Mwenge Catholic University

MWENGE JOURNAL OF ACADEMIC STUDIES

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OF

ACADEMIC STUDIES

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EDITOR'S PREFACE

Warm welcome to the Mwenge Journal of Academic Studies (MJAS)!

On behalf of the editorial board, I am happy to introduce to you, our valued readers and contributors, the second issue of our esteemed Journal. This is an emerging and rigorous journal of diverse articles on Education, Humanities and Social Sciences that comes out semi-annually on behalf of Mwenge Catholic University.

The MJAS accepts articles from across the world. The articles are reviewed by a panel of reviewers experienced in the field of education, ICT, socio-economic development, environment, policy and research. The MJAS is available in print and on the web with the key purpose of sharing the knowledge with students, scholars, intellectuals, academicians and practitioners across the globe.

To enhance and maintain its high quality, the journal strives to publish original and rigorous research articles, which are analytical, critical and prompts deep reflection and questioning. This current issue of MJAS carries five articles from diverse perspectives. The articles are on *Participatory Communication as a Feasible Instrument for Social Change in Africa; Predictive Validity of Continuous Assessments in Secondary Education; Effects of Information and Communication Technology on Students' Academic Achievement; Bridging the gap of Tanzanian education leadership between theoretical perspectives and practical approach as a means to bring changes in education and alleviate poverty;* and the last one is on *The State, IGAD and the NGOs: A Multi-Sectoral Approach to Development in Kenya Drylands*

We invite you to forward your original work of research for publication in our Journal (MJAS). Kindly inform about MJAS to your friends, students, colleagues, associates and fellow researchers who may use this opportunity as a platform for their new research inventions.

Once again, warmly welcome and enjoy reading great articles in our second volume of MJAS!

Thanking you,
With best regards,
Godfrey Telli
Editor

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Participatory Communication as a Feasible Instrument for Social Change in Africa

An Examination of the Green Belt Movement of Kenya in Relation to Bella Mody's Theory of Participatory Communication

By Bridgita Samba Mwawasi

Abstract:

*This article examines whether participatory communication can be a feasible vehicle for social transformation using the Greenbelt Movement of Kenya founded by Prof. Wangari Maathai as a case study. It explores the model of participatory communication as proposed by communication scholar Bella Mody, how this concept has been fundamental to the survival of the Green Belt Movement and how it has enhanced the capacity of the movement to promote social change like democracy and human rights. Finally it probes the feasibility of participatory communication as a strategy and instrument of social change in Africa.***Key words: movement for social change, participatory communication, Greenbelt movement of Kenya, Wangari Maathai, democracy and human rights in Africa***

Introduction

The role of communications in social change and development has been at the centre of discussions on modernization for decades. It has been argued that the function of communication processes should be to allow people themselves to define who they are, what they want and need, and how they would work together to improve their lives in order to address complex social issues affecting their societies.

Looking at Africa, we see a number of complex societal issues that need to be addressed for the continent to be able to keep up with the processes and pace of modernization in our contemporary globalized society. However, there are a lot of challenges that Africa as a continent faces in the process. Chief among these challenges are the issues of disease, poverty, unemployment, high rates of illiteracy, lack of access to higher education, and inadequate technological know-how. There are also the challenges of lack of access to information and rigid leadership structures that frustrate the ability of local communities to participate in social development processes as well as to exercise fundamental human rights and freedoms.

These challenges cripple the continent in its efforts to bring about tangible change in all sectors of the society and in the lives of the people of Africa. This calls for the need to reflect on the role of communications in uplifting the living standards of the people of Africa and in facilitating positive change in the continent.

Despite this, it can be appreciated that there have been many positive efforts to bring about sustainable societal transformation in the continent. These include individuals and groups of people who tirelessly work to transform the lives of the local communities in many parts of Africa. These stories however rarely make newspaper headlines. One such story is the story of the Green Belt Movement (GBM) that has revolutionized the lives of thousands of Kenyans. The GBM is a grassroots organization that has managed to command a lot of respect following its significant engagement with basic communities in the Kenyan society and beyond. This is in spite of the fact that many of the members of the movement are part of the uneducated and unemployed sections of the population of Kenya.

