic greed and establish grounds for the grooming of moral character among 'globalized' (Friedman, 2006) citizens.

The second conceptualization of globalization is advanced by scholars who project globalization as a natural growth phenomenon ensuing from advances in science, technology, business, and multilateral trade (Friedman, 2006; Sachs, 2005). This perception signifies globalization as a normal (or natural) experience leading humanity to development. The perspective takes for granted the inequality that emanate from globalized malpractices; it directs globalization approaches primarily to "the economy, technology, and the media" (Mudimbe-Boyi, 2002, p. xii). Scholars who propagate this perspective overlook the necessity to reflectively critique ensuing disequilibrium emerging from the escalating global system. There is need to ask in-depth critical reflective questions such as: Who is behind the advances of the global systems? Why are such advances made? Who benefits (and who loses) from such advances? What consequent impacts do the systems have over individuals, communities and the totality of existing and changing social cultural structures?

The two perspectives on the conception and practices of globalization show a group of scholars who criticize the system and would wish for alternative globalizations and those who celebrate globalization as a triumph of modernity that should be accepted as an inevitable imperative. Based on these conflicting perspectives, the author advances the need to chart a transformative approach that would allow global citizens to employ flexible delivery of education to engage the citizens to embrace relevant moral lifelong education that equips them with techniques to live and serve with love and care taking from Freire's pedagogy of hope and Vygotsky's concept of learning as pleasurable activity or play through which individuals and communities grow from low to higher levels of development.

Lifelong learning

Similar to globalization, lifelong learning has been conceptualized variedly based on individual (or group) perceptions as influenced by social cultural backgrounds. Lending from a European Community background, Ulrik (n.d) posits lifelong learning as "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within personal, civic, social and/or employment-related perspectives. Lifelong learning begins from birth to death and has the purpose of encouraging individuals to gain and revitalize abilities, interests, knowledge and other experiences. It provides wide opportunities for individuals to value formal, non-formal and informal learning. On these grounds lifelong learning provides chances for those who missed compulsory education and those who did not complete the schooling circle. It is also an avenue for updating and upgrading knowledge, skills and values in a continuum from pre-school to post retirement age. This way of perceiving lifelong learning takes lifelong

learning as a norm, a natural phenomenon within existing social structures. It does not interrogate structural disjunctions that are the causes of schooling stratifications.

From a somehow different perspective lifelong learning is linked to globalization as concerned with promoting learning after graduating from compulsory school systems. This second conceptualization closely associates lifelong learning with adult education and has its genesis in the 1970s when “UNESCO published the ‘Faure report’ (1972) foregrounding ‘lifelong education’ as a means to deal with modernization, economic uncertainty, and technological changes and advances. Lifelong education gradually transformed into lifelong learning which, according to Walker (n.d), coincides with the floating of national currencies, high levels of joblessness, loss of belief in Keynesian economics and in the practicability of the welfare state. In line with this argument, lifelong learning is considered a means of encouraging social inclusion and prevention of social disruptions. Transformations experienced in the economic sector, science and technology creates triggers for lifelong learning which serves unstable economies and troubled social economic equilibrium. Individuals who lose their jobs take refuge in education while seeking for alternative employment. The scientific and technological innovations enable opportunities for technologically enhanced teaching and learning content and pedagogy.

Flexible Delivery of Education

Advances in technology and their ensuing impact on escalating globalization and its consequences have made lifelong learning an unequalled pillar and an imperative of globalization. The two concepts (globalization and lifelong learning) have been considered closely linked to conditions resonating with the global knowledge economy and information communication technologies - ICT (Walker, n.d). ICT constitute the breeding ground for innovations, creativity and flexibility which continuously trigger the drivers to learn as a lifelong endeavor serving the largely shifting and unstable, social cultural ground (Reich, 1992; Martin, 2003). Because of unstable/shifting and insecure employment and the need to acquire knowledge, skills and values relevant to offset the consequences of innovations and shifting jobs; flexible delivery of education has become a necessity to all. Multitasked individuals prefer an education that can be obtained without disrupting engagements which determine individuals and community survival and stability. ICT and Open and Distance Learning, particularly in forms of online and m-learning enable and enhance such flexible education in terms of providing time and space; choice of content, institution, instructors, learning technology and related platforms and out-come based programmes. Within the framework of such flexibility an in-depth consideration of learners’ freedom (autonomy) and potentials from which to choose education content that is meaningful when transferred for life engagements leading to innovations and growth. When this state is achieved bureaucratic red tapes are most likely to be done away with and in their place authentic empowerment to a transformation that enhances self employment and independence can be realized. With effective flexible lifelong learning experiences, individuals are not necessarily forced to labour for other peoples’ profit but rather, they independently open up avenues from

which they freely choose among a variety of profitable socioeconomic and political activities to engage in.

Choice of time: in a genuine global lifelong learning, the learner can study at any time – morning, daytime or nighttime; the choice is determined by learner's convenience and responsibilities.

Choice of spaces: the learner can study anywhere (at home, work, on a journey, at a mall or park). With online/m-learning, the learner is exposed to a one-stop-shop where all sorts of learning spaces are available without the learner having to move away and use costly means. From the learning screen of a computer, a laptop or an empowered handset there is space for: (i) presentation of information content/instruction/directions, (ii) storage of information (iii) retrieval of information (iv) communication with peers/instructors/experts (v) collaboration with the learning community (vi) Browsing for additional/extensive information (vii) access to multimedia (viii) hypertext and hypermedia (ix) simulations and (x) display of virtual reality (Peters, 2004, p. 87). To this list we can add space for (xi) assessment, (xii) research and (x) edutainment (educative music, graphics/simulations and virtual reality). The space(s) that the learners' engage at any moment of their learning is (are) generally determined by the learners' task at a given moment.

Choice of relevant content: With online or m-learning, learners are exposed to massive sources of educational (and non educational) information. Educational content is obvious in content spaces where text books, academic journals/newsletters, and study guides or manuals are deposited for retrieval. These are easily located where learners have access to education facilitators. Where such facilitators are unavailable learners need to be inducted into techniques for surfing web sites with academic credibility in terms of relevance of content to target academic areas and level of target learners. It is worthwhile mentioning the need for facilitators to orient learners to Open Education Resources (OERs) and how to track such materials both online and other educational sources.

Choice of technology and technology platforms: Generally, selection of the technology to use for education purposes is based on four major fundamental aspects: the technology's accessibility, affordability, usability, and efficacy to learning and teaching pedagogy.

Choice of programmes, institution and instructor: With flexible global lifelong learning a learner has great latitude of autonomy with which she can choose a programme she wishes to study. She is not bound to associate with an institution that might restrict her to pursue predetermined programmes or courses. The learners are empowered with the freedom to study only the programmes or courses that they consider necessary for what they want to engage in during and/or after their studies. In a comprehensive online education, qualifications no longer imply paper credentials, but rather what is paramount is the practical output-based relevance of what is attained through education. Assessment mechanisms are no longer institutional or teacher-based, rather they are personalized to the learner's needs given target educational requirements.

On the basis of contemporary global reality, learners have the freedom to engage institutions and instructors for their educational needs or to educate themselves through OERs and other forms of educational sources. The latter has great implications for home based learning during childhood stages and self learning at adulthood. Under such circumstances learning becomes a continuum from birth to death. Additionally, the choice of what is to be learnt (content and pedagogy) is to a large extent determined by learners themselves (at adulthood) or the choice of parents and guardians at childhood stages.

Advantages/Opportunities of Flexible Global Lifelong Learning

Lifelong learning under contemporary multifaceted technological driven and knowledge based economies has multiple advantages and opportunities that can be harnessed for the improvement of peoples' livelihoods. The following list constitutes some of such opportunities.

- Reaching the traditionally unreached citizens for educational purposes through an efficient use of multimedia technologies;
- Enhancing potentials for massifying or democratizing education at all levels;
- Expanding home-based learning for individuals of all ages;
- Encouraging multitasking among citizens, a condition that has the potential to improve the quality of goods and services while reducing production costs since one is provided with facilities to perform multiple activities at a given time;
- Enhancing chances of addressing chronic socialcultural challenges such as poverty, ignorance and diseases (Nyerere, 1974). Or, in the light of UN attaining the eight Millenium Development Goals (MDGs): eradicate extreme poverty, achieve universal primary education, promote gender equality and empower women, reduce child mortality improve maternal health combat HIV/AIDS, malaria and other diseases, ensure environmental sustainability and develop a global partnership for development;
- Expand research, innovations and solutions for common challenges; and
- Expanding opportunities for democracy and empowerment of global and local citizens.

Challenges of Flexible Global Lifelong Learning

Despite the list of opportunities highlighted above, there are several challenges that are likely in a flexible lifelong learning system. Some of such challenges include:

- Limited awareness and competences to appropriately and adequately contextualize available education content and information from global sources to local situations;
- Limited participation (only 1% of research and publication emerge from Sub-Sahara Africa) and control by people from low developed countries over what is available as educational content (curricula) and educational information;
- Limited opportunities to patent local content in low developed countries;

- High possibilities of retaining the current global status quo whereby the already developed countries continue to control the underdeveloped countries because of the differential economic status of the two global spheres.

Conclusion

As can be deduced from the presentations above, flexible provision of education is a historic actuality that can be explored. Flexibility in the provision of education features in a number of issues: time, space, choice of programmes, institutions, instructors, multimedia technology, learner's autonomy and the changing role of teaching to facilitation. Flexible provision of education provides broader opportunities for global lifelong learning as local and global citizens can access education content and information from any location across the globe. Learners can freely decide not to seek for credential and instead just pursue programmes or courses for which outcome they intend to engage in their life endeavors or engagement. The latter empowers learners and enhances learning freedom from bounding schooling systems that reproduce unequal social structures.

Despite the fears expressed above, flexible provision of education and its consequent global lifelong learning should be considered as part of a realization of democratization of education on a global scale in accordance with UN's proclamation of education as a human right. The situation should be applauded as a means through which meaningful and relevant innovations in education can be achieved. It would be erroneous to stick to traditional modes of providing education which has witnessed catastrophic production of technological and scientific killer products, social disequilibrium and chaos! Globalizing lifelong learning can now be realized, thanks to Open and Distance learning, specifically online and m- learning which are enabled through contemporary educational technologies and their enhanced capabilities for content development, use, distribution, storage, retrieval, updating, and pedagogical alternatives and enhancements.

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An Application of Multimedia Learning Theory in Instructional Materials: A Case of Psychology and Special Education

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Abstract: *Multimedia offers exciting possibilities for meeting the needs of Open and Distant learners. The use of multimedia instruction can significantly enhance student learning if properly designed and implemented. This paper investigates the extent in which multimedia, illustrations, interactivity, visibility and vocabulary are presented in Psychology and Special Education study materials so as to enhance readability as well as learning. Four study materials were involved in assessing the presence of illustrations, interactivity as well as text visibility to enhance readability and learning*

Four Psychology study materials were involved including Child Development, Special Education, Personality Dynamics and Principles of Guidance and Counselling. The study employed content analysis as a method of data collection which revealed that the study materials had only 1 percent illustrations, 2 percent interactions, 17 percent visibility while the percentage of vocabulary was found to be 80 percent. It was recommended that Psychology and Special Education teachers should prepare multimedia enriched study materials in order to facilitate learning as well as performance to Faculty of Education students

Key Words: Multimedia, Interactivity, Visibility, Readability, Attribution, Learning, Instructional materials

Introduction

Globally, education remains the most vital strategy for the development of the society throughout the developing world (Aikaman & Unterhalter, 2005). Many studies concur that it is the human resources of a nation that ultimately determine the pace of its economic and social development. Since education is an investment, there is a significant positive correlation between education and social development. When people are educated, their standards of living are likely to improve, as they are empowered to access productive undertakings, which will ultimately lead to an improvement in their livelihoods and the nation at large.

The Faculty of Education is one of the largest faculties of The Open University of Tanzania facilitating learning by distance mode. It consists of both undergraduate and postgraduate programs aiming at improving the qualifications and the effectiveness of serving education personnel, as well as preparing competent new teachers for different levels of education in Tanzania

This study was conducted in the Psychology and Special Education, one of the departments in the faculty of education others being Curriculum and Instructions, Policy, Planning and Administration, Educational Foundations as well as the Department of Adult and Distance Education. Several courses are provided by Psychology department such as General Psychology Learning Attitudes and Motivation, Educational Statistics,

Child Development and Personality, Introduction to special Education, Introduction to Educational Research, as well as The Principles of Guidance and Counselling.

The department consists of well trained and experienced staffs including professors, doctors and lecturers. Most of psychology staffs are highly experienced in teaching several educational levels including primary, secondary, colleges, as well as universities. The department has been providing several services to students including consultation, and preparation of study materials which are available in the OUT Regional Centres. Not only that but also, to enhance the accessibility of study materials to the OUT Distant learners recently the OUT academic staffs (psychology teachers inclusive) in collaboration with the IT department are in the process of making sure that the study materials are easily available online

Student's Performance and Attribution Theory

For some time now, most Faculty of Education students are not performing well in Psychology. Most of them have been scoring so low marks necessitating a repeat of the test or doing supplementary examination and consequently failing to graduate on time. Many factors contribute to failures but Open University students like other students worldwide attribute their failures to teachers (Amani, 2010). This supports the Social Psychological Attribution Theory that success is always attributable to internal factors, while failure is attributed to external factors (Weiner, 1985). The attribution theory assumes that people will attribute their success or failure to factors that will enable them to feel as good as possible about themselves. To avoid negative emotional reactions, people have a tendency to attribute success to their own efforts or abilities, but they tend to attribute failure to some external factors that they do not have control of (Augoustinos, 2005). According to Weiner if the causes are controllable, then people believe that they can alter these causes. But, on the other hand, if people believe that the causes are uncontrollable, they cannot be altered easily. This implies that people's perceptions or attributions for success or failure will determine the amount of effort the person is willing to expend on a particular activity. Impliedly, therefore, people who attribute a cause to external factors are less likely to put more effort on a task than those who attribute internally Kitila and Amani (2012)

A considerable body of evidence exists that individuals often take credit for successes and deny responsibility for their failures. This tendency to make internal attributions for success and external attributions for failure has been referred to as *self-serving bias* (Miller & Ross, 1975) Whitehead, Anderson and Mitchell (1987) found that children attribute their success to ability, as compared their negative outcomes, while, Bar-Tal and Darom (1979) found that pupils attribute successes mainly to external causes while failure is attributed to internal causes. Conversely, according to Bar-Tal and Guttman (1981) pupils attribute success mainly to themselves as well as teachers while their failure is attributed to a number of other causes. Additionally, a study conducted by Abiodun and Owoyele (2011) at Tai Solarin University of Education in Nigeria revealed the following order of causal attributions in academic failure: Difficulty of items, lack of study materials, poor timing and examination timetable, poor infrastructure, poor quality

of facilitators, inappropriate teaching methods, poor examination marking, influence of peer pressure, poor study skills, lack of preparations and low ability. This shows that students attributed causes of their failure more to external factors than internal or self-induced factors. Consequently, students who failed feel mostly helpless believing that they would not have failed if these factors were not there.

Recently, Kitila and Amani (2012) conducted a study at the University of Dar es Salaam on the Perceived University Students' Attributions of Their Academic Success and Failure. This study assessed the applicability of the attribution theory in understanding how students in higher education attribute their academic success and failure. The study specifically assessed the variation in attribution of academic performance between high performing and low performing students. The results show that, high performing students are more likely to attribute their academic performance to internal causes (like their own ability or effort) than low performing students who attributed their failure externally to (to teachers or study materials).

A number of empirical researches and studies support Weiners theory that identified four attribution factors that are related to academic success or failure, namely: *ability*, *task difficulty*, *effort* and *luck*. Effort is the most important factor in which learners can exercise a great deal of control. Task difficulty is an external and a stable factor, which is beyond the learner's control. Though ability is an internal factor, learner cannot control it because it is a stable factor and cannot easily be changed. Moreover, luck is an external as well as unstable factor hence learner have little control over it. Similar situation is happening to OUT students, because the external factors are not controllable to them such results may cause learners to feel helpless and continue to fail year after year.

Meaningful Learning

Students are expected to learn from the available study materials, understand them, and perform well in tests and examinations (Mayer, 2002). Learning does not happen accidentally, there is a role to be played by both the learner as well as the teacher. Omari (2008) described learning as involving a change of behaviour from not knowing to knowing something new or being aware of something new. He further insisted that learning must be accompanied by a permanent change of behaviour as a result of experience and reflection. Hence, *meaningful learning* is deep understanding of the material, which includes attending to important aspects of the presented material mentally, organizing it into a coherent cognitive structure, and integrating it with relevant existing knowledge. Meaningful learning is reflected in the ability to apply what was taught to new situations that is the reason we measure learning outcomes by using tests and examinations (Mayer & Moreno, 2003).

The Concepts of Multimedia and Plain Study Materials

This study aimed at assessing the presence of multimedia in psychology books due to increased rate of failures among education students. Multimedia is operationally defined as an environment that offers learners access to information in a variety of formats,

including illustrations, pictures, text, still images, animation, video, and audio presentations while plain texts include books without pictures or illustrations (Techterms, 2012). It is believed through literature that illustrations and other multimedia motivates the learner while reading and lead to better understanding of the material to be learned (Omari, 2011)

Brain Processing and Multimedia Learning

Information is collected from the environment through our sense organs before reaching the brain. These are the *eyes*, the *ears*, the *nose*, the *tongue* as well as the skin (Omari, 2008). This ability to process information is a multi-step process that involves the perception, attention, selection, organization and integration of information (Sweller, 2005). At the centre of this process is *long term memory*. As the name implies, our long term memory stores our accumulated knowledge which is organized into chunks of information known as *schema*. Schemas allow us to organize information in meaningful ways and help us to integrate and organize new information (Chi, Glaser, & Rees, 1982). In short, our long term memory is where *what we know* is stored and where we integrate new information. If information does not find its way into long term memory, it is lost. Learning can be thought of as change in our long term memory. Before information can be integrated into long term memory it must be received and processed by our *working memory*. Working memory is very limited; it can only handle small amounts of information before it has to be integrated into our long term memory or lost. Miller (1956) suggested that we can only process about seven pieces of information at one time, and, we must do so quickly, as working memory can only keep information for about 20 seconds.

Learning in Plain versus Multimedia Enriched Materials

Effective multimedia presentations take advantage of both the auditory and visual channels in working memory to deliver content. Using multiple channels increases the overall amount of information the brain can process. Moreover, effective multimedia presentations recognize that long-term memory organizes information into meaningful chunks called schema. Presenting information in a way that makes use of existing organizing structures (schema) or that helps students organize the information can greatly assist the learner in incorporating information into long term memory (Mayer, 2005).

Numerous studies have found that students learn better from text combined with pictures than from text alone. Mayer (2005) one of the leading researchers in this area for example, has found that students understand technical machines or natural occurrence better when they learn from text and pictures combined. In this context, words include written and spoken text, and pictures include static graphic images, animation and video. That using both words and pictures is more effective than words alone should not be surprising in light of what we know about how the brain processes information. Research tells us that the use of both words and pictures lets the brain process more information in working memory (Sweller, 2005).

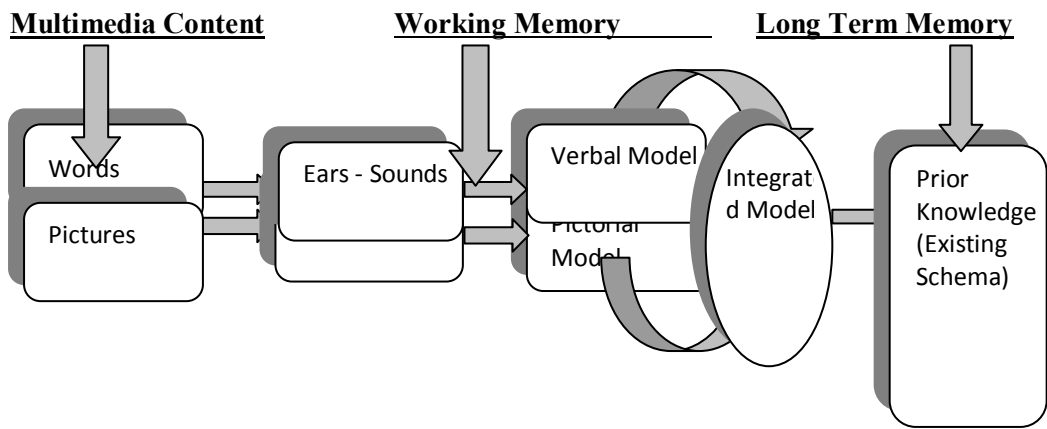
The current standard form of instruction is traditional classroom lecture and plain printed books. It is reasonable to compare learning when the information is presented in the tradition mode and when it is presented in multimedia enriched format. Petitt (1994) compared the two situations where learning information was presented in a traditional lecture to learning the same information presented via computer based multimedia instruction. The students were in higher education, industry, and the military. The information learned included biology, chemistry, foreign languages, and electronic equipment operation. The researcher measured learning using tests of achievement. Over this wide range of students and topics, it was found that learning was higher when the information was presented via computer-based multimedia systems than traditional methods of plain materials

Multiple Channels for Information Processing

Researchers now believe that there are multiple channels in working memory. Baddeley (1992) proposes an *auditory* and a *visual* channel where the auditory channel handles information that is heard, while the visual channel processes information that is seen. Furthermore, Mayer (2005) revealed that written text like the study materials used by our students seems to have unique processing requirements, with words initially captured by the visual channel and then converted to sounds in the auditory channel. This was termed as *duo coding* of information by Allan Paivio of the University of Western Ontario in 1986. According to Paivio (1986) there are two ways a person could expand on learned material: verbal associations and visual imagery. Dual coding theory postulates that both visual and verbal information is used to represent information (Sternberg, 2003). Visual and verbal information are processed differently and along distinct channels in the human mind, creating separate representations for information processed in each channel. The mental codes correspond to these representations and are used to organize incoming information that can be acted upon, stored, and retrieved for subsequent use. Both visual and verbal codes can be used when recalling information (Sternberg, 2003). Building on this theory Mayer (2005) showed diagrammatically how text in book can be enriched by images and consequently enhance learning (Figure 1)

From Figure 1, diagrammatical illustration it is revealed that when printed content is presented together with pictures or other illustrations learning is more effective than the text alone because more than one learning modality are involved whereby verbal model organize words and pictorial model organize pictures before both being integrated together (Mayer, 2005). This implies that learning efficiency is enhanced in enriched texts (multimedia) than text alone which use only one communication channel.

Figure 1
Dual Information Processing Model by Mayer (2005)



The Open University students process information like any other human being in learning from the study materials we prepare. It is obvious that despite of the efforts done by the teachers in providing several study materials the performance is so poor that we are challenged to study on these facts so as to come out with genuine alternatives. This study aims at analysing the nature of Psychology and Special Education study materials available to students and suggests methods of improving them by making them more readable, easy to comprehend as well as learner friendly

Objectives

Under the Open and Distance Learning system where the students have minimum contact with teachers, not only that enough learning materials are needed but they should be readable, learner friendly and motivating to read. Hence, the objectives of this study include:

1. To assess the readability of the selected DPSE study materials
 - Presence of illustrations
 - The number of vocabularies per page
 - The text size
2. To examine the interactivity of the selected DPSE study materials
3. To devise ways of improving the available DPSE study materials

Methods

This study employed content analysis of the selected DPSE study materials including: Child Development, Special Education, Personality Dynamics and Principles of Guidance and Counselling. Content analysis was employed based on the readability of the above mentioned course study materials. The term “Readability” have been explained differently by different authors, Flood (1984) defines readability of a text material as “the sum total (including the interactions) of all those elements within a given piece of printed material that affects the success a group of readers have with it. The success is the extent to which they understand it, read it at an optimal speed, and

find it interesting” (p236). The following criteria for analysis were involved in this study: The number of pictures/illustrations per page; The number of vocabularies per page and; The interactivity of text to the reader

Results

To assess the readability of the selected DPSE study materials

From Table 1 it is revealed that the book titled *Child Development* interact with the learners very minimal. Among the 6 pages assessed only 9 interactions with the learners were observed. Also the book had no a single picture or illustrations related to the content. The number of vocabularies in the pages assessed was 63 while the visibility was only 50 percent which indicate that most of the printed text was faint while some pages were not visible at all.

Table 1

Results from the book titled child development

Assessment Criteria	Pages	No of Interactions	No of Picture	No of Vocabularies	%Text Visibility
	17	0	1	15	80
	53	3	0	8	50
	73	0	0	12	60
	97	1	0	16	30
	133	5	0	12	90
	196	0	0	0	0
Total		9	1	63	50

Table 2 indicates results obtained from the book titled *Special Education*. Six pages were assessed and the following tabulated results were obtained: neither pictures nor interactions were found from the book. This reduces reading motivation and readability of the book. From the assessed pages a total of 129 vocabularies were obtained.

Table 2

Results from of the book titled special education

Assessment Criteria	Pages	No of Interactions	No of Pictures	No of vocabularies	%text visibility
	1	0	0	21	80
	19	0	0	24	90
	89	0	0	22	90
	109	0	0	15	60
	151	0	0	31	60
	160	0	0	16	80
Total		0	0	129	77

Table 2 further reveal that the text visibility was fair as most of the pages scored above 50% meaning that the text is clearly printed.

Table 3

Results from the book titled personality dynamics

Assessment Criteria	pages	No of Interactions	No of Pictures	No of vocabularies	%text visibility
	7	0	0	17	60
	17	0	0	13	70
	38	0	0	4	50
	68	0	0	13	20
	99	0	0	8	90
	136	0	0	13	80
Total		0	0	68	62

As shown in Table 3, the book titled *Personality Dynamics* lack interactions as well as illustrations/pictures. The number of vocabulary obtained was 68 while visibility of the text was only 62%. This indicates that the readability of the text is low

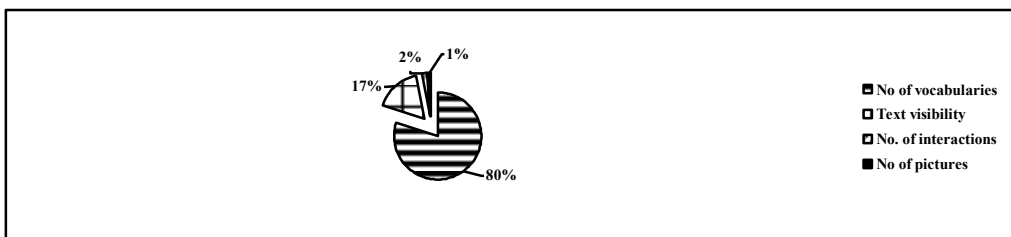
Table 4

Results from the book titled principles of guidance and counseling

Assessment Criteria	pages	No Interactions	No Pictures	No vocabularies	%text visibility
	9	0	0	10	100
	22	0	0	6	100
	59	0	0	8	90
	91	0	2	19	90
	117	0	0	4	100
	142	0	0	18	70
Total		0	2	65	92

Table 4 shows results obtained after assessing the book titled *Principles of Guidance and Counseling*. No interaction was found in the text while only 2 pictures were found on table 2. The number of vocabularies was 65 while the book scored 92% on the visibility criteria. Figure 2 summarises the above results

Figure 2

Study material readability result summary

Discussion

After assessing the selected study materials through the criteria of presence of multimedia including illustrations, number of vocabularies and text visibility most of DPSE study materials were found to have low readability to the learners. The presence of illustrations was found to be only 1 percent. Literature shows that a picture is worth 10,000 words, pictures have indeed various advantages as tools of communication because pictures are not dependant on a specific language, and they are less culturally specific than texts (Schnotz, 2005). The number of vocabularies in the text was very high that is 80 percent while most part of the text was faint with visibility of only 17 percent. Most of these books have been photocopied many times such that some of the text is invisible and some pages are totally plain.

Moreover, when the criterion for interactivity was measured it was found to be only 2 percent. Several authors insist the interaction of the material with the learner in order to enhance memory (Mannes & Kintsch, 2002; Obrien & Myers, 2008). This study shows that only one study material seems to interact with learners by inviting them to the materials and interactions which forced the learners to think critically.

Conclusion

Multimedia learning environments can facilitate and enhance learning processes. However, multimedia instruction does not automatically happen. The development of multimedia instructional materials requires more facilities including, financial and human resources compared to delivering information through a single medium. Therefore as lecturers in the ODL system we have to decide carefully on how many resources should we invest into creating books especially for psychology teachers. Basically, the essence of multimedia design lies in the fact that the teacher is aware of what goes in the mind of the learner when learning through single as well as multiple sense organs as in multimedia. Psychology teachers are aware of the major learning modalities where most of them should be involved during studying, if we want our learners to perform better then let us prepare such enriched materials.

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Challenges of Teaching and Learning Through Open and Distance Learning (ODL) System: The Case of the Open University of Tanzania

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Abstract: *Like in other countries higher and technical education through Open and Distance Learning (ODL) in Tanzania is increasingly becoming popular. Teaching and learning through ODL has also been recognized to be effective in practical application of the acquired knowledge, skills and competences. While recognizing the potential of teaching and learning through ODL, this paper acknowledges existence of challenges that need to be identified and analyzed so that viable solutions to address them are sought and implemented. It also explores some ways to stimulate innovativeness and creativity in teaching and learning through ODL for the purpose of enhancing the efficiency and effectiveness of ODL programmes. The paper is based on a recent research on the challenges of teaching and learning through ODL at the Open University of Tanzania (OUT) which investigated the challenges that OUT was facing and the initiatives it was undertaking to combat these challenges. The findings of the research indicated that there were challenges in the areas of: ODL qualifications of both academic and supporting staff; production and distribution of study materials; infrastructures for teaching and learning, student attitudes and expectations; student support services and assessment. Initiatives by OUT to meet these challenges included introduction of staff ODL induction course; developing and encouraging staff and students to use e-learning materials, teaching computer courses to students and potential students; collaboration with other educational institutions at national, regional and global levels; the use of students portfolio and participating in the development of a national ODL policy.*

Key words: Teaching and Learning, Open University of Tanzania, Open and distance Learning, Challenges, Initiatives

Introduction

In contemporary times, the potentials of teaching and learning through Open and Distance Learning (ODL) including widening access, reducing some barriers to education, flexibility and the learner friendly approaches to teaching and learning are increasingly acknowledged. While recognizing the potential of teaching and learning through ODL, this paper acknowledges existence of challenges that need to be explored, identified and analyzed so that viable solutions to address them are sought and implemented. The paper is based on a recent research on the challenges of teaching and learning through ODL at the Open University of Tanzania (OUT) which investigated the challenges that OUT was facing and the initiatives it is undertaking to combat these challenges.

The study employed a mixed/eclectic methodology to obtain and analyse both quantitative and qualitative data. The target population of the study was all OUT staff and students, however, only 50 staff and 50 students were included in the study sample. Cluster sampling and purposive sampling were used to select respondents to ensure

representation of regional centres and headquarters, male and females as well as those who are well informed on issues (e.g. Directors of regional centres). Questionnaires, interviews and document review research techniques were employed to collect data. The study included collections of both primary and secondary data. The primary data were obtained through interviewing, tutors and students and the Directors of the regional centres. The Directors of the Regional Centres were given the interview guide. Some of the information on the centres was obtained from Deputy Vice Chancellor Regional services and Learning technologies' office. Students were asked about their attitudes and expectations on ODL, support services, computer access, their ICT skills and internet connectivity; and issues related to the continuous assessment, examination and feedback. Secondary data were also gathered from the Facts and Figures, these included information on trend of study material production, as well as student enrolments

Teaching and Learning Through ODL at the Open University of Tanzania

The Open University of Tanzania was established as a single mode ODL institution by the act of Parliament No 17 of 1992 which was replaced by the Universities Act in 2005. OUT became operational in 1994 with 766 students in the faculties of Education and Arts. According to OUT facts and Figure (2010) publication, by 2009 OUT had an enrolment of over 31,793. As a single mode ODL institution most of the teaching and learning at OUT is through ODL. The teaching and learning strategies include the use of study/ instructional materials mainly in print form, face to face contacts, and e-learning and other technology assisted techniques. Successes of OUT notwithstanding teaching and learning through ODL pose challenges which are briefly discussed below. The challenges range from those related to production and distribution of study materials, staff qualifications and competences in ODL techniques, the Physical and ICT infrastructure, the mindset towards ODL and limited (or lack) of awareness of the potentials of ODL, the students' expectations, learner support services and assessment.

Challenges Related to Possession of ODL Qualification for Both Academic and Supporting Staff

Effective teaching and learning through ODL system requires both academic and supporting staff to have at least the basic knowledge, skills, and competences for providing appropriate support services to students. Laymaman (1999) observes that few academicians who are employed in open and distance learning institutions have pursued ODL as their career. The status of OUT staff in terms of having ODL qualification concurs with Laymaman observation. Very few academicians (3 out of 135) and supporting staff (1 out of 102) in the regional centres had formal training in ODL. Table 1 below illustrates the case by indicating ODL qualification from selected Regional Centres.

Substantial portion of the OUT staff not possessing formal training and/or ODL qualification implies that most of them have to learn and acquire the basics and principles related to ODL system through on job training in terms of seminars or workshops. However, when asked how regional centres orient and/or equip the staff with knowledge and skills for writing standard instructional materials, conducting

assessments, and provision of support services for students the responses included use of staff meetings and peer learning as the main methods through which the staff get

Table 1

ODL qualification for OUT staff from selected Regional Centres

Regional Centre	Academicians	Academicians with ODL qualification	Non academicians	Non academicians with ODL qualifications
Arusha RC	4	None	7	None
Morogoro RC	6	None	4	None
Mara RC	3	None	2	None
Zanzibar RC	8	2	10	1
Kinondoni RC	14	1	11	None
Ilala RC	11	None	3	None
Shinyanga RC	2	None	4	None
Temeke RC	10	None	3	None
Tanga RC	6	None	8	None
Dodoma RC	11	1	1	None
Manyara RC	3	None	6	None
Iringa	8	None	6	None
Kilimanjaro	6	None	5	None
Njombe	3	None	3	None
Coast	5	None	4	None
Mtwara	2	None	4	None
Lindi	4	None	3	None
Mwanza	8	None	6	None
Kagera	6	None	2	None
Mbeya	5	None	3	None
Geita	1	None	1	None
Katavi	1	None	4	None
Pemba	3	None	4	None
Singida	2	None	9	None
Tabora	3	None	1	None

oriented to the basics and principles related to the teaching and learning under ODL system. The seminars are short and not regular. One junior academic staff reported:

"I was employed in 2006 as an academician, I never had Open and Distance Learning qualification, I do all the responsibilities which are supposed to be done by an academician at the higher learning institution like teaching including setting exams, invigilation, marking the papers, research as well as consultation. In teaching I also wrote a study material on a certain subject, but in this activity I got a little knowledge on how to undergo writing I got that knowledge from the seminar held in Tanga..."

Lack of a clear or formal system for orienting and/or equipping the OUT staff with the basic knowledge and skills related to teaching and learning through ODL system can

partly account for the shortage of study materials for the students. OUT staff lacking training and skills on principles of ODL must be considered among the top priority challenge to be addressed for two reasons. First, it is a problem which is caused by other perennial problems particularly inadequate funding and subsequent shortage of IT facilities and services. Secondly, it may render the staff to develop sub-standard study materials and provide inadequate student support services which are core elements of teaching and learning through ODL system in which the OUT operates.

Challenges Related to Production and Distribution of Study Materials

In spite of the fact that the OUT has clear policy and elaborate guidelines for standards for writing and distribution of study materials for its students, there remains some challenging which hinder effective and efficient production and distribution of study materials. Lack of possession of ODL qualifications, issues of publication and printing as well as the distribution process significantly contribute to challenges of production and distribution of study materials. In case of ODL system where students have limited opportunities for face to face teaching and learning interaction with their tutors the study materials have to be effectively designed for self teaching and learning. As Carrols (2004) observes the study materials must be written in a very clear manner, permit learner-material interactive teaching-learning session, relevant and available in appropriate ways. This requires competences of the study material writers, designers, editors and printers.

As stated earlier most of the academic staff who joined OUT lacked competences in study materials writing, there was only one qualified designer; the publication unit was understaffed with only two editors and one typesetter; printing takes a long time due to lack of capacity of the commissioned printers and lack of a print unit at OUT. Consequently, production of study materials was slow.

Despite increase in faculties, programmes and students the production of study materials has been slow. Insufficiency of study materials for students except for the MBA executive and ICT degree programmes was reported by all OUT regional centres.

The findings also indicated that shortages of study materials for students in the regional centres appear to be caused not only by low production in relation to the students' requirements but also due to the defects in the distribution process. For instance, some regional centres reported to be supplied with study materials which they did not immediately require while the same study materials were not available in other regions where they were needed. The fact the study materials are in print form and bulky result into budgetary constrains in terms of transport costs. The move to distribute study materials in electronic form by CDs can be helpful but a substantial number of OUT students particularly those in rural or semi urban places cannot access materials on CDs because of limited access to computers, lack or limited electricity power supply and general lack of ICT skills. The study by Muganda *et.al* (2010) on the use of TESSA materials by OUT students pursuing Diploma in Primary Teacher Education (DPTE) revealed that the majority (90%) do not have computers at home or at work places.