Contextual Setting of the Problem

In 2004, Professor Wangari Maathai became the first environmentalist and African woman to receive the prestigious Nobel Peace Prize. As a result of this recognition, Wangari Maathai and her Green Belt Movement (GBM), which she had begun some thirty years earlier, received a lot of attention both at home in Kenya and around the world. Maathai's Green Belt Movement, which started as a local initiative to counter global environmental degradation and warming, had been an instrument for social change, democracy, human rights and peace.

As an environmentalist, Professor Maathai saw her effort as the beginning of a greener Kenya, and by extension, a greener world when she founded the GBM. However, she would soon realize that there was an intrinsic connection between the effects of environmental degradation, including global warming, poverty, malnutrition and the low quality of life among many communities around the world.

Maathai drew a line between poverty, natural resources, environmental degradation on one side and good governance, human rights and peace on the other hand. This nexus would become the core focus of her efforts for social change in Kenya through the Green Belt Movement. She consequently transformed the movement into an informational, educational, and transformational tool for social change, at all levels of society.

Who is Wangari Maathai?

Professor Wangari Muta Maathai (1940 - 2011) was an environmental activist and founder of the Green Belt Movement (GBM), which has been recognized worldwide as a symbol of

environmental conservation (Maathai, 2006). The movement spearheaded civic education and encouraged the planting of trees as an approach to addressing complicated social issues like livelihoods, democracy, human rights and governance.

When Professor Wangari Maathai received the prestigious Nobel Peace Prize in 2004, the press release by the Nobel Peace Prize Commission announcing her winner of the prize stated the following as the reason that prompted Maathai's selection for the prize.

> *Maathai combines science, social commitment and active politics. More than simply protecting the existing environment, her strategy is to secure and strengthen the very basis for ecologically sustainable development. She founded the Green Belt Movement where, for nearly thirty years, she has mobilized poor women to plant 30 million trees. Her methods have been adopted by other countries as well. We are all witnesses to how deforestation and forest loss have led to desertification in Africa and threatened many other regions of the world - in Europe too. Protecting forests against desertification is a vital factor in the struggle to strengthen the living environment of our common Earth* (The Nobel Peace Prize 2004).

Educated in Kenya, the United States of America and Germany, Wangari Maathai received a doctorate degree in anatomy to become the first woman in east and central Africa to receive a Ph.D.

Wangari Maathai worked with the University of Nairobi, the University of Yale in the United States of America, the United Nations Environmental Program (UNEP) in Nairobi, the National Council of Women of Kenya (NCWK), the Economic Commission for Africa in Lusaka Zambia, and many other professional organizations in Kenya and abroad, in addition to supporting many local initiatives on the environment, democracy and human rights (Maathai, Unbowed: a memoir, 2007). She was twice elected as a Member of Parliament and once served as an assistant Minister for Environment between 2003 and 2005 (Tinina, 2011).

Professor Maathai wrote extensively about her life, her work with the grassroots communities, and about a diversity of socio political, economic and cultural issues affecting the postmodern and globalized society. Her chief scientific works include *The Challenge for Africa: A new vision,* in which she paints a vivid image of the plight of the African continent. She examines the historical phenomena that can be attributed to many of the challenges that the continent faces today such as poverty and dependence on foreign aid.

Her autobiography *Unbowed: A memoir* documents the account of her personal life and the struggles for democracy and good leadership while *Replenishing the Earth* draws on

the values and inner discipline she ascribed to. She also authored *The Green Belt Movement: Sharing the approach and the experience* in which she shares the vision, mission, objectives and approach of the GBM. The story of Wangari Maathai has also been documented by Lisa Merton and Alan Dater in a film *Taking Root: The vision of Wangari Maathai*.