Those students who used the internet services to access the materials reported that it was too costly for them to afford on regular basis.

Challenges Related to Infrastructures for Teaching and Learning Through ODL at OUT

Open and distance learning system requires a variety of adequate and appropriate infrastructures to provide various services effectively at different phases of ODL students' life cycle. Infrastructures in the context of the OUT teaching and learning through ODL include institutional land ownership, possession of buildings, PC laboratories, lecture/examinations halls or classrooms, vehicles, computers, print and photocopy unity and furniture (RSP, 2006).

i) Land and Buildings

The implications of OUT not having its own buildings in some of the regional centres breed a number bottlenecks which include:

- Lacking spacious Headquarter and Regional Centre Head Offices which in turn makes it difficult for OUT to develop permanent ICT infrastructure, adequate storage of materials and enough space for face to face activities which are crucial for the teaching and learning through ODL mode in which the OUT operates.
- The OUT relying on renting and hiring of building and facilities result into substantial running costs which in turn reduces its own financial capacity to implement some of the planned construction and/or rehabilitation of buildings which it could otherwise afford.

ii) Laboratories,

To date the Open University of Tanzania has no single laboratory for conducting science practical activities for its students pursuing undergraduate and postgraduate science degree programmes. Currently OUT hires the SUA and UDSM laboratories for practical training as well as for conducting the students' continuous assessments and final examinations. Hiring is an inconveniences to OUT in terms of scheduling of practical teaching and learning as well as assessments/examinations timings because programmes of the other institutions take the first priority. Loss of the opportunity for OUT to train its own staff in particular, laboratory technicians is another consequence of the OUT not possessing its own science laboratories.

iii) ICT Infrastructure

ICT infrastructures in terms of computer rooms and reliable internet services particularly for online interaction between students and tutors and other supporting staff for teaching and learning, assessment, and administrative purposes are very important in teaching and learning through ODL.

When in place, ICT infrastructures facilitate handling large number of users. Data in Table 2 indicates that only one regional centre was possessing a computer room

Table 2

Status of infrastructures at selected regional centers.

Regional center	Ownership	Library	Computer rooms	No. of Computers	Access to Internet
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Morogoro	Hired	NIL	NIL	3	YES
Arusha	Hired	NIL	Available	4	YES
Mara	OUT	NIL	NIL	1	Unreliable
Zanzibar	Hired	Available	NIL	2	YES
Kinondoni	Hired	NIL	Available	43	Unreliable
Ilala	Hired	NIL	NIL	7	unreliable
Temeke	Hired	NIL	Available	10	unreliable
Tanga	Hired	Available	Available	10	unreliable
Rukwa	OUT	Available	Available	10	YES
Manyara	Hired	Available	Available	10	Reliable
Shinyanga	Hired	NIL	2	31	Reliable

with computers connected to internet, majority 19 (83%) of the regional centres suffer from unreliable access to internet services. Moreover, great proportion of the regional centres possess number of computers ranging between 1 and 4 in total and in such cases it was reported that the few computers available are accessed by respective Regional Centre Directors and Secretaries. This implies that academic staffs in such centres have to rely on their personal computers and students do not have access to computer and/or internet services provided or available at their respective centres.

iv) Library facilities

The interviews with few students from three regional centers indicated that, the national library centres do not have adequate resource to satisfy the OUT students' demands. "One may find one book of reference for only one course" the student stated.

Mindset and Awareness of the Potentials and Support for ODL System

The position and awareness of the potentials of ODL systems can be observed by looking at different declarations at global and regional levels. For instance United Nations Millennium Declaration of 2000 and its eight Millennium Development Goals and the New Partnership for African's Development report of 2005 do not stipulate directly the ODL and its potential contribution to national development (WB 2011). However, this can also be observed in Tanzania's Education policy and Training of 1995 which do not even mention the sector of Open and Distance Learning. To date there is no comprehensive National ODL policy. For over twenty years the national ODL policy has not moved from the draft stage.

Limited Collaboration Among Institutions Providing Programmes Through ODL

There are a number of institutions in Tanzania providing education through ODL. In the Regional Meeting of focal points in Africa and the Mediterranean which was held in Lilongwe Malawi May 22-23, 2008, Mahai (2008) highlighted institutions which provide open and distance learning in Tanzania. Apart from The Open University of Tanzania the institutions included: Institute of Adult Education (IAE) Tanzania, Sokoine Agricultural University (SUA), The Ministry of Health and Social Welfare (MoHSW),

Health and Sanitation Water (HESAWA) and Centre for Development in Health (CEDHA), Tanzania Global Development Learning Centre (TGDLC), South African Extension Unit (SAEU), Ministry of Education and Vocational Training and The Development of Educational Management (ADEM). These and many others across the borders are working alone. A number of conventional universities are also offering courses through ODL. The challenge is that most of them are working in isolation. There is no network of ODL institutions to foster collaboration, monitor and evaluate or set standard frameworks based on ODL criteria. Consequently, ODL programmes, including those of The OUT are subjected to quality assurance criteria based on conventional settings.

Challenges Related to Students Attitudes and Expectations

Most of the students have experiences in conventional ways of teaching and learning so their expectations are based on their experiences. For example, the students expect everything to be taught by the seminar facilitators as conventional students. This happened due to the misunderstanding of the concept of ODL and lack of study skills at the beginning of their programme. As a result, they always lodge many complaints on many issues which sometimes are not real.

Insufficient preparation of students for self-study and time management. Distance learning requires that students be self-motivated to study and self-directed in their learning. This modality is new and difficult for some students. Tutors who were interviewed stated that students in Tanzania are ‘not used to being self-motivated learners’. Four tutors from ICE stated that students needed training on how to learn through distance learning. . As one third year student reported:

“Students need study skills that will help them find resources on their own and for those who have been employed to balance their time for work, home, and study effective”.....sometimes we fail to manage our time because at first we were not given orientation on how to study through open and distance learning..... I think in Tanzania it is a new system, we are familiar with University of Dar es Salaam where students enter in class and are taught.”

Students also cited difficulty with finding materials on their own either because of infrastructure issues or their inability to find an internet site.’ The problem for provision of skills and knowledge for open and distance learning could be provided during orientation. From the interviews done students claimed not to have been given such knowledge, however some blamed the management not organizing the orientation properly, especially in making sure that all respective teachers are available for any question which will arise from students.

Inadequate Student Support Services

In open and distance education student support is the most critical factor influencing student success (Keast, 1997) because it overcome the negative effects of isolation and

lack of regular contact between the distance learner and the tutor, and in doing so different forms and channels of interactions are created.

In a conventional learning situation, interpersonal interactions are usually termed as teacher/student, student/teacher and student/student relationships. In an entirely distance learning mode, direct contacts of this kind are on rare occasions, almost always compromised. ODL students may be bogged down by unsolved scientific or pedagogic difficulties in their learning process, by discouragement and demoralisation or by doubts that they are following the right path in the process of knowledge acquisition. Student support mechanisms should be designed to overcome these difficulties. By creating opportunities for contact between students and the teaching system, questions can be asked and answered, advice provided and moral support given whenever needed. Some virtual substitutes can also assist. At The OUT Mail and telephone have been used as main means for these interactions.

The Student support service includes; counselling services, access to library and laboratory materials and timely feedback to students on their performance. According to Tait (2000) the primary functions of student support are proposed as being threefold:

- **cognitive:** supporting and developing learning through the mediation of the standard and uniform elements of course materials and learning resources for individual students;
- **affective:** providing an environment which supports students, creates commitment and enhances self-esteem;
- **Systemic:** establishing administrative processes and information management systems which are effective, transparent and overall student-friendly.

From the interview done with the kinondoni, Temeke and Ilala regional centres, students claimed that the service is somehow not encouraging because the information provided by the non academic staff is not enough for a person to make a decision;

“ for example I am a second year student at.... regional center , if you go to supporting staff and ask them about anything on what to study, at what time a person can postpone the exam , these people do not give the right information”

Students lack basic computer skills, access to computers and the internet. Limited skills in the use of computers and the internet pose significant additional challenge in teaching and learning for all distance learning programme. Nearly all students interviewed did not have computers. Only 1 student out of 20 students interviewed had a computer at home. Given this unavailability of computers, students reported accessing them at internet cafés, but this was expensive at TSH 500 up to 1000 per hour. Moreover, students need training on how to access online libraries since printed materials are so limited. Students also appear to use e-mail infrequently. Ten students said they don't use e-mail because it 'takes too much time' and they have other activities

to be done. Sometimes, computers at the regional centres are not working or use a system which the majority of the students have no skills to use it. For instance, in some students indicated that some computers (about 30 computers) at their regional centre have sun system, which students acquired specific knowledge on how to use them.

Challenges Related to Continuous Assessments, Examinations and Feedback

Interviews with some students have indicated that although things have improved and they are getting the results of their timed test; marking is still not good because some pages are skipped without being marked. They explained that they wanted to see some comments on each page. The examination timetable is one of the aspects that are making students not to perform well or complete their studies as planned. A third year student complained that

“One may find three subjects colliding. As a result students opt to do one subject per session, consequently take longer to complete studies..... This is also causes confusion in studies.”

Students indicated that the face to face sessions which are held once a year are not enough in terms of time. They explained that most of the time is used to fill in students' portfolio

Out Initiatives to Meet the Challenges

The above discussion has explicated the challenges of teaching and learning at the Open University of Tanzania. The discussion indicates that challenges of teaching and learning through open and distance learning (ODL) system have implications to a number of stakeholders ranging from government, to institutions, faculties, regional centres, staff and students. The following are some ways the OUT can or have employed to stimulate innovativeness and creativity in teaching and learning through ODL for the purpose of enhancing the efficiency and effectiveness of ODL programmes of the institution.

Open and Distance Learning Staff Orientation Course. In an attempt to build capacity of staff in ODL teaching and learning knowledge skills and competences OUT made comprehensive staff orientation to teaching and learning through ODL program compulsory to all OUT academic staff. However there are members of staff who are not yet participating in this programme. OUT need to encourage and motivate staff to undertake the orientation programme. The programme should also be extended to support staff so that they also can effectively provide student support services.

Infrastructure. In regard to land and buildings OUT has made good progress. The OUT has already acquired an expanse of land in Bungo-Kibaha in Coast Region which is planned for headquarter administration, amenities such as printing press, storage facilities for instructional materials, accommodation for students during face to face and examinations activities. In addition, the OUT management has also acquired land which it intends to distribute to the OUT staffs for the purpose of building their residences near OUT Headquarters an aspect which among others will be a retaining incentive of the

staff. The OUT also has managed to purchase plots for its five regional centres, namely, Rukwa, Manyara, Lindi, Kigoma and Mtwara which are yet to be developed (RSP, 2006). Furthermore, OUT has managed to secure permanent buildings for its five regional centres, namely, Singida, Mbeya, Iringa, Kilimanjaro and Ruvuma. Despite these good moves toward developing OUT own physical infrastructure, financial limitations for construction of buildings in the acquired land and rehabilitation of the acquired buildings to suit OUT operations or activities remains the fundamental bottleneck towards greater progress.

Assessment, Examination and Feedback. Regarding assessment, examination and feedback, the OUT has made a change in its assessment procedures. Before there were two assignments, two tests and one annual examination carried. In 2010 there was a change the two assignments were replaced by a Students Progress Portfolio (SPP). Currently assessment comprise of one test which carries 30% marks and annual exam carries 70% marks. In 2009 there was an establishment of the Directorate of Examination Syndicate (DES) which deals with all matters concerning examinations including uploading of the results into SARIS.

Collaboration and networking with ODL institutions. OUT is taking a leading role in the Distance education association of Tanzania (DEATA) - an association that brings together ODL stakeholders. The OUT is also actively participating in the development of the national ODL policy. The OUT, its staffs and students are involved in various networks and a number of agreements have been signed. These are assisting in enhancing collaboration.

ICT skills and e- learning. OUT has made ‘The introduction to ICT‘ course is compulsory to all students. Some staff have been trained in teaching through e- learning

Way Forward

From the deliberations above the authors of this paper concludes that ODL institutions are making a commendable contribution towards widening the opportunities for higher education. They need to strengthen the potentials of ODL by understanding the challenges in particular those which affect teaching and learning. Therefore there is a need to enhance research in ODL issues; more collaboration with other ODL institutions is important so that experiences and good practices are shared. Assisting students to learn how to learn through ODL and strengthening the regional centres as well as improving ICT and Library infrastructures is important ensure that learners are learning.

Other initiatives include Instituting capacity building mechanisms to enhance competences in instructional materials writing, design, production and delivery as well as distribution of instructional materials; employing multimedia approach to delivery of teaching and learning. Use a variety of technologies so that learners can have a choice to use what is available in his/her immediate environment; and More marketing of OUT programmes, itself and ODL to ensure change of mindset on ODL.

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Potentiality, Challenges and Prospects of Mixed Mode of Delivery of Higher Education in Tanzania: The Case of the Open University of Tanzania and the University of Dar Es Salaam

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Abstract: *In the 21st century trends in the delivery of higher education indicate transitions towards a mixed mode. Conventional institutions are increasingly employing open and distance learning (ODL) methodologies; while ODL institutions are acquiring more conventional characteristics. This paper analyses the potentiality, challenges and prospects of mixed mode of delivery of higher education in Tanzania. The paper is based on a recent research entitled: 'Challenges and Prospects of Transitions towards Mixed Mode of Delivery of Higher Education: The Case of The Open University of Tanzania (OUT) and the University of Dar Es Salaam (UDSM). Eclectic methodology was employed to collect and analyse data from 100 purposively selected respondents from the OUT and UDSM. The findings obtained through interviews, questionnaires, and document review indicated that increasing demands for higher education, developments in ICT, dwindling funding and changing characteristics of students are some of the forces behind the transitions. The benefits include: expanding access to a variety of students; generating more funds, better utilization of resources and competitiveness. The challenges included: mandates; less expertise in ODL; limited (or lack of) infrastructure, administration and management and ICT related challenges. Enhancing collaboration and partnership; sharing experiences, collaborative research; capacity building in requisite expertise and review of mandates are some of the recommended strategies to harness the mixed mode for the betterment of delivery of higher education in Tanzania.*

Introduction

Towards the end of the 20th century, growing demand for higher education in Africa together with developments in ICT created a shift in modes of delivery in favour of Open and Distance Learning (OECD 2011). Single mode institutions such as The Open University of Tanzania were established; while some long standing conventional universities like the University of Dar es Salaam, decided to pursue a dual mode; offering some parallel programmes by distance while maintaining the conventional mode. However, trends in the approaches to delivery of higher education in the 21st century indicate transitions towards a mixed mode.

Conventional institutions are increasingly employing open and distance learning (ODL) methodologies including less face to face, satellite campuses, more asynchronous interactivity hence becoming more open and flexible. Open and distance learning (ODL) institutions on the other hand are acquiring more conventional characteristics. Intensive face to face, more synchronous interactivity, residential programmes and on campus study arrangements are some of the manifestations of this shift. There is a need to understand these phenomena so that they can be harnessed for the betterment of higher education in Africa. The major questions that are addressed in this paper include what are the forces behind these transitions, which are the benefits and challenges and how can the phenomena be harnessed for the benefit of higher education and the

development of Africa? The deliberation in this paper is based on a recent research entitled: ‘Challenges and Prospects of Transitions towards Mixed Mode of Delivery of Higher Education: The Case of The Open University of Tanzania (OUT) and the University of Dar Es Salaam (UDSM)’.

The study aimed at investigating the phenomena of transition to the mixed mode and how it may be harnessed for the betterment of higher education. The objectives of the study were to: Identify forces behind the transitions to mixed mode; assess benefits of the transitions, identify challenges of the transitions; and suggest strategies to harness the phenomena for the betterment of provision of higher education in Tanzania

The Open University of Tanzania and the University of Dar es Salaam were purposefully selected to be the area of study because in Tanzania each one of them is the founder university for the single mode and conventional mode respectively. History informs us that the University of Dar es Salaam was first established in 1961 as a College of the University of London and in 1963 it became a Constituent College of the University of East Africa. In August 1970, it became the first national University, named ‘The University of Dar es Salaam’. Since its establishment it had been implementing the teaching and learning process through the orthodox approach (UDSM, 2007). On the other hand, the Open University of Tanzania was also the first University in the country to undertake the teaching and learning process through the open and distance learning mode. The OUT initially was established in 1992; however the institution became an operational entity in a year later (Wikipedia, 2012).

In the study random purposive sampling was employed to select academic staff and students. This sampling procedure was used because academic staffs are the implementers of this new approach and students are the targeted consumers. There are mainly two research approaches, quantitative and qualitative paradigms (Opie, 2007). In this aspect the study employed an eclectic approach, thus attributes from both quantitative and qualitative paradigms were applied. It was considered that the use of components from both paradigms would complement each other. As Borg and Gall (1989) observed, in many cases the combination of the two approaches is superior to either one. Generally, in this study the research techniques comprised questionnaires, personal interviews and the document analysis

Conceptualization of Key Terms

This paper is guided by some key concepts in the delivery of higher education including single mode, conventional mode and mixed mode. It is therefore important to understand how these concepts are used in the paper.

Conventional mode. Refers to full-time teaching and learning through on-campus face-to-face approach. Some scholars prefer to identify it as a residential education (Mushi, 2001). Most of the worlds’ universities fall in this category. For the case of Tanzania universities such as Dar es Salaam University, Dodoma University, ST Augustine University to mention a few fall in this category..

Single mode. Refers to a wholly dedicated open distance learning (ODL) institution. Open and distance learning is a flexible approach to delivery of education to those who are unable to undertake full-time study for a variety of reasons including socio-economic responsibilities. ODL can be referred to as the learning approach that focuses on freeing learners from constraints of time and place while offering flexible learning opportunities. For many students, open and distance learning is a way of combining work and family responsibilities with educational opportunities (UNESCO, 2012). Ideally, in a single mode ODL institution most of the learning process is conducted by someone geographically removed from the learner, with all or most of the communication being conducted through a variety of media. The 'open' nature of distance learning might be formally institutionalized in such policies as open admissions, and freedom of selection of what, when and where to learn. The openness of distance learning is also seen in relatively flexible organizational structures, delivery and communication patterns as well as the use of various technologies to support learning. For the case of Tanzania, The Open University of Tanzania is the one which is categorized in this group.