The Green Belt Movement

The Green Belt Movement is a Kenyan initiative with a mission to mobilize community consciousness - using tree planting as an entry point - for self-determination, equity, improved livelihoods and security, and environmental conservation. Professor Wangari Maathai describes the movement as follows: *"The Green Belt Movement is a grassroots Non-Governmental Organization (NGO) that focuses on environmental conservation and development. It does this mainly through a nationwide grassroots tree-planting campaign that is its core activity"* (Maathai, 2006, p. 6)

The GBM empowers community members to participate actively in all social processes of transformation. Initially focused on planting trees, the movement later turned its focus to issues that allowed for and promoted democracy. The movement encourages personal as well as community effort and responsibility in bringing about social change. It empowers its members to take control of their own growth both at the personal, community, national and international levels. It builds the capacity of the grassroots population to be in a position to negotiate with the government regarding their and the government's rights and responsibilities for the total liberation of the human person:

> *The genius of Maathai's Green Belt Movement is that it draws upon the energies of women, and a growing number of men working alongside them, to work in some instances to preserve, in others to restore, the native habitat that traditionally has served as the source of their well-being* (Stange, 2009 p. 145).

The birth of the GBM is a historical Kenyan phenomenon that flourished in the mid 70's. It took shape and stabilized in the 1980's and since then it has been identified with Professor Wangari Maathai. The GBM grew out of the attempts by Maathai to strategize on how best to address the societal problem of environmental degradation.

Vision, mission and programs of the GBM

The vision of the GBM is to "create a society of people who consciously work for continued improvement of their livelihoods and a greener, cleaner Kenya", while its mission is "to mobilize community consciousness for self determination, equity, improved livelihood securities and environmental conservation using trees as the entry point" (Maathai, 2006, p. 112).

For local communities to blend in this vision and be able to create such a society, they have to comprehend, digest and assimilate the ideals, values and processes proposed and upheld by the movement. They need to understand the importance and significance of their own participation and contribution so as to consciously and deliberately take part in the process towards the achievement of this ideal society. They also have to be convinced for them to find the impetus to participate.

The mission of the GBM encompasses two fundamental principles. One, conservation of the environment as key to poverty eradication, and two, a rigorous education exercise that would ensure local communities understood their rights, roles and responsibilities within their social contexts, and deliberately and liberally shaped their own future.

Prof. Maathai deliberately used tree planting to achieve the objectives of her movement. Most rural communities that she targeted worked and earned their living through farming. They upheld the value of trees which had a lot of social, religious and cultural functions and significance in their lives. Trees provided food and fruits, timber, shade, and they were a source of income on top of providing sacred places for cultural and religious rites. The trees held together and conserved the soil which was important in the conservation of water sources too (Maathai, 2007, pp. 44-46).

Maathai's movement took on a holistic approach to planting trees and creating green belts. Trees were planted on private land to ensure food security at household levels where agriculture formed the backbone of the economy. The trees would cater for domestic needs of food and fuel. Agricultural cash crops would also cater for economic needs while trees planted on public land would provide beauty, conserve the soil as well as provide shade in public parks (Maathai, 2006).

Tree planting was used as an approach to embark on education with regard to civil and environmental roles and responsibilities of citizens as well as encourage networking and advocacy at both the local and international levels. This helped create national and international awareness on issues of governance that led to degradation of the environment in addition to highlighting the dangers of mismanagement and the importance of community watchfulness. Information and educational materials were produced and disseminated to create awareness of the dangers of management of the environment and the importance of conserving natural vegetation.

To achieve its objective, the GBM had to be smart, efficient, effective, and very tactical at all levels of its work. The movement, and its founder, Prof. Wangari Maathai, needed an intelligent communication strategy that would overcome the trends in the socio political context of the day. The strategy that the movement employed had to encompass all sectors of society for the movement to survive the challenges it faced since it would have

a directly impact on the outcome of the initiative. This we refer to as Maathai's Participatory Communication strategy and which we set out to examine below.

Defining communication and participation

Communication is a multifaceted process that exploits signs, signals, images, phrases as well as language. For the purpose of this article, communication will be defined as the process of conveying or exchanging of information, messages, ideas, signals and attitudes in the process of establishing social interaction. This definition derives from the Latin etymology of communication as indicated in the dictionary of communication sciences and techniques, which also acknowledges and appreciates the existence of other positions and definitions of communication.