Higher learning institutions which are described as *dual mode* universities generally teach both full-time students on campus and part-time students at a distance. Both types of student follow the same syllabus, take the same examinations and therefore are judged by the same standards. On-campus students may benefit from the use of teaching materials which have been developed for distance learners. Teachers have the stimulus of face-to-face teaching and might have a greater variety of jobs than in a single mode institution, where there is usually more specialisation. Distance education services may be handled in a special, separate unit with staff whose sole responsibility is teaching at a distance. Essentially, in dual mode institutions, distance education is incorporated into the structure of a traditional university, although dual mode universities often have specialist distance educational administration and student support systems.

Mixed mode. Is a description which may be applied to a variety of different teaching methods operated by one institution. Farnes (2000) presents three different variations of a mixed mode organization. One method is 'integrated', when on-campus students use distance learning materials as part of their courses; another is 'parallel' when students take both on-campus and distance learning courses at the same time and yet another is 'sequential', when students take on-campus courses followed by distance learning courses (or vice versa). Further variants are possible, such as offering distance learning students occasional lectures or tutorials, or supporting on-campus learners with ICT material which they can use independently. In mixed-mode institutions staff normally teaches both on- and off-campus students. Defined in these terms, mixed mode includes a large category of higher education institutions which are increasingly incorporating ICT in their teaching and learning process. Many traditional institutions are incorporating elements of the technologies into their traditional course offerings to enhance learning and provide greater flexibility of delivery. These blended courses have further blurred the distinction between ODL and traditional learning.

Evidence of Transition Towards a Mixed Mode

At the Open University of Tanzania (OUT). The evidence of the transition from the single mode of delivery which is ODL to the mixed mode is currently very ubiquitous at the Open University of Tanzania. The university is now having different courses which are offered through both: ODL and conventional approaches. For example, OUT (2011) points out that there is an intensive face to face program in courses such as Diploma in Primary Teacher Education (DPTE) in the Institute of Continuing Education (ICE) and Executive Master of Business Administration (MBA) by the Faculty of Business Management (FBM). Also in FBM there is a presence of a residential programme in courses such as MBA evening which is centered at Dar es Salaam and MBA executive which is currently offered in Arusha, Mbeya, Mwanza and Zanzibar and the prospective Master of human resource management (MHRM) in evening mode is expected to be centered in Dar es Salaam. In addition to that, the OUT through the Faculty of Science, Technology and Environmental Studies (FSTES) is also offering the Bachelor of Science Information and Communication Technology (BSC ICT) through intensive and regular face to face and laboratory sessions methodologies. To pursue this course the students are required to acquire the residence in Dar es Salaam and to complete the course within three years, hence atypical approach of a conventional model. Furthermore, when one comes to the OUT headquarters and even in some of the OUT regional centers he/she finds some campus study sitting arrangements such as the tents which are encouraging full-time study and intensive face to face interaction among students.

At the University of Dar es Salaam (UDSM)

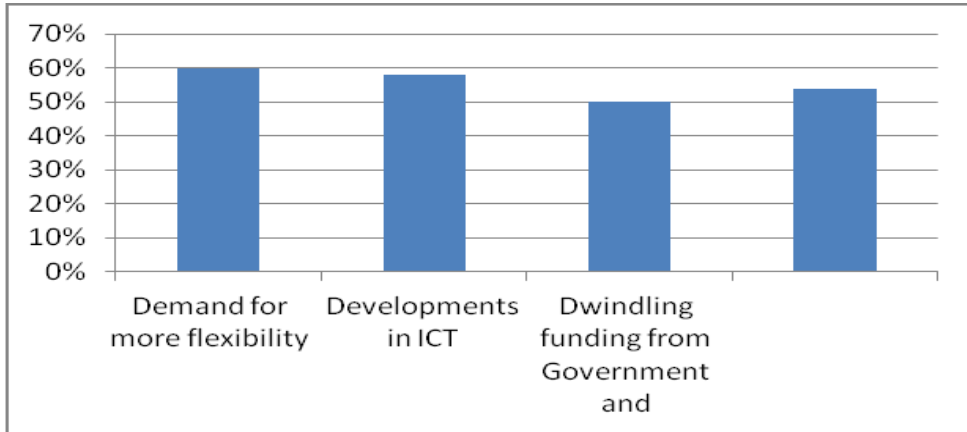
The transition in the mode of delivery is seen to be dominant too in some of the university faculties at UDSM. In this context, the transition is seen in the programmes of Engineering Management, Education and BBA programs. The university is currently offering three online programmes in Post-graduate in Engineering Management, Education and BBA. All of the courses in these programs are delivered through the open and distance learning approach (UDSM, 2010). Furthermore, there is flexibility in time and pace of study in some of the courses as it is for the case of the Master of Business Administration (MBA –evening). Additionally, the university has already launched some of the satellite campuses for computer courses in regions such as Arusha, Mwanza, Mbeya and Dar es Salaam and the university is having enrollment of more students than the physical place to accommodate them hence using technology to reach them.

Forces Behind the Transitions to Mixed Mode

The data collected indicates that the pushing factors towards the mixed mode of delivery are similar in both cases, but the factors are varying in extent to which they influence the transitions in question. The graph below, presents the summarized data on the forces behind the move at the University of Dar es Salaam towards mixed mode.

The data in figure 1 indicates that most of the respondents (40%) point out that the universities move towards the mixed mode of delivery is mainly attributed to the universities' response to the current increasing demands for higher education in the

Figure 1
Factors behind UDSM transition



country. This argument is in line with the statement made by the UDSM (2010) which contends that with the increasing demand for high education and increasing pressure on the existing physical infrastructure, the future University depends very much on the expansion in the use of ICT and increasing online programmes to cater for increasing candidates. The UDSM expressed the need to develop and establish more ODL programmes so as to expand access to higher education.

A few others (10%) indicated developments in ICT as another strong factor behind the move towards mixed mode. This finding is in agreement with Komba (2009) who revealed that the development in ICT technology has inspired the university to move to the ODL teaching and learning. Komba (2009) contends that through the ICT the UDSM is now efficiently able to reach many of its students who are learning through the ODL methodology. In the same vein he points out that, the recent global developments in Information Communication Technologies have, brought new players into the distance education sphere. Whereas between 1960s and 1980s there were only four major distance education providers, all of them financed by the government, the number of such providers has now gone up to seven, all of them enjoying some form of support from the government. The providers are: the Cooperative Education Center (Moshi Cooperative College), the Institute of Adult Education, the Southern African Extension Unit, The Open University of Tanzania, University of Dar es Salaam and the Tanzania Global Development Learning Center.

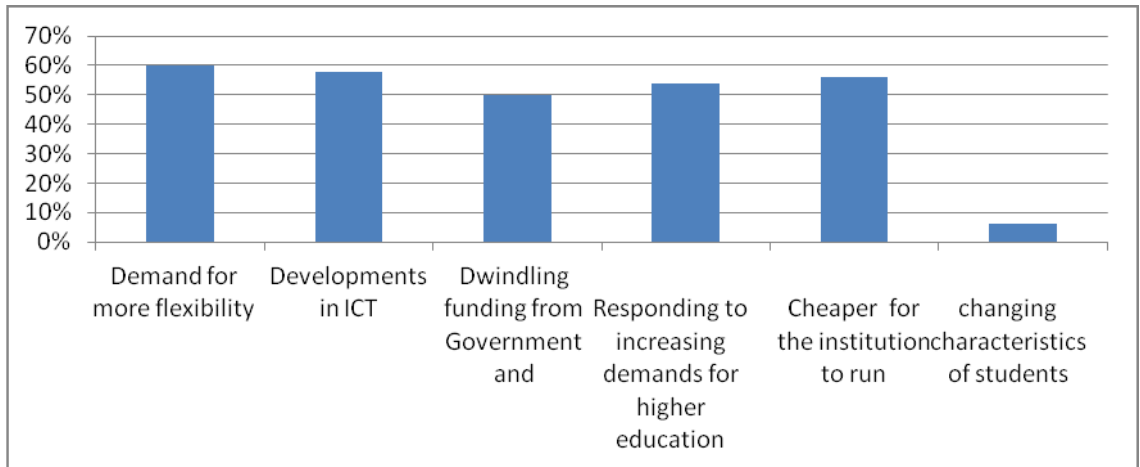
Dwindling funding from government was also identified by some of the respondent (10%) to be also contributing reason towards the transition. The issue of dwindling of fund is also supported by the UDSM (2010) which indicates that in recent years public funds to UDSM have been received at a declining rate, which has the potential to reverse the University's achievements so far. Therefore, in the environment of this manner where the institution is forced to run its activities with the shortage of financial resources, it is seen to be logic to resort to the mixed mode of delivery so as to widen the

capturing net for UDSM potential students who are not able to join the institution through the conventional approaches but they can join it through the ODL mode of delivery.

Surprisingly the data collected through questionnaire indicated that most of the respondents (40%) from the University of Dar es Salaam didn't respond to this question which required them to identify factors behind the universities move to the mixed mode. During interviews, it was explained that though steadily expanding the transitions have not yet been implemented by all schools and faculties of the university.

Figure 2 presents the summarized data on the forces behind the move towards the mixed mode of delivery at the Open University of Tanzania

Figure 2
Factors behind OUT transition



The data in Figure 2 indicates that most responses (60%) indicated that mostly the OUTs' shift from the former dominant paradigm in the teaching and learning process was attributed to the demand of the students as a whole for more flexibility in the teaching and learning approaches so as to cope with the current national and global pressures.

The other issues which was also identified by many (58%) of the OUT respondents as one of the contributing factors to the OUT move to the mixed mode was the development of ICT. This was followed by the observation that it was cheaper for the institution to run (56%) some courses/ programs through conventional means. The participants explained that the fees for programmes run through conventional techniques were not controlled by the government which insists on very low fees for ODL programmes. Increasing demands for higher education was also identified by many (54%) respondents; while half (50%) of the respondents pointed to the dwindling funding from government this is supported by the OUT (2011) which highlighted that while the OUT is expanding day after day in terms of responsibilities and functions the

government financial support have been declining year after year since 2009 to date. This OUT Institutional Self Assessment and Evaluation Report shows that in the academic year 2001/2002 the government allocated to the OUT Tshs.1004, 000,000/= the amount which more or less remained the same up to 2009/10 where it drastically went down to Tshs 917,000,000/=. Only few of them (6%) identified the changing characteristics of students as a contributing factor. This factor is related to the age profile of the students whereby more younger students are enrolling to OUT programmes. These aim at completing their programmes within the same duration as their cohort in conventional institutions; studying is their full time occupation. Some students who are employed also require new qualifications to cope with changes at their work place or maintain their employment. From the above presented data it is obvious that, the move of the OUT and UDSM towards mixed mode of delivery is not contributed by a single factor but many which combined together to exert strong forces behind the transition.

Envisaged Benefits of the Transitions to Mixed Mode

When the respondents were asked to identify the benefits which the universities are expecting to gain through implementing the mixed mode of delivery, they said that universities gain various benefits. However, when one assesses these benefits as they were mentioned by the respondents he/she may find that the envisaged benefits at both the OUT and UDSM are also similar but they differ in levels. This is evident from the data in graphs and the presentation below.

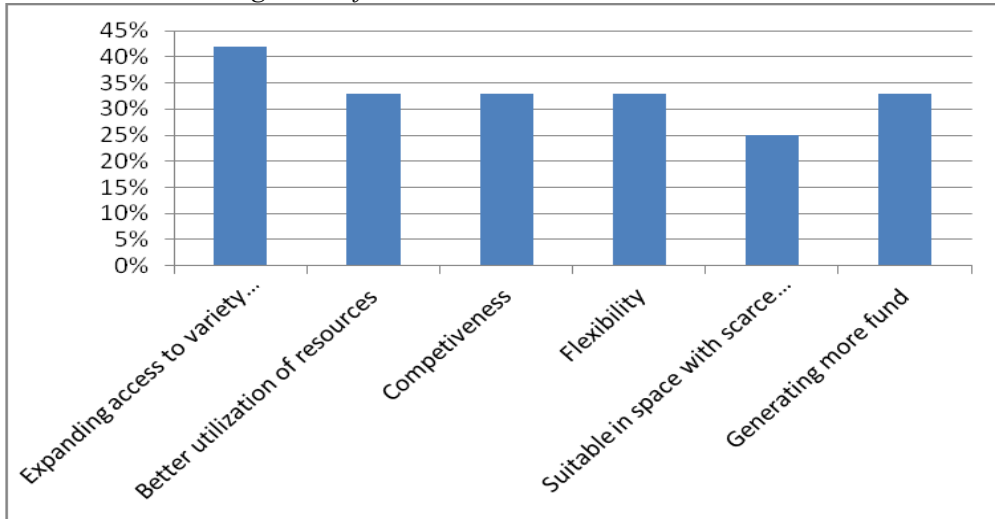
The Benefit of ODL Institutions Offering Some Programs Through Conventional Methodologies

The data collected and summarized in figure 3 indicated the envisaged benefits of the ODL methodologies using the orthodox conventional approaches in the delivery of their courses/programmes as they were revealed by the respondents from the OUT.

The data summarized in figure 3 indicate that, the respondents from the OUT were of the view that the higher learning institutions in Tanzania gain much when they offer some of their programs through conventional modes of delivery while they are mainly ODL institutions. With this aspect, most of the respondents (41.7%) contend that, the tertiary institutions expand access to more variety of potential customers when they are offering some of their programs in a conventional mode than in a solely ODL mode.

Moreover, other respondents (33.3%) asserted that, through this approach the tertiary institutions are at a better position of utilizing its resources in a more effective and efficiency manner than if they would be offering in a merely ODL approaches. In this context, the higher learning institutions establish different evening programs where by the lecturers from the ODL institutions provide their face to face services to the students. Issues of generating more funds was also mentioned by some respondents (33.3%) to be among the gains the OUT obtains when applying the conventional approaches of delivery in some of its programs. Through these gains the institution find itself in a good

Figure 3
The transition envisaged benefit at OUT



position to overcome the problem of fund shortage in running its activities. Additionally other, respondents (33.3%) commented that the diversion of the institutions from the former approach of delivery in ODL methodologies to the conventional one is mainly contribute by the competitive environment where both conventional and ODL institutions compete to attract more potential students following the mushrooming of universities. By employing the conventional approaches, the institution is envisaged to be in a good environment where it can survive well in this competitive situation. Furthermore, the respondents said that the global world is facing quick changes and great dynamics in all spheres of life whereas the flexibility becomes an indispensable approach if one wants to cope well with these changes. To the OUT flexibility in the aspect of methodologies became automatically an inevitable thing if the university needs to survive and thrive well in this world of dynamics.

Through personal interview some respondents contended that ODL is more adventitious to students as it enables them to access update information and learning material compared to those of conventional universities while the conventional approach assists them to complete their programmes quick than the ODL approach. Mixing the two modes make them get the best of the benefits from each mode.

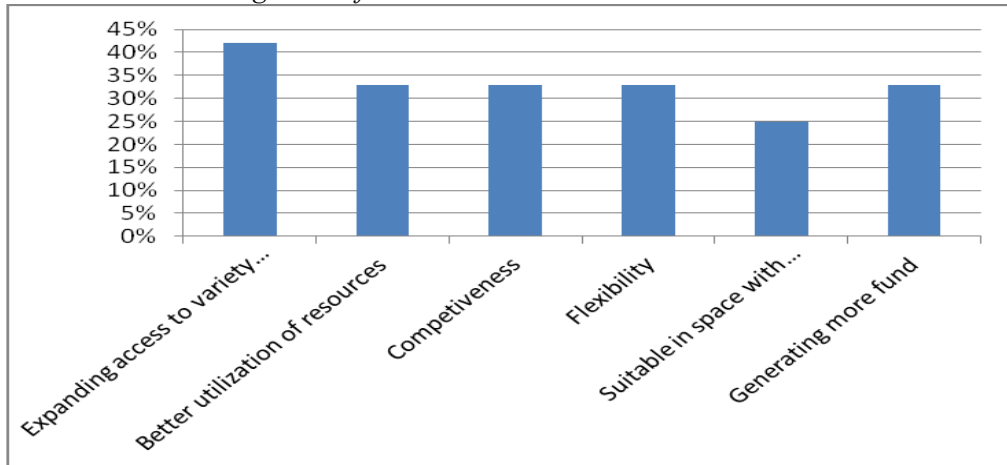
The Benefits of Conventional Institutions Offering Some Programs Through ODL Methodologies

As we have pointed out earlier conventional universities have also been shifting from single mode of delivery to mixed mode; they have employed ODL methodologies to some of their programmes. The benefits that were identified by respondents from the University of Dar Es salaam are summarized in figure 5 below.

According to the data summarized in figure 5, the advantage of using this approach that was identified by majority of respondents to increase access to variety of students. Those students who cannot leave their working station for a long time and those who face the problems of limited time to pursue their studies at conventional institutions benefit much from ODL established programmes. Other respondents (33.3%) pointed out that the institution was collecting more fiscal resources through employing a mixed mode of delivery hence reducing the total dependence of universities on government

Figure 5

The transition envisaged benefit at UDSM



funding. Some respondents (33.3%) indicates that when conventional universities are offering some of their programmes in ODL system they overcome the problem of shortage of human resources (lecturers) since through ICT one lecturer can teach thousands of students. This idea is also supports the observation by Mushi (2001) who pointed out that with ICT there is a possibility of offering courses during vacation . Some findings revealed that the increased demand for higher education in Tanzania has resulted into fast emerging of universities. The outcome of this is the increasing competition over potential students. The changing from single mode to the mixed methodologies enables universities to manage competitions.

Challenges of the Transitions to Mixed Mode

The respondents were also asked to show some of the challenges which are encountered by the universities when they move to a mixed mode. Various responses summarized in figure 6 and 7 were provided by the respondents.

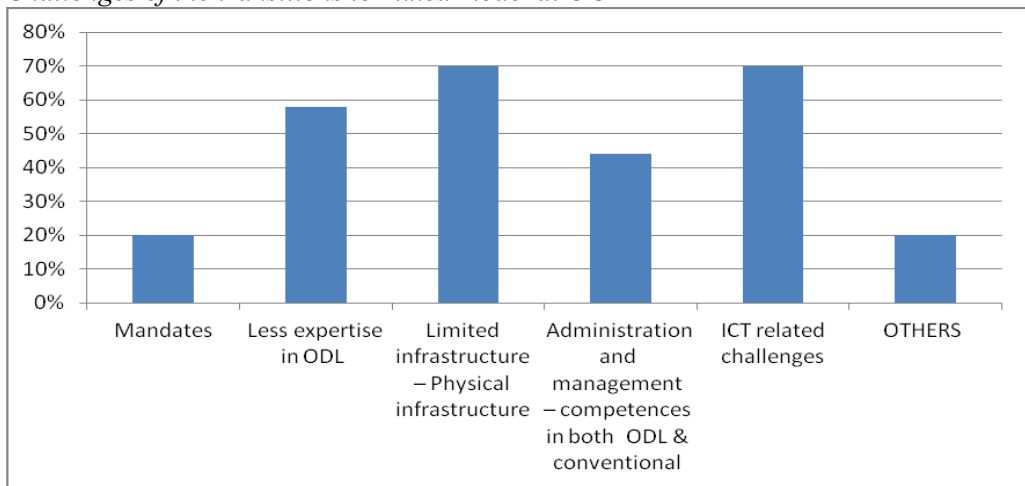
The respondents at OUT revealed that the out encounters several problems when moving from a single ODL approach to mixed mode.

As Figure 6 indicates, most of the respondent (70%) identified two major challenges, which are the limited infrastructures that would allow the full implementation of the mixed mode of delivery and issues related to ICT. The required physical infrastructures

included lecture rooms and residence halls and laboratories for its students. Related to this is limited permanent premises where the university could fix ICT infrastructure internet connection, video cassette and tapes for face to face residential sessions. Other respondents (58%) highlighted that the OUT faces the problem of less expertise in implementing the mixed mode approach whereas the lecturers need to be ready to serve in both ODL and face to face lecture sessions. Furthermore, the respondents (48%) identified that, the management finds it hard to implement the teaching and learning because of the poor managerial skills to support both approaches the conventional and the ODL at the same institution concurrently. A few of the respondents (20%) said that there is also the problem of mandate to support the mixed

Figure 6

Challenges of the transitions to mixed mode at OUT



mode. However, the data collected through the documentary review indicates that this argument was invalid as the OUT Charter allows the university to offer its programs through both ODL and conventional approaches (OUT, 2007 and OUT, 2005).

Other challenges which were identified by some respondents (20%) include the heavy work load among the academic staff and having the shortage of the laboratories particularly for students who are pursuing science courses in the face to face sessions. These assertions are supported by Mushi (2001) who advocates that mixed mode of delivery has high running costs hence requiring high fees. Centralization of programmes was also identified as other challenges because most of the programmes under mixed methodologies are offered in Dar es salaam

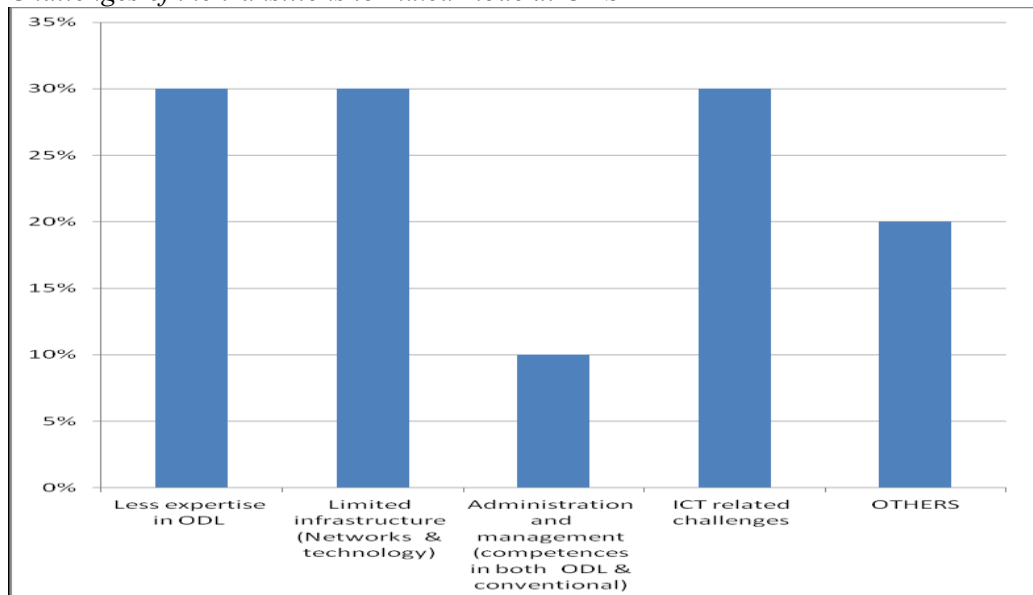
Challenges of the Transitions at UDSM

The respondents from the UDSM outlined challenges encountered by the university when offering some of its programmes through ODL methodologies as they are shown in figure 7 below. At the University of Dar es Salaam the respondents identified some of the three difficulties at the rate of the same ratio of (30%) They asserted that some of the lecturers in the conventional universities have less expertise in ODL approaches hence it

becomes hard for them to accept and adopt the new ODL techniques. The ICT related challenges were also among the critical problems which the respondents from the University of Dar es Salaam raised. They revealed that skills and sufficient infrastructures are needed for the UDSM to be able to successfully implement the ODL mode of delivery. Limited ICT infrastructures particularly in networks and technologies were a challenge. Another problem that was identified was the mindset. The respondents explained that it is difficult for the proponent of the of the orthodox learning (to adopt the mainstreaming of the mixed mode in their teaching and learning process

Figure 7

Challenges of the transitions to mixed mode at UDSM



Strategies to Harness the Mixed Mode for the Betterment of Provision of Higher Education in Tanzania

The following are some of the strategies of harnessing the mixed mode for the betterment of provision of higher education in Tanzania that were recommended by participants in the study. Some of the recommendations were specific to OUT or UDSM while others were general.

It was recommended that OUT establish laboratories in all regional centers so as to be able to be able to effectively accommodate the students who are pursuing the science subjects in their courses. This will motivate and strengthen the performance of students in these subjects for the prosperity of the country. There is a need to train the academic staff so as to be able to cope in both environments of teaching and learning as the mixed mode is an inevitable phenomenon in the higher learning institutions. The lecturers need to be conversant in both ODL and Conventional techniques

The issue of improving the ICT infrastructures in all tertiary institutions needs to be taken with serious considerations as currently no country can afford to exist without

using ICT in its learning and teaching strategies. *“African countries are now talking on the ratio of one student one laptop”* Said one of the interviewees.

Instituting quality assurance mechanisms for the mixed mode was also recommended. *“The tertiary institutions need to mainstream issues of monitoring and evaluation for quality assurance to the extent of making it an important culture that every academic staff needs to live in so as to achieve to the desired quality and competitive education, the education that is able to stand and to overcome the current global wave of change in all spheres of life”*. One respondent explained.

Related to this was the recommendation that There is a need to conduct a regular rigorous and continuous assessment so as to be able to identify both the strength to which the institution can go on clinging to and the weaknesses which they can struggle to get rid of them. The sensitization on the use of E-resources needs to be well emphasized and the related orientation courses need to be provided to the students so that they are able to access variety of useful and current E-resources.

OUT need to expand the mixed mode to regional centres so that many students who are in need of this dual mixed mode can benefit from the transition. There is a need to increase collaboration with other mentor institutions in each of the desired learning approach. For example the OUT may benefit much in being in collaboration with the UDSM vice versa to ensure that the expertise and experiences that OUT has in ODL and that which UDSM has in conventional approaches are shared and enhance in both institutions. There is a need to review university charters so as to incorporate the flexibility of the institutions in the teaching and learning process for the better of the country

Concluding Remarks

The paper has explicated the current transition towards a mixed mode of delivery of higher education. Based on the comparative study on the challenges and prospects of mixed mode of delivery of higher education, the envisaged benefits and the challenges of the mixed mode were discussed. Increasing demands for higher education and flexibility, developments in ICT, dwindling funding from the government and changing characteristics of students were identified as some of the forces behind the transitions. The benefits include expanding access to a variety of students; generating more funds, better utilization of resources and competitiveness. Less expertise in ODL or conventional mode of delivery; limited (or lack of) infrastructure, administration and management and ICT issues were identified as challenge of the mixed modes. Enhancing collaboration and partnership; sharing experiences, capacity building in requisite expertise and review of mandates are some of the recommended strategies to harness the mixed mode for the betterment of delivery of higher education in Tanzania. The contemporary world is exerting pressure on education and its institutions to provide more and better education to diverse learners. This makes transition to mixed mode of delivery of education inevitable. Educational institutions need to understand the phenomena and set strategies to harness it for positive contribution towards development of education and societies.

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Application of System Analysis in ODL

Paper presented at the second national ODL conference and commemoration of 20 years of delivery of affordable quality university education by ODL in Tanzania, 23rd – 24th – august 2012.

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Abstract: *Research reports and observations have indicated the absence of quality planning in the management of open and distance education in Africa. This appears to be one of the major constraints to the effective management of Open and distance education in majority of the institutions all over Africa. This paper is theoretical in nature. The main purpose is to discuss the application of system Analysis in Educational Management. The paper reviewed how system Analysis can help to promote distance education. It also discussed the meaning and objectives of System Analysis. Distance education and the strategies for applying System Analysis in distance education. It was recommended that Policy makers should avoid working on the symptoms of problem but rather the exact nature of the problems, the government should equip study centers with facilities in order to facilitate learning through distance education.*

Introduction

Distance learning which is an integral part of distance education is an organized course of study in which the teachers are not physically present but teach the learners through correspondence, radio, television, computer or a combination of two or more of the process (Ocho, 2005). According to Alaeze (2005) distance learning refers to educational pattern, approaches and strategies that permit people to learn with no barriers in respect of time and space, age and previous educational qualification – no entry qualification, no age limit, no regard to sex, race, tribe, state of origin etc. It has developed from a modest and inconsequential beginning through correspondence course to a full fledge modern day technology facilitated, flexible and learner-driven self-directed learning, which involves learners who are often in location remote from institutions and/or instructional or tutorial facilitators (Jegede, 2005).

However, mere learning through reading books is only accidental and therefore, cannot be called distance learning (as par distance education) unless there is an organized course of study which is delivered sequentially and directed at specific and reorganized audience of students or learners (Ocho, 2005). Jegede (2004), defined distance education as the kind of education mode provided other than the conventional face to face method whose goals are similar to and just as noble and practical as those of on-campus full time face to face education. However, for effective dissemination of information in such mode of study, good communication medium is required.

System Analysis and ODL Administration

Systems analysis began as a mathematically rigorous, "rational" means of comparing the expected costs, benefits, and risks of alternative future systems – such as weapons systems – characterized by complex environments, large degrees of freedom, and

considerable uncertainty. Since then the systems approach to organization has risen and biologists such as Millerad Rice have linked the chemical and industrial organizations to a biological organism. Earlier approaches to organizational administration were based on parts working solely in terms of external environment but the systems approach views the organization as a whole and involves the study of organizations in terms of relationships between technical and social variables within the system (Nwankwo, 1982). Changes in the technical part will affect other parts in the social hence the whole system. For example the classical approach emphasized the technical requirement of the organization and its needs, it looks at production or output maximization by equating people to machines “organization without people”. The human relations approaches emphasizes the psychological and social aspects and the consideration of human needs “people without organization”

The systems approach attempts to reconcile these two earlier approaches attention is focused on total Work organizations and interrelationship of structure and behavior; and the range of variables within the organization. The systems approach calls managers to view organizations as both a whole and as part of the larger environment. The idea being that any part of the organization’s activities affects all other parts (Nwankwo,1982).

Management of Open and Distance Learning (ODL) may be seen as a problem solving process that include planning, designing, implementation, control, evaluation and revision; Planning is only concerned with determining what is to be done so that practical implementation of decisions may be made later. Planning comes before doing, it is a process for determining where to go and indentify the requirements for getting there in the most effective and efficient manner possible. Then a systems approach could be taken as a design, tool or process that may be useful to ODL educational managers or administrators to identify managerial problems through getting solutions. ODL management using a systems approach starts with an assessment of educational needs; identify problems based on documented needs. Determine solution requirement and solution alternative, select solution strategy (ies) from among alternatives, implement selected strategies, determine performance effectiveness and revise as required.

System analysis is a logical scientific systematic problem solving tool consisting of mission analysis, function analysis, task analysis and methods-mean analysis. According to Kaufman (1972); the systems approach is the type of logical problem solving process which is applied to identify and resolve important educational problems. It is both a tool and process for more effective and efficient ways of achieving educational out comes. The tools for educational planning include needs assessment and systems analyses, where the needs assessment describe a discrepancy analysis which help to tell us where we are now and where we should be going. The system analysis then builds from this basis and identifies the requirement for whatever action indicated. Basically three tools help to determine the requirements for getting from where we are to where we should be. These include the mission analysis, function analysis and task analyses. However the three help to ascertain what is to be done to meet the need but not how. The mission analysis tells us about the requirement for the total problem, the function analysis tell us

about more detailed aspect of each part of the total problem and the task analysis breaks the problem into the smallest units we require for planning. The use of these three tools is linked to looking through a Microscope with several lenses of increasing magnification where the first lens (mission) gives us a big picture, the function show us smaller part of the total problem in grater details and the task analysis gives the exact details of every part we had seen in the function analysis. There after identifying all the parts of educational system, we identify the possible method and means for each of the requirements we have unearth during the mission, function and task analysis. Here we match requirements against possible solutions and note the relative advantages and disadvantages, to pick the best for solving a problem

Most educational agencies today are involved in change, students and teachers are becoming more organized, educational organizations are changing ways of doing thing such as administration, management, motivation, leadership, to mention. In their demand for change, educational planning today exerts pressure for and against educational programs and procedures. The technological innovation in educational institutions has also created demand for educational institutions to change the way they are doing things. Education is subject to change and it is sensitive to change. New educational methods and techniques are always being introduced and tried, although not always on the most rational, empirical, measurement basis. Many school administrators are often accused of pursuing panaceas with nothing but hope and faith to guide them. ODL educational administrators and planners therefore requires a systems approach to education, it requires that systematic, and formal planning, design, implementation, evaluation, and revisions aspects to take place by use of the mission analysis, function analysis, task analysis and methods-mean analysis in solving educational problems. Therefore Since many competitors have taken initiative of changing from traditional approaches of planning to the systems approach ODL educational administrators need to change its style if it is to fit into the competitive world.

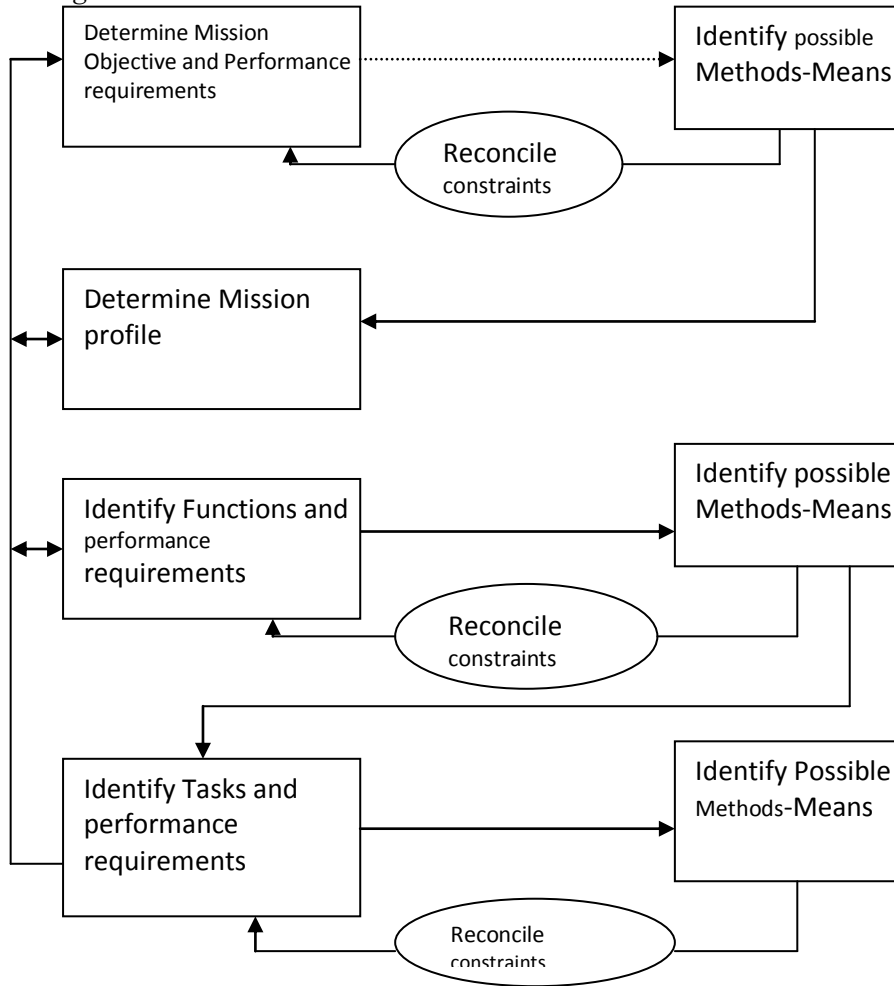
Mission Analysis

A mission is an overall job; product, a completed service or change in the condition of something or somebody that must be accomplished. Mission analysis is the determination of where we are going, how we know when we have arrived, what major steps are to get from here to there. Mission analysis tells a systems planner about requirements for the total problem; it has two elements, Mission objective and associated performance requirement.

Mission objective. Mission objective is a precise statement expressed in performance terms which qualifies outcomes of the mission that is to say, What is to be done to demonstrate completion, By whom it is to be done; who will display the outcomes, Under what conditions is the outcome to be demonstrated, What criteria will be used to determine if the outcome has been achieved?.

Figure1

Conceptual framework describing the application of system analysis to ODL management



Mission profile. The second element of mission analysis is the mission profile. The planning effort so far has yielded (1) what is to be done, (under the mission objective) (2) the performance requirements for the mission. Here the following steps are very important (1) obtain the mission objective and performance requirements that tell where we will be when we have completed the mission. The planner here is also required to describe the status quo; list the necessary outcomes or products. (2) When the first major function in the mission profile has been identified then sub functions are also identified to the last function. (3) When all the major functions in the mission profile have been identified, they are re-examined against the needs in order to ensure internal consistency and external validity based on needs. (4) Once the internal consistency has been determined, arrange the mission profile functions in an orderly

array of rectangles or squares and connect the graphic blocks with lines pointing to the flow of functions from the first to the last.

Function Analyses

A function is one of the several related outcomes contributing to a larger outcome. A function is a collection of required jobs or tasks necessary to achieve a specified objective or bring about a given product or outcome; they are things that have to be done to achieve a product or part of a total product, function analyses proceeds from the results of the mission analysis to a precise statement naming the functions that must be performed in order to solve the problem. Function analysis is the process of breaking each function into its component parts while identifying interactions, function analysis formally proceeds from the analysis of the functions identified in the mission profile.