Participation on the other hand, can be viewed in two distinct ways. First, participation can be seen as a means to an end, making use of the "participants" to achieve a predetermined end outside their view. Second, participation can be seen to be an end in itself and is seen as a way to empower the participants (Servaes, Jacobson, & White, 1996).

According to Juan Diaz Bordenave (1994), participation is the process in which a person recognizes their uniqueness and worth as individuals within a community. This recognition also helps them appreciate their contribution to that community as members (Bordenave, 1994). Participation in the design and implementation of a project helps people identify themselves with a project and feel they are an essential organ in the life of that project.

Defining participatory communication

Participatory communication can be defined in various ways. According to the dictionary of the science and techniques of communication, the concept of participatory communication has roots in the works of Paul Freire and Herbamus Jurgen (Lever, et.el, 2002). Paulo Freire insisted on participation and dialogue guided by reflection and action in the practice of social transformation as a function of communication (Freire, 1971).

In reference to communication, participation refers to the process that calls for actual engagement of people in the course of communication, taking into consideration the dynamics and various factors involved in that process. This is according to a number of scholars of participatory communication including Robert Huesca, Jan Servaes, Anselm Lee, Diaz Bordenave, Srinivas Melkote, Everett Rogers, Terry Bergal and Bella Mody, whose theory and methodology has enlightened the study of the communication strategy employed by the Green Belt Movement.

Jacobson believes that both participation and communication can actually be termed as

another development and effectively help focus attention on people and the important role of self realization in local efforts which could be systematically extended to national and international economic and political spheres (Jacobson, 1994, pp. 60-73).

Bella Mody and Anselm Lee (2003) hold that participatory communication is a result of a deep social analysis, a look at history and a realization that the top down model of communication that had been the preferred organizational communication model for a long time was not practical in changing the living conditions of many grassroots communities (Bella Mody, 2003, pp. 100-104).

In Tanzania, Nkwabi Ng'wanakilala's *Mass Communication and Development of Socialism* and Julius Nyerere's *Freedom and Development* try to place participatory communication at the centre of development efforts and any positive social transformation with regard to the ever persistent struggle for democracy that seeks greater participation of the people. Let us now examine the GBM against the concept of participatory communication as perceived and proposed by Professor Bella Mody.

Who is Bella Mody?

Bella Mody is a psychologist, media specialist and professor of Communications who has researched widely on international media, communication technology trends and their application in developing countries. Through her work with the World Health Organization, the World Bank, UNESCO, USAID, Dutch Aid, and Worldview International Foundation, Bella Mody has had "field experience with communication projects in Nepal, Thailand, Ghana, Tanzania, Zimbabwe, Kenya, Liberia, Jamaica, Barbados, and Costa Rica" (Mody, 1991, p. 212).

Mody is a scientist and a theorist who worked in the telecommunications industry and served at the organization of Indian space research. She was also a professor in the field of communication in various universities in the United States of America including Pennsylvania University, Michigan State University, San Francisco state University of California, and Stanford University.

In 2004 she became the first chair of the James E. de Castro in Global Media at Colorado University School of Journalism. Her research studies were focused on developing countries and looked at issues of politics and economics of media ownership, as well as media programming in these countries.

Participatory communication according to Bella Mody

According to Bella Mody Participatory Communication is an audience based approach to communication where the content and goal of any communication process fundamentally focuses on the persons involved in the process.   She informs further that;

> …*basically grassroots participation is decision making on the design and implementation of the particular kind of national transformation desired. The end is to give people's lives back to them – free from domination by colonial powers, an authoritarian state, transnational corporations, and structures of inequality such as caste and class* (Mody, 1991, p. 20).

Mody's perspective that will guide us in the examination of participatory communication according to the Green Belt Movement and Wangari Maathai, concurs with and adopts the definition of the United Nations Educational, Scientific and Cultural Organization (UNESCO) which defines Participatory communication as

> …the social process in which groups with common interests jointly construct a message oriented to the improvement of their existential situation and to the change of the unjust social structure *(Mody, 1991, 30).*

Mody advocates the empowerment of the grassroots to ensure they actively participate in all social transformational