Task analysis. Task may be defined as units of performance which, when collected constitutes a function. A task is the lowest level of detail in a system analysis. It is the lowest level that indicates what must be done to get a higher -order function accomplished. When the detailed analysis is at the task level the educational planner has for the first time determine all the “what” for successful problem solution, it provides the complete array of what is to be done down to the level of understanding actual requirements for implementation of a plan. Task analysis may be conceived of occurring in two basic steps; Identifying the basic tasks (or steps) involved in accomplishing an overall function, Determining the characteristics of the task, their requirements and their context and putting these in a time ordered sequence, the following are the steps for performing task analysis (1) list all the tasks and sub tasks necessary to accomplish the functions being analyzed. The tasks identified are placed in sequence, (the order in which they will occur) we need to make tasks independent in order to avoid overlap. (2) list the data and or anything needed for a specific task (3) list the action requirement.

Method-Means Analysis

A method mean is a strategy for achieving some performance requirements and a Mean is a vehicle by which a strategy is achieved. A Method-Mean Analysis is the identification of the maximum possible number of methods and the advantages and disadvantages of each for achieving the specified performance requirement (s) identified in a system analysis. The method mean analysis does not select how the requirements will be met; it only gives the possible method-means for achieving the performance requirements. The method-mean analysis begins as soon as the performance requirements for an outcome have been identified ordinarily immediately after the setting of one or more of the performance requirement for the overall mission.

Mission analysis, function analysis and task analysis are process tools with which an educational planner identifies and documents those functions and tasks which must be performed in order to ensure the predictable accomplishment of a mission objective. The three tools identifies the what to be done and or may be in what order; but this is not enough but he is also required to establish ways to accomplish each function, hence the ODL planner requires strategies and vehicles (method-means) with the advantages and disadvantages of each. A systems approach is a six step process for realizing valid planned change; this acts as a roadmap for achieving the desired change through the

Identification of a problem based on needs, Determine solution requirement and solution alternative, Select solution strategy (ies) from among alternatives, Implement selected strategies, Determine performance effectiveness, Revise as required

Attitudes Towards System Analysis as a Tool for ODL management

Systems analysis as a tool for ODL planning is not actually practiced in many organizations in East Africa, many planners and their subordinates' lack the knowledge of the systems approach, and it seems the concept of change threatens every one. Change is apparently an extremely painful experience for most people, when an educator decides to change or innovate he must be prepared to meet resistance from many sources, his teachers, administrators, board and even members of his community. Since systems analysis is a process of planned change, both the process and its outcomes are always questioned.

The attitude towards systems analysis in ODL planning seems not to be that good, many people still view ODL and their administrations with the traditional view of say Taylorism who looked at the organization without people and the human relations who looked at people without the organization, for Taylor to maximize productions human beings should work as machines and for the human relations they looked basically at the human aspect. The systems approach however looks at the organization as a whole and all parts should work together to form a whole.

The Practice of Systems Analysis in the Management of ODL

The practice of systems analysis for educational planning among ODL administrators is still very low; this is due to the fact that many administrators as already observed lack the knowledge of systems approach to educational planning and for those with the knowledge fear resistance from their subordinates and or being accountable. To practice systems analysis for educational planning, planners should however follow the example given below:

The three systems analysis tools we have considered so far are all concerned with determining what is to be accomplished to get us effectively and efficiently from where we are to where we should be or to meeting the identified and selected needs. The analysis proceeds in layers or levels, to determine all the requirements for successful problem solution by identifying all the aspects of the problem and setting detailed specifications for the resolution of the problem.

Conclusion

Distance learning which emulated world over is regarded as a tool for developing the educationally disadvantaged. For distance learning programme to be effectively run, the application of system Analysis should not be overlook in distance learning. Just as Kaufman cautions policy makers on the tendency of citizens and educators or stake holders in education to protest that "we already know what our problems are, what we need are solutions". As Kaufman suggests we always know some symptoms of problems but not the exact nature of the problem; many policy makers and educational planners

tend to avoid needs assessment when dealing with educational issues and in most cases jump to the conclusion, this in most cases hinder policy makers chance to solve the real problem and end up solving the problem poorly or end up treating the symptom and never really solve the problem.

Recommendations

1. Policy makers should avoid working on the symptoms of problem but rather the exact nature of the problem, many policy makers and educational planners tend to avoid needs assessment when dealing with educational issues and in most cases jump to the conclusion, this in most cases hinder policy makers chance to solve the real problem and end up solving the problem poorly or end up treating the symptom and never really solve the problem.
2. The government equips schools/study centres with necessary distance learning facilities. Besides companies market this equipment should be sell at affordable rates to individuals who are interested in procuring them.
3. ICT programme should be part and parcel of the pre-service training programme for teacher trainees. This then calls for ICT to be fully integrated into the present school curriculum. Adequate supply of electricity should be ensured since all ICT tools operate with dependable source of power.

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Language as a Hurdle in Delivering of Secondary Distance Education

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Abstract: *This study, which was conducted in Tanga region assessed the way language of instruction (LOI) affects learners' academic performance in secondary distance education. The objectives of the study were: first to assess learners' ability to interpret instructions and questions presented in the language used as LOI, second, to examine learners' ability to express their ideas appropriately using the current LOI and third, to assess learners' views on language of instruction used for secondary distance education. The study employed principally survey design. Data were gathered through questionnaires as well as interviews. The respondents for the study were secondary education distance learners, teachers who assisted such learners and the IAE regional tutor.*

Findings revealed that secondary distance learners faced problems due to poor competence in using English language as LOI. These included interpretation and expression problems, grammatical problems, difficulty of English vocabularies, inadequate competence in the language used as LOI (English language), and ambiguity of the language used to present the content in study materials and the problem of spelling errors. Such problems rendered secondary distance learners' academic performance to be poor as revealed in this study.

It was therefore recommended the need for providing English training programs to teachers and learners in order to improve learners' language competence, and encouraging scholars and educational professionals to write English language study materials for secondary distance learning. Moreover, learners' individual efforts to improve their language competence should be encouraged.

Introduction

Language plays a very big role in education since teaching and learning process cannot take place without it. It is through language that learners read, comprehend, and effectively interact during teaching-learning process. Interaction is effected through asking and responding to questions or when discussing issues pertaining to their subjects of interest (Vuzo, 2002). If learners and even teachers are disabled in language that is used as a medium of instruction, then the learning process cannot take place effectively (Malekela, 2004). In this case, language can simultaneously play conflicting roles in the educational sphere. It can be a factor in either providing or withholding access to education (Roy-Campbell, 2001).

According to Tanzania's Education and Training policy of 1995, primary education and Teachers' Training Colleges for primary school teachers in Tanzania use Kiswahili as a language of instruction, while Secondary as well as Tertiary education learning should be through English language and Kiswahili remains only as a subject (URT, 1995). This applies even to distance learning, which is viewed as an independent study, home study, correspondence instruction or transmission of knowledge offered to students who are

distant from the institution. Distance learning is conducted through correspondence materials, special radio programs and video cassettes (Mahenge, 2002).

In Tanzania, secondary distance learning is provided by the Institute of Adult Education (IAE) which functions through its regional centres which are found in all regions within the country (IAE, 2009). Printed study materials for secondary distance learning are often distributed to learners through such regional centres and the learners are examined during the academic year in which they study through qualifying test (QT) for stage one learners and Certificate of Secondary Education Examination (CSEE) for stage two learners (ibid).

Following nature of study in distance education where a learner has to rely on posted materials, and at the same time study independently without getting constant help of his or her teacher as an intermediate source of knowledge, a learner needs to understand the instruction on his or her own for his or her academic progress (Holmberg, 2003). Language of Instruction in this case, seems to be one of the major ingredients for learner's success although in Tanzania's secondary education the situation is different. For instance, empirical evidence by the Presidential Commission's report on Education of 1982 shows that most students in Tanzanian secondary schools neither understand what they are taught in English nor can they express themselves in the language (URT, 1982).

If in conventional schools where teachers have direct contact with students the situation is bad, what will the situation in distance learning be like where learner is expected to work independently with a few supportive services such as residential face-to-face contacts? Furthermore, some of the secondary distance learners who are served by regional centres have difficult access to regional centres' libraries due to remoteness of such centres from the clients in rural areas (Mcharazo, 1999). The situation is worse for them since they have not acquired sufficient level of English proficiency to enable them follow instruction in the language. This may lead to poor academic performance.

Distance learning, which is the mode of learning that gives more room for written mode of communication may fail because not all learners can place high premium on accuracy of expression when giving feedback particularly using a foreign language (Sigalla, 1998). Learning in this mode may also be affected by imperfect conceptualization of the content on part of learners since there is no or very little room for clarification from teacher who is separated from the learner (Rowntree, 1992).

Research Objectives

1. To examine the secondary distance learners' ability to interpret instructions as well as questions presented in the language used as LOI.
2. To investigate secondary distance learners' ability to express their ideas appropriately using the existing LOI.
3. To identify learners' views on the language used as the LOI for secondary distance learning.

Research Questions

1. How is secondary distance learners' ability of interpreting instructions and questions in the LOI?
2. How is secondary distance learners' ability of communicating ideas in the LOI?
3. What are learners opinions on use of the existing LOI for secondary distance learning?

Research Methodology

In this particular study, the researchers employed principally a survey design involving both quantitative and qualitative approaches due to the nature of the study. The study was conducted in three districts of Tanga region, namely Tanga city, Korogwe and Pangani. Tanga region was selected because of its poor performance trend among stage one and stage two secondary distance learners in their qualifying tests and form four examinations (IAE, 2010). Thus, the researchers expected to collect enough relevant data from the area to realize effects of LOI on this situation.

A total of 73 respondents participated in the study including: one IAE regional tutor, sixty secondary distance learners (20 from each district) and twelve teachers who assisted them (4 from each district). Such respondents were selected by using purposive and stratified random sampling techniques. Stratified random sampling was used to select learners on the basis of their sex, learning stage and location. While a purposive sampling was employed to select IAE regional tutor based on his duties as the overall in-charge of the program in the region and subject teachers basing on subjects they taught.

Data were gathered using questionnaires and interviews. Sixty learners filled questionnaires and twelve teachers who assisted them were interviewed to get the required data regarding the effects of LOI on learners' academic performance. In addition, the IAE regional tutor was also interviewed to get the required data. Findings from the study were presented and discussed according to the research objectives and research questions of the study, and were analyzed both qualitatively and quantitatively.

Presentation and Discussion of Findings

Learners' Ability to Interpret Instructions and Questions Presented in the Language Used as LOI

The ability to interpret instructions and questions was tested by asking learners (in the questionnaire), teachers and the IAE regional tutor (in the interview) whether or not they identified any interpretation problems faced by the learners in their learning process. In addition, respondents were asked to mention nature of language problems that learners faced.

Findings revealed that 46 (76.67%) learners out of 60 learners involved in the study and all 12 teachers as well as the only IAE regional tutor who were interviewed claimed that learners faced numerous linguistic problems when interpreting instructions and questions

in the LOI used (English language in this case). This confirms previous findings by Roy-Campbell (2001) and Skutnabb-Kangas (2000) who caution that the use of a foreign language in education hinders learning. Many linguistic problems encountered by secondary distance learners in learning through English as the LOI were identified by such respondents. In essence, it disclosed learners' incapability to interpret instructions and questions in English language.

One of the interpretation problems explained by learners was difficulties in comprehending English vocabularies. Thus, 38 (63.33%) learners revealed that they faced difficulties in English vocabularies when using English language as LOI. The learners' problem with vocabularies, which restricted them from interpreting instructions and questions presented in English LOI merged with teachers and IAE regional tutor's assertions. Some of the teachers stated that learners were forced to cram rather than understand subject matter presented in the study materials using English LOI. One of the teachers said that, "The learners sometimes are obliged to cram things that they do not understand their meaning because of the use of difficult words in presenting them". Such a problem affected learners' academic performance since cramming did not enhance learning and little comprehension was attained. Such a practice leads to what Freire (1993) terms narration sickness since the narrating subject is the teacher and the patients the listening objects are the students. Thus, more sophisticated learning should be encouraged.

Learners involved [28 (46.67%)] in the study found it difficult to interpret instructions or questions in the language used as LOI (English language in this case) caused by grammatical problems. Most learners lacked English grammar competence. That was the reason, it was explained by the teachers that learners always asked for meaning of sentences, repetitions and translations of some phrases when meeting with teachers who were assisting them during face-to-face sessions. This indicates that the basic level of understanding was yet to be attained due to their grammatical incompetence. In this respect, it was reported that with English LOI, learners' understanding of the content was largely constrained and hence, affected their academic performance.

In addition, 5 (41.67%) teachers explained complexity involved in trying to solve the matter. For instance, teachers went out of their way teaching English grammar to assist learners before proceeding with lessons. Always there were several instances of English grammar teaching during face-to-face sessions. However, that was not the task of a subject teacher who is not trained to teach English. In some instance, they misguided learners, given lack of English proficiency illustrated by some teachers in this study. In this predicament, Qorro (2004) argues for the use of Kiswahili instead as the LOI. This will enable removal of negative exposure to incorrect English from teachers of subjects other than English and give learners exposure to quality English by allowing English to be taught by only qualified teachers to teach it. Results from the study revealed that teachers who assisted secondary distance learners deviated from focus on lessons when conducting face-to-face sessions. Sometimes they failed to give the required assistance effectively.

Pertaining to learners' problem of lack of adequate competence in English LOI, 39 learners who made 65% of all learners involved in this study claimed to ignore the lessons because of this problem. They always struggled to read the study materials independently but gained very little. It can be remarked that under such circumstance learners are likely to end up with poor academic performance. It is not surprising to observe a big number of secondary distance learners perform poorly in their qualifying tests and form four national examinations. It was explained that a couple of learners on several occasions failed to interpret the content presented in the study materials caused by lack of linguistic competence. Hence they privately made wrong comments to themselves. Sometimes they asked for explanations from colleagues with whom they sailed in the same boat. Such problem, in one way or another, appeared to trim down learners' confidence in using the language. Skutnabb-Kangas (2000) stresses that it is important to ensure that students gain full confidence in their language in school. Otherwise, the damage, which this will have on learners' self-esteem, may be irreversible.

That is the reason 10 (83.33%) teachers involved in this study noticed that learners crammed and that they needed constant repetitions as well as translations during face-to-face sessions. Furthermore, 8 (66.67%) teachers claimed to give elaborations of contents in Kiswahili so long as learners faced difficulties in interpreting instructions particularly when presented in English language. The learners maintained that there were more difficult vocabularies in English than in Kiswahili. Although Qorro (2003) states that the language in education is supposed to provide teachers and students with linguistic space for them to actively engage in, such learners felt restricted from understanding the content caused by the limited competence in the language used as the LOI. Hence, it constrained their academic performance.

On the other hand, 35 (58.33%) learners and 5 (41.67%) teachers found out that study materials for secondary distance learners were not easy to understand. The language used to write such study materials was explained to be complicated and ambiguous to readers. The learners were forced either to look up in the dictionary for translations of such ambiguous words or wait for teachers who assisted them to give elaborations so that they could understand better than when they read on their own. It appeared that following study materials was not a straight-forward issue. Ambiguity and complication of language used to present lessons in the study materials forced learners to cram and memorize. Hence, they forgot easily what they read on their own. Thus, in one way or another, that can be considered to be among factors, which may hinder learners' good academic performance.

Generally, 41.67% teachers maintained that lessons presented in the study materials using English as the LOI were time consuming. Learners tried to figure out meaning of ambiguous contents from elsewhere. One of the teachers said that, "In study materials prepared for learners, the language is complicated and confusing. Hence, it affects

learners' understanding of the content...There is frequent use of very difficult words in those study materials."

It can be concluded that learners' interpretation problems were not only rooted from learners themselves, but also those who presented the study materials were among the causal factors. It is unfair to keep on claiming that there is a problem on part of learners while even writers of study materials contribute to the problem. They sometimes used complicated language when preparing study materials. There is a need for having collective efforts among all stakeholders, like secondary distance learners, teachers who assist them, the Institute of Adult Education and writers of study materials, in order to getting rid of all interpretation problems. The measure would ensure that the LOI used does not restrict or affect learners' academic performance.

Learners' Ability to Express Their Ideas Appropriately Using the Current LOI

Learners' ability to express their ideas appropriately using the existing LOI was also investigated in this study. Learners were asked in the questionnaire whether they experience any expression problems in their learning process. They were also asked to point out self-expression problems that they faced in learning process if they did. Teachers and the IAE regional tutor were also asked to state whether they identified any expression problems when they were attending their learners.

Findings from this study revealed that 50 (83.33%) learners, all teachers and the only IAE regional tutor involved in the study claimed that learners encountered several linguistic problems when expressing their ideas by using English as the LOI. It was revealed that the largest number of respondents identified numerous expression problems encountered by secondary distance learners, which in essence disclosed learners' incapability to express their ideas in English language. Hence, it affected their academic performance.

It was revealed by 34 (56.67%) learners and 5 (41.67%) teachers that it was difficult for learners to express their ideas appropriately in English LOI caused by their incompetence in English grammar. That was the reason explained by teachers that learners always wrote incorrect sentences and made frequent repetitions of arguments when doing assignments provided to them by teachers who assisted them during face-to-face sessions. This indicates that the basic level of self-expression was yet to be attained due to incompetence in grammar.

In this respect, 5 (41.67%) teachers reported that with English LOI, questions that appeared to be more problematic to attempt were reasoning questions than factual questions. Barnes (1969) makes a distinction between factual and reasoning questions where factual questions expect the learner to recall and then present a piece of information, while reasoning questions require a learner to give wider explanation. Factual questions require learners to answer what, when, who or where, whereas reasoning questions, which, for instance ask how and why, require learners to write a large piece of information that needs them to have competence in expression (ibid).

Thus, it appears very difficult for learners to attempt reasoning questions, which require highly grammatical competence to make a number of correct and meaningful sentences or phrases. This is very hard for the learner with limited grammatical skills.

In this case, findings from this study revealed that it was very difficult for teachers to assist secondary distance learners successfully. That was so because teachers could not get relevant feedback from learners and so no common understanding was being reached. This makes it difficult for teacher to incorporate what learner says into flow of the discourse and gather the learners' contributions together to construct more generalized meanings as Mercer (1995) and Wells (1999) argue. Freire (1993) criticized such kind of education as a banking model of education. The banking model of education diminishes the learners' creativity.

Findings from this study also showed that learners' inadequate competence in English LOI appeared to affect their academic performance. The problem was revealed by 44 (73.33%) learners as well as 6 (50%) teachers and the IAE regional tutor involved in this study. Those respondents revealed that giving self-expression appropriately in English LOI was constrained by learners' inadequate competence in English language. Learners claimed to fail lessons because of the problem. Due to lack of competence in using English as the LOI, learners, on several occasions, tried to present their ideas in writings but sentences, phrases and paragraphs they wrote appeared to be wrong and meaningless. The situation highly discouraged learners leading them to lose confidence when giving self-expressions. In order to improve learners' linguistic competence, it is therefore important to ensure that students gain full confidence in their language in school. Otherwise, the damage, which will have effect on learners' self-esteem, may be irreversible (Skutnabb-Kangas, 2000).

Amongst learners' expression problems identified by secondary distance learners themselves, teachers who assisted secondary distance learners and the IAE regional tutor, was lack of appropriate vocabularies to use for expressing ideas. Thus, 42 (70%) learners revealed that they faced difficulties in English vocabularies when using English language as the LOI. The learners' problem with vocabularies, which restricted them from expressing their ideas in English LOI merged with views from 9 (75%) teachers and the only IAE regional tutor involved in this study. The learners maintained that they faced difficulties in producing English vocabularies compared to Kiswahili words. They declared that they were capable to give better explanations and much more detailed examples in Kiswahili than in English. One teacher noted that. "In Kiswahili, learners gave better explanations...In giving emphasis, they gave details contrary to English where they read notes from the study materials and text books... They are much more free in constructing ideas and giving expressions in Kiswahili".

Although Qorro (2003) states that the language in education is supposed to provide teachers and students with linguistic space for them to actively engage in, the learners felt restricted by limited competence in the language used as the LOI and hence, it hindered their free self-expression.

Learners' Views on the Language Used as LOI

In order to solicit learners' views on language used as a LOI in secondary distance learning, respondents responded to the question, "In your own views, what do you think could be done about language competence of secondary distance learners in Tanga region?". To consolidate learners' views, teachers and the IAE regional tutor were also asked in interviews to give their opinions about language of instruction in secondary distance learning. In responding to this question, a number of views were provided by the respondents including:

- English language should be used intensively for academic and administrative communication instead of using Kiswahili most of the time (suggested by 37 out of 60 learners and 7 out of 12 teachers);
- It is better to use English language as LOI at primary school level in order to enable learners be competent in the language when reaching secondary education level (suggested by 32 out of 60 learners and 2 out of 12 teachers);
- There is a need of changing the language of instruction used in secondary distance learning from English to Kiswahili (suggested by 29 learners out of 60);
- The Institute of Adult Education should provide English Language Orientation Courses/Seminars to secondary distance learners so as to improve their language competence (suggested by 27 out of 60 learners, 4 out of 12 teachers and the only interviewed IAE regional tutor);
- Learners should be assured of availability of language study materials and facilities so that they could use them for improving their language competence (suggested by 27 out of 60 learners and 5 out of 12 teachers);
- The Institute of Adult Education has to extend learning duration to enable learners have plenty of time for learning English language (suggested by 25 out of 60 learners and 8 out of 12 teachers);
- Learners should initiate self-efforts in improving their language competence (suggested by 22 out of 60 learners and 5 out of 12 teachers);
- The Institute of Adult Education should improve inspectorate programs for assessing the LOI used in secondary distance learning (suggested by 9 learners out of 60);
- Teachers who assist secondary distance learners should be motivated to teach learners English language besides the subject that they teach (suggested by 7 out of 60 learners and 2 out of 12 teachers).

Concerning recommendations provided by secondary distance learners and teachers in this study on the need for using English language as the LOI from primary school level, the argument was built on establishing learners' English language base before joining secondary distance learning. It implies that without English proficiency in lower levels of education, a child could not cope with further education, leading to poor academic performance. In his study, Mosha (1995) cemented that students who enter secondary schools experience inadequate language proficiency and fail to have good performance in examinations. Even Chonjo and Welford (2001) are in line with the argument that

such students struggle to raise their academic ability in form four and six because of the use of LOI which they do not command well when joining for secondary education.

In a similar vein, Prah (2003) asserts that starting children off in primary school in Kiswahili and then, expecting them at secondary as well as university levels to work in English is like casting them into two worlds with one leg in either and belonging nowhere. Thus, learners' English language basis has to be built from the primary school level by introducing English language as the LOI at that level. That may not only help learners maintain their competence in the language for better academic performance, but also it may help them to keep up abreast with what is going on elsewhere in the world, considering that English is an international language (Rubagumya, 1990). This argument also assumes that using English language as the LOI in primary school level will lead to greater proficiency in the language amongst learners. Klein (1994) pointed out that where the home language is different from the LOI used in the classroom, it may create pedagogical and cognitive problems. This seems to be certainly the case in secondary distance learning as it was expressed by respondents in this study.

This view demonstrates that learning in a familiar language (Kiswahili, in this case) would facilitate success for masses and promote learning. For this reason, it seems necessary to put into serious consideration the proposal from UNESCO (2003) that use of the first language is extended to as late a stage in education as possible. Thus, what required is to widely disseminate Kiswahili version study materials and further develop use of Kiswahili as the language of instruction in secondary distance learning.

Learners and teachers in the present study further reported prevailing habit of teachers and secondary distance learners of switching into Kiswahili language when conducting learning during face-to-face sessions. Such habit was explained to limit intensive use of English language and hence, it was one of factors that hinder learners' competence in the language. Some previous studies showed that contrary to Tanzanian policies on education, secondary school teachers and students made intensive use of code-switching during learning. Mwinsheih (2003), Roy-Campbell and Qorro (1997) as well as Vuzo (2002, 2007), in their respective studies, discovered that even teachers themselves practiced code-switching and code-mixing in classes although the country's policy directs them to teach in English language only. Therefore, for the purpose of improving learners' language (English, in this case) competence, there is a need for the IAE officials and teachers who assist secondary distance learners to use English language intensively in order to install more language skills in them. That can help to improve the learners' language competence.

This view was related to learners and teachers' recommendations of extending learning duration which was indebted by the factor that short learning duration affected improvement of learners' language competence. Code-switching discourse during face-to-face sessions plus little time they spent with teachers who assisted them limited them from using English language intensively. It caused them to spend more time using Kiswahili language.

Such an argument shows that respondents were aware of the fact that both learners and their teachers had deficiency in English skills. The comment concurs with previous research results that teachers as well as their learners are far from having any English language proficiency (Malekela, 2004; Rubagumya, 1991; Vuzo, 2002). Thus, there is a need for learners and teachers who assist them to improve their competence in the LOI used for secondary distance learning.

The need for raising learner's individual effort in improving language competence was another crucial suggestion provided by 22 learners and 5 teachers involved in this study. They argued that learners should initiate efforts to improve their language competence instead of depending only on teachers or the institute (IAE) to do it for them. For instance, they may buy and read many English language books and spend more time learning the language. Therefore, it necessitates the importance of ensuring availability of language study materials and facilities for secondary distance learners to use in improving their competence in the LOI, taking into account that they spend most of the time studying without consistent help of teachers.

The learners also need to use little language skills they possess to support each other in the process of improving their language competence. Wells (1999) asserts that learners need to take advantage of expertise of each other and also be recognized for their own. That will provide learners with important reinforcement and incentives for continuing growth as well as development in whatever they need to achieve. This is in line with Mercer's (1995) argument that peer collaboration has the potential for enhancing development of learners to be effective. The need for such participation should arise from learners rather than being imposed on them by the teacher.

Conclusion

The study revealed that the secondary distance learners' academic performance was constrained by the language of instruction used. Although both conventional and distance learners faced the problem, circumstances in distance learning were different and made it worse for the distance learners to perform well in their studies. Since it was discovered that using English language as the LOI brought several problems to most learners in secondary distance learning, it appeared important to make efforts of doing away with them. That is because learning in the language that learners command well may enable them to have good academic performance (UNESCO, 1953).

Learners' interpretation and expression problems were found to constrain learners' academic performance because of learners' poor proficiency in the language. This strongly justifies the importance of raising learners' competence in the language used as the LOI for their better academic performance. In this regard, there is need to do away with the identified learners' language problems.

The Way Forward

The Institute of Adult Education should provide English training programs to both teachers and learners so as to enable them be competent in the language. To implement this, learning duration should be extended in which one year can be taken as a preparation period whereby learners can be taught English language before starting to learn secondary education subjects at the end of that period.

Teachers who assist secondary distance learners should be given special training on how to assist their learners in improving their language competence. Thus, seminars and workshops should be conducted where they will be equipped with techniques of assisting distance learners in improving language competence.

The Ministry of Education and Vocational Training as well as the Institute of Adult Education should encourage scholars and education professionals to write more English language study materials for secondary distance learners. The government should provide incentives or rewards to English language materials' writers and efforts should be made to assist them.

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The Current Environment of Education in Tanzania: Challenges of Teaching / Learning Mathematics in Tanzania

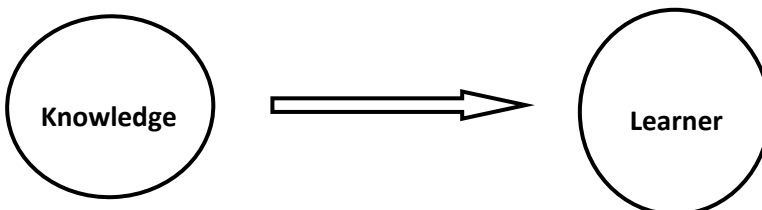
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Abstract: Tanzania is among the least developed countries of the world. In order to catch up in development with the rest of the world, Tanzania has to invest much more in training its manpower in science and technology. However, such an ambition will remain an illusion if a critical mass of the most important resource for development, the human resource, does not have a good grasp of mathematics. This is the reason for putting so much emphasis on the subject of mathematics in our schools, colleges and tertiary institutions. Unfortunately, teaching and learning mathematics is a big challenge worldwide and, research into ways and means of surmounting the challenges is of paramount importance (Johnson, 2000).

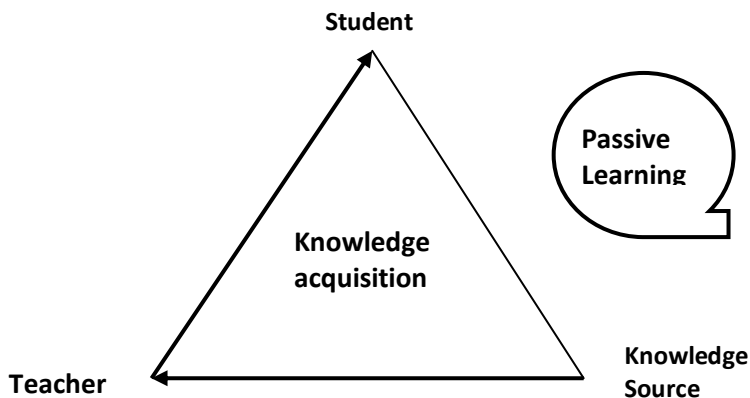
Introduction

Persistent poor performance in mathematics by candidates at primary, secondary and university levels is an indication that there is a serious problem in the teaching and learning of mathematics at all levels of the educational pyramid. In trying to locate the root causes of the problem we need to look critically at the entire educational process.

Education is a process of acquiring knowledge and skills by a learner.



Traditionally the learner was solely dependent on the teacher. The teacher was the authority in the contents of the syllabus and was well grounded in the art and skills of transferring that knowledge to the learner using teaching and learning resources that were provided. If the teacher did not know it so was the learner.



Since its independence in 1961, Tanganyika (Mainland Tanzania) has witnessed a rapid expansion of enrolment in education at all levels. However, this expansion has taken place without matching expansion in training of teachers and adequate provision of the required resources (infrastructure and instructional materials). As a result of insufficient budgetary allocations and because of unattractive remuneration in the teaching profession compared to other sections of the labour market, the quality of teachers, both in their professional training and in knowledge content has dramatically declined. The recent abortive teachers strike over pay and other work benefits is a symptom of the underlying problem. The cumulative consequence of all these factors is what we are witnessing, mass failures both at the primary and secondary levels.

In this presentation we shall discuss challenges in teaching and learning mathematics in Tanzania (Mainland) at the primary, secondary and university levels and at each level we shall suggest ways and means of mitigating the problem.

At the primary schools level we shall use data on performance of pupils in the *Primary School Leaving Examination* (PSLE). At the secondary schools level we shall use data on performance of candidates both in the, *Certificate of Secondary Education Examination* (CSEE) which is done at the end of Form IV and in the *Advanced Certificate of Secondary Education Examination* (ACSEE) done at the end of Form VI. The aim of presenting the performance of candidates at these two levels (primary and secondary) is to highlight the magnitude of the problem. We shall also use the examination results to expose the challenges posed by the problem to various stake holders. In the sequel, we shall point out the possible causes of the problem, with a view to come up with recommendations to key stakeholders on the way forward.

Because of the unavoidable dependence of knowledge at different levels of the academic pyramid, analysis of the problem and its possible solution at each level is bound to have substantial overlap.

Performance at primary level. The quality of our primary education is extremely poor. The following statistics bear witness to this pathetic situation.

Overall failure rate. The Primary School Leaving Examination (PSLE) consists of five examination papers, one on each of the following topics:

- Kiswahili
- Kiingereza
- Maarifa
- Hisabati
- Sayansi

Almost 50% of all primary school leavers fail the PSLE by scoring an overall D or E grade. The overall failure rate for a period of 5 consecutive years (2007 – 2011) is as shown in Table 1.

Table 1

Overall failure rate in the PSLE in all five topics - NECTA

Year	Failure Rate
2007	46%
2008	47%
2009	51%
2010	46%
2011	45%

Source: National Examinations Council of Tanzania (NECTA, 2012)

Comparative failure rate. The percentage failure rate in each of the 5 topics examined for the same five year period (2007 – 2011) is given in Table 2.

Table 2

Failure rate in the PSLE in each of the five topics - NECTA

Subject	Year				
	2007	2008	2009	2010	2011
<i>Hisabati</i> (Mathematics)	83%	82%	79%	75%	61%
<i>Kiingereza</i> (English)	69%	69%	65%	64%	53%
<i>Maarifa</i> (General Knowledge)	44%	39%	41%	32%	45%
<i>Sayansi</i> (Science)	33%	32%	47%	44%	39%
<i>Kiswahili</i> (Swahili)	20%	27%	31%	29%	31%

Source: National Examinations Council of Tanzania (NECTA, 2012)

Table 2 shows that mathematics consistently leads the other topics in the rate of failure, followed at a respectable distance by English. A gender breakdown of the data for mathematics reveals that, on average, the failure rate for girls is almost 10% higher than that of boys. This is shown in Table 3.

Table 3

Failure rate in Mathematics according to gender - NECTA

Year	Boys	Girls
2007	77%	89%
2008	77%	87%
2009	75%	83%
2010	71%	79%
2011	56%	65%

Source: National Examinations Council of Tanzania (NECTA)

The data displayed in Tables 1, 2 and 3 on performance of pupils in the PSLE indicate that there is a serious problem in the entire process of delivering primary education in Tanzania, especially in mathematics at the Primary level.

Consequences of the Problem at the Primary Level

The consequences of the problem of mass failure in mathematics in the PSLE are many:

- The declared national objective of considering primary education as forming the foundation of education in Tanzania is ridiculed. More than half of our primary school leavers are barred from pursuing any secondary education or vocational training.
- Some of the pupils who fail mathematics do pass the PSLE on the basis of better performance in the other topics and are admitted into Secondary Schools (Form I – IV) where mathematics is a compulsory subject. In this way the primary failure syndrome is transmitted to the secondary schools.
- This problem of massive failure in mathematics in the PSLE is documented and well known to all stakeholders of education in Tanzania including the Government (Ministry of Education and Vocational Training), primary school teachers, parents of pupils, the National Examinations Council of Tanzania (NECTA), the Tanzania Institute of Education (TIE) which developed the curriculum, and the Mathematical Association of Tanzania (MAT),

Possible Causes of the Problem

What is not known to many of the education stakeholders are the possible causes of the problem. The root causes of the problem can only be found by analysing the entire primary education process in the country, from policy to the final assessment of pupils in the PSLE. The causes of the problem are a combination of shortfalls in some or all of the essential stages in the education process.

Education policy. Are our education policies well focused to meet the needs of our current society and are we, as a nation, giving education the priority level it deserves?

Curriculum. The curriculum of an education programme includes clear statement of the programme objectives, syllabi, texts, quality of trainers, other training resources, duration of the programme and mode of assessment. Is our primary school curriculum well stated, available to stakeholders, implementable and are the required resources available and adequate? In particular. Is the primary school *syllabus* designed to achieve the educational objectives stipulated in the curriculum? Are primary school *textbooks* appropriate and available to pupils? Are there enough and properly trained primary school mathematics *teachers*?

Examination

Is the Primary School Leaving Examination (PSLE) a *reliable* instrument for measuring the learning outcomes stipulated in the curriculum and associated syllabi?

Answers to the Questions Posed

Answers to the key questions raised above must be provided by the relevant authority for each. Policy matters, textbooks and teachers must be addressed by the Ministry. TIE is responsible for curriculum and syllabi matters and the issue of examination is to be handled by NECTA.

Unless answers to these key questions are found and implemented, there will be no let up in the downward trend in decline of our basic education at the primary school level and its domino effect will be real and devastating at all levels of our educational pyramid.

Performance at the Secondary School Level

At the secondary school level, the following three separate mathematics courses are offered. *Basic Mathematics*: a compulsory course for all students at Junior Secondary Schools (Form I – Form IV). *Basic Applied Mathematics (BAM)*: an elective course at Senior Secondary School level (Forms V – VI) for students who do not take Mathematics as a principal subject. *Advanced Mathematics*: a course offered at Senior Secondary School level (Form V – Form VI) to students taking Mathematics as a principal subject.

Observation

It is important to note that many of the primary school leavers who join Form I are those who passed the Primary School Leaving Examination (PSLE) despite failing in mathematics and an obvious consequence of the problem spotted at the primary level is its knock on effect at the secondary education level.

Table 4

Performance of candidates in the CSEE (Form IV) Basic (2003 – 2007)

Year		SAT	PASS	FAIL
2003	F	27,700	4,690	7.55 %
	M	34,405	12,035	19.38 %
	Total	62,105	16,725	26.93 %
2004	F	27,216	5,439	8.58 %
	M	36,148	13,489	21.29 %
	Total	63,364	18,928	29.87 %
2005	F	36,838	5,553	6.72 %
	M	45,743	13,816	16.73 %
	Total	82,581	19,369	23.45 %
2006	F	36,141	5,684	6.63 %
	M	49,588	14,350	16.74 %
	Total	85,729	20,034	23.37 %
2007	F	55,794	13,062	10.45 %
	M	69,280	26,109	20.87 %
	Total	125,074	39,171	31.32 %
Grand Totals	F	183,689	34,428	8.22 %
	M	235,164	79,799	19.05 %
	Totals	418,853	114,227	27.27 %

Source: National Examinations Council of Tanzania (NECTA, 2012)

The Tables (Table 4, Table 5 and Table 6) display the performance in mathematics of candidates at public secondary schools for a period of five (5) years (2003 – 2007) in the CSEE, BAM and ACSEE taken at Form IV and Form VI, respectively.

We infer from Table 4 that: The failure rate at *Form IV* (Basic Mathematics) during the five years period 2003 – 2007 lies in the range 69 – 77 percent, with an average of almost 73 %. The difference in failure rate between male and female candidates in the CSEE (Form IV) is not significant, being less than one percentage point.

Approximately, 81% of all female candidates failed compared to a failure rate of 66% for male candidates.

Table 5

Performance of Candidates in the ACSEE (BAM - Form VI) 2004 – 2008

Year		SAT	PASS	FAIL
2004	F	1,634	825 17.00 %	809 16.67 %
	M	3,219	1,992 41.05 %	1,227 25.28 %
	Total	4,853	2,817 58.05 %	2,036 41.95 %
2005	F	1,952	705 12.39 %	1,247 21.92 %
	M	3,738	1,370 24.08 %	2,368 41.61 %
	Total	5,690	2,075 36.47 %	3,615 63.53 %
2006	F	2,390	1,328 18.95 %	1,062 15.15 %
	M	4,619	2,681 38.25 %	1,938 27.65 %
	Total	7,009	4,009 57.20 %	3,000 42.80 %
2007	F	2,867	1,269 15.02 %	1,598 18.92 %
	M	5,579	2,241 26.53 %	3,338 39.52 %
	Total	8,446	3,510 41.55 %	4,936 58.44 %
2008	F	3,241	1,445 14.76 %	1,796 18.34 %
	M	6,551	2,652 27.08 %	3,899 39.82 %
	Total	9,792	4,097 41.84 %	5,695 58.16 %
Grand Total	F	12,084	5,573 15.56 %	6,512 18.20 %
	M	23,706	10,936 30.56 %	12,770 35.68 %
	Total	35,790	16,508 46.12 %	19,282 53.88 %

Source: National Examinations Council of Tanzania (NECTA, 2012)

We infer from Table 5 that: The failure rate at Form VI in the Basic Applied Mathematics during the five years period 2004 – 2008 lies in the range 41 – 59 percent, with an average of almost 54 %. The difference in failure rate between male and female candidates in this examination is significant. The overall failure rate for female candidates is almost one half that of male candidates (18% versus 36 %). Almost equal percentage (54 %) of all female and male candidates failed.

We infer from Table 6 that: The failure rate at Form VI in the Advanced Mathematics examination is relatively lower than that in Basic Applied Mathematics, and lies in the range 15 – 26 percentage points, with an average of about 20 %. The difference in failure rate between female and male candidates in this paper is quite significant. The overall failure rate for female candidates is almost one third that of male candidates (5% versus 15 %). In this case, an almost equal percent (54 %) of all female and male candidates failed.

Table 6

Performance of candidates in the ACEE, Advanced Mathematics 2004 - 2008

Year		SAT	PASS		FAIL	
2004	F	583	464	14.46 %	119	3.71 %
	M	2,626	2,252	70.18 %	374	11.65 %
	Total	3,209	2,716	84.64 %	493	15.36 %
2005	F	807	580	13.93 %	227	5.45 %
	M	3,357	2,659	63.86 %	698	16.76 %
	Total	4,164	3,239	77.79 %	925	22.21 %
2006	F	886	704	15.78 %	182	4.08 %
	M	3,575	2,982	66.85 %	593	13.29 %
	Total	4,461	3,686	82.63 %	775	17.37 %
2007	F	1,035	788	14.51 %	247	4.55 %
	M	4,397	3,638	66.97 %	759	13.97 %
	Total	5,432	4,426	81.48 %	1,006	18.52 %
2008	F	1,191	813	14.44 %	378	6.71 %
	M	4,441	3,357	59.61 %	1,084	19.25 %
	Total	5,632	4,170	74.04 %	1,462	25.96 %
	F	4,502	3,349	14.63 %	1,153	5.04 %
Grand	M	18,396	14,888	65.02 %	3,508	15.32 %
	Total	22,898	18,237	79.65 %	4,661	20.36 %

Source: National Examinations Council of Tanzania (NECTA, 2012)

Performance at University Level

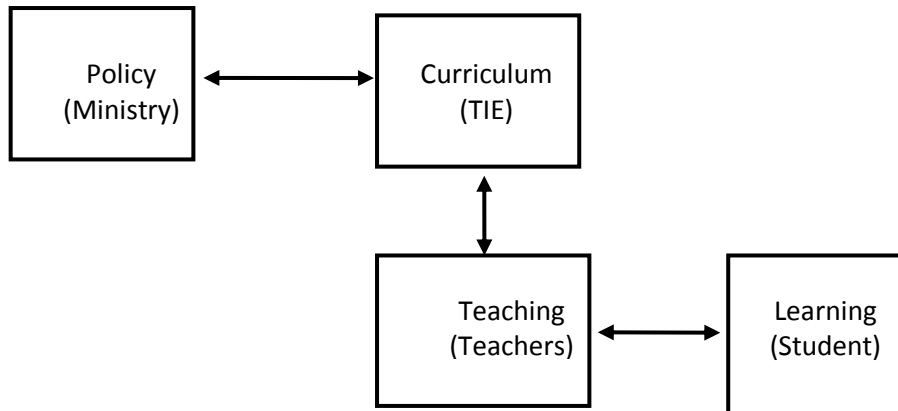
The data presented for performance in mathematics at the secondary level shows that there was a gradual improvement in performance from a failure rate of 73% at Form IV to 53% and 20% in the two examinations taken in Form VI. This trend of improvement in performance is maintained at the university level.

There are two main reasons for this unexpected improvement, namely: After Form IV, the subject of mathematics is no longer a compulsory subject. Admission into subject combinations at Form V involving mathematics or into university programmes involving the subject is strictly regulated. Only applicants with specified pass grades are allowed to study the subject.

However, because of strict admission requirements sighted in (ii) above and because of the high failure rate (73%) at Form IV only a very small percentage (20%) of the Form IV leavers proceed to study mathematics in Form V and VI. The percentage is even smaller at the University level where most of the secondary school mathematics teachers are supposed to be trained. This accounts for the serious shortage not only of secondary school mathematics teachers but also of the university mathematics lecturers needed to train such teachers.

Who is to Blame?

It is easy to point an accusing finger at the two key subjects involved in our earlier triangular model: the *student* and the *teacher*. Certainly, they are part of the problem just as they are also part of the solution. However, the situation is more complex than it looks. In order to identify the factors leading to the problem we have to look at the bigger picture by putting under the loop the four interacting ingredients in the following flow chart.



Education Policy

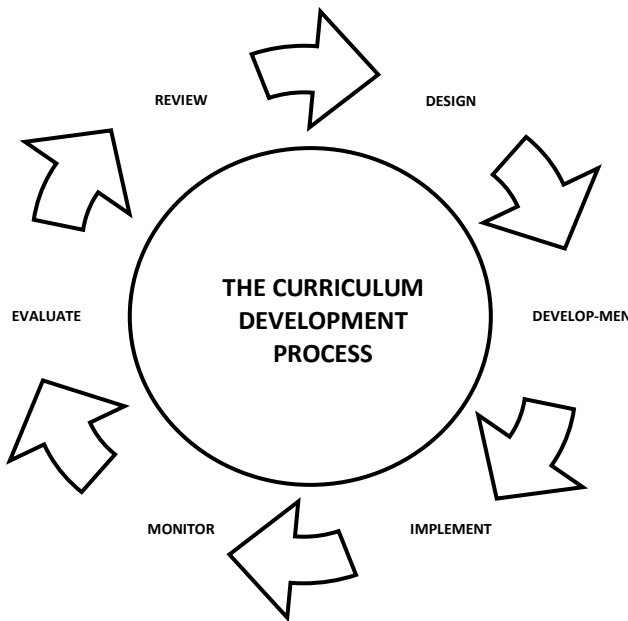
The problem of poor performance in mathematics is not due to lack of guiding policy. Tanzania has an abundance of education policy documents, including the 1995 Education and Training Policy, the National Development Vision 2025, Mpango wa Maendeleo ya Elimu ya Msingi (MMEM) or Primary Education Strategic Development Plan) and Mapango wa Maendeleo ya Elimu ya Sekondari (MMES) or Secondary Education Strategic Development Plan.

However, in addition to having good educational policies, educational authorities at all levels of the educational pyramid must ensure that the policies are properly implemented (*Edwin M. Dickey, 2012*). Problems associated with educational policy implementation contribute significantly towards the problem of poor performance in mathematics. Implementation of various policy documents is weak because of a catalogue of impediments, including budgetary constraints, shortage of qualified teachers and shortage of educational infrastructure.

Curriculum

Curriculum is an inclusive terminology in education. When used as a noun it means all the courses of study offered by an educational institution. Curriculum development describes the entire process of operationalizing an educational training policy. It embodies the following six stages shown in the following organization chart, starting with the designing stage.

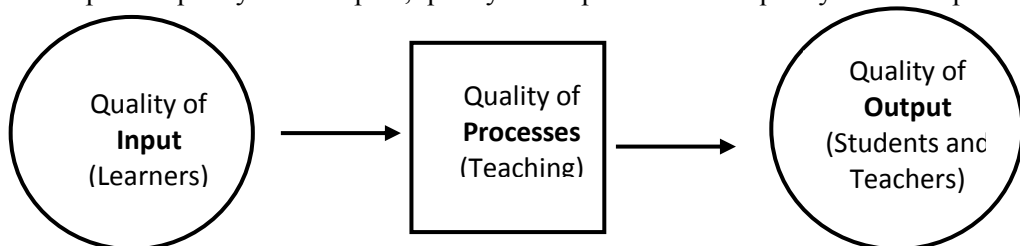
Except for the item on assessment, the statutory organ that is responsible to the Ministry of Education and Vocational Training in organizing the subject content into a curriculum at the primary and secondary schools levels is the Tanzania Institute of Education (TIE). TIE subject experts working in close consultation with subject panels, decide on the content of each subject, determine its level of difficulty and organize it into manageable portions to fit a prefixed timeframe. A badly designed and developed curriculum can have disastrous consequences on the achievement levels of students.



Curriculum developers must pay special attention when dealing with the subject of mathematics, which has all the characteristics of a language. In learning mathematics, one has to learn many concepts (the vocabulary) and apply very strict rules and regulations in a logical framework (the grammar) to arrive at a logical conclusion. The crucial question now is whether TIE has the resources it requires to perform its role of developing curricula successfully.

Quality Assurance

Quality assurance is an essential component of any curriculum development exercise. It encompasses quality of the inputs, quality of the processes and quality of the output.



Learning Process

Students are an input in our model. The criteria for admitting students into any programme and the accreditation conditions for the institution assure the quality of the input. However, several factors have the potential of negatively affecting the quality of learning at the primary and lower Forms of secondary education. They include social adjustment, proficiency in the English language, communication skills, their attitude towards mathematics, past performance in mathematics, and preferred learning style

The secondary school mathematics curriculum must take into consideration these potential contributors to the overall problem in order to reduce their impact on the students' performance. It is worth noting that the high failure rate in mathematics at lower Forms seriously limits any enrolment expansion plans in mathematics at higher academic levels. This is manifested by the data in Tables 4, 5 and 6, in which the *total number of candidates drops dramatically from 420,000 at Form IV to a mere 59,000 (14 %) at Form VI* due to the high (over 70%) failure rate in the subject at Form IV.

Teaching Process

In the educational context, the teaching process includes teaching, learning and assessment. The quality of the process is an admixture of the quality of the teachers, the learners, the instructional materials available, the instruments of assessment. All these have a direct impact on the quality of the output.

The quality of teaching is a function of several teacher related attributes, chief among them being academic qualifications, professional training, motivation in the teaching profession, and style of teaching

There was a time when teaching was among the most respected and relatively highly paid profession in the country, attracting then the best academically qualified students. Those times are now mere history. The profession is now widely considered as the refuge of those students who, because of low academic qualifications, fail to secure any other type of training. Teacher's salaries are low compared not only to that of employees with similar academic qualifications in the private sector, but even jobs in some other sections of the public sector. As a result, teaching has lost its respect in our community and no longer attracts the cream of students. Some teachers have even gone to the extent of abandoning the profession.

This phenomenon is very worrisome. As the country builds more schools, we shall need more teachers with higher academic qualifications and better training. Anything that goes against these goals is a step backwards because, in our view, teachers are the most important resource in ensuring the quality of our academic output.

We congratulate the Mathematical Association of Tanzania (MAT) for its contribution towards uplifting and updating the knowledge content and pedagogical skills of its members during its uninterrupted annual seminars and publications. While we can attract more qualified students to join the teaching profession by revamping their pay package

and other allowances, there is still the need for improving their professional qualifications.

All statutory organs responsible for assessing students' academic performance and those responsible for accrediting academic institutions, are jointly responsible for ensuring the quality of outputs, both students and teachers. These organs include the National Examinations Council of Tanzania (NECTA), Teachers Colleges and Universities involved in training secondary school teachers.

Who is Challenged?

The problem of persistent poor performance in mathematics at secondary school level as exposed by the high failure rate in the subject in Tables 4, 5 and 6 poses a big challenge to all key stakeholders in education. Concerted efforts are required in order to find a lasting solution. Stakeholders in education are many, but the key ones in our context are policy makers, curriculum developers, examining authority, and subject Associations

These stakeholders are in one way or the other part of the problem and therefore must be part of the solution. A lasting solution to the problem lies in each of them singly and collectively making efforts to create the required conducive environment for the teaching and learning process.

Policy Makers

The proper Government policymaking organ for education is the Ministry of Education and Culture. We applaud the Government for having put in place a comprehensive set of policy documents and operational procedures on education. However, policies are only plans and, in order to achieve their objectives one must implement them. Unfortunately, a number of factors hinder proper implementation of many of our education policies. These factors include insufficient number of qualified mathematics teachers, insufficient resources provided to key stake holders, insufficient teaching and learning tools and, unattractive working environment for teachers. A well trained and sufficiently motivated teacher is the key for improving the teaching and learning process in any subject, including mathematics (*James Hiebert and Douglas A. Grouws, 2012*).

To overcome these factors and thereby facilitate proper implementation of the policies we recommend as follows:

- Increase the number of mathematics teachers in secondary schools through training and providing special incentives, including special loans and/or scholarships.
- Provide sufficient financial and human resources to key educational institutions (TIE, NECTA and Teacher Training Institutions) to enable them efficiently execute their respective functions of developing curricula, examining students and training our teachers.

- Provide the required infrastructure and working tools to teaching institutions and sufficient instructional materials to students to facilitate the teaching and learning process.
- Review teachers' salaries and provide commensurate working incentives with a view to attract and retain in the teaching profession teachers with high academic qualifications.

Curriculum Developers

A curriculum is a comprehensive plan for implementing an educational policy aimed at providing knowledge and skills to learners. Curriculum development is an academic profession acquired through specialized academic training and therefore requiring financial, human and technical resources. Achievement of the goals of a specific policy is dependent on the quality of the corresponding curriculum for its implementation.

The Tanzania Institute of Education (TIE) is the statutory organ responsible to Government on all curriculum matters at the primary and secondary schools levels. In order to accomplish its mission TIE needs sufficient and adequately trained curriculum developers, adequate number of supporting staff, and sufficient financial resources

In addition to the above recommendations we also recommend that the Tanzania Institute of Education (TIE) enhances its curriculum development capacity by recruiting curriculum developers with high academic qualifications, adopting a staff development and succession plan that encourages its academic staff (curriculum developers) to aspire for higher academic qualifications in their fields of specialization, encourages formation of and supporting subject associations, such as the MAT, that aim to uplift the academic and professional competencies of its members, and revives and sustains subject panels as think tanks and reference points for curriculum developers in specific subjects.

Examining Bodies

The National Examinations Council of Tanzania (NECTA) is the statutory organ responsible for maintaining standards of output (quality assurance) at the secondary schools level. The Council administers national examinations at the end of Forms IV and VI and awards the Certificate of Secondary Education (CSE) and the Advanced Certificate of secondary Education (ACSE) certificates, respectively, to successful candidates.

Setting a good examination is a science that requires targeted training. Experience in teaching may be useful but not sufficient for setting a good examination. Frequent cases of examination leakages have tended to erode the credibility of the setting system at NECTA and consequently on the reliability of its awards. In order to accomplish its mission NECTA needs sufficient and adequately trained personnel of the highest integrity, adequate number of supporting staff, and sufficient financial resources. In addition we recommend that NECTA expands and strengthens the examination setting, moderation and marking processes to ensure properly designed, professionally set, moderated, and marked examinations to strengthen their credibility and acceptability,

and strengthens security measures surrounding the entire administration of examinations to eliminate the occurrence of any case of examination leakages.

Subject Associations

Subject associations are important players in bringing about improvement in teaching and learning. The Mathematical Association of Tanzania (MAT) does not need being reminded of this role, for it has been on the forefront in executing this task since its formation in 1966. The MAT can proudly congratulate itself for the work it has done during the past 46 years, work which includes holding without any interruption annual seminars for its members, most of whom are secondary school mathematics teachers, publishing regularly its official publication, the MAT Bulletin, and publishing a number of complementary mathematics texts for teachers and mathematics students with a view to improving the teaching and learning processes. In order to maintain and consolidate the work done by the MAT thus far, we recommend that the MAT expands and increases its membership and makes efforts to retain members through aggressive publicity of the activities you carry out and benefits of being a member, and maintains the current momentum of holding annual seminars and encourage members to publish mathematics books and articles both on pedagogical issues as well as on mathematics content to benefit teachers and students of mathematics.

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- 1) Research manuscripts in the field of education should be submitted in Microsoft Office Word.
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- 3) Font: Times New Roman; Font size: 12pt; single space; Skip a line after each paragraph. No indenting unless listing items.
- 4) Each paragraph should relate directly with the title and the objectives/research question(s). Each paragraph should be organised to relate to the next.
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- 6) Writing style: Format of a journal and the latest version of APA format will be used during publication. If other writing styles are used, avoid footnotes, endnotes, appendices and bibliography. Include author's surname and year in the text Use the writing style professionally; but do not indent sources in the reference list, skip a line after each source.
- 7) Title (centred) and heading (left-aligned) should be boldface, uppercase of each first letter in word. For subheading; Boldface, Only letter of first word should be uppercase, full stop, followed by sentences. Subsequence subheading; Bold, uppercase of first letter, italic, full stop, followed by sentences. No other bold allowed. Proper nouns and abbreviations retain their cases.
- 8) Language: Write in English; interpretation within the text is required if other languages are used. Use academic language and avoid using personal pronouns
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- 10) Organize your article into introduction, literature review, methodology, discussion, and conclusion.

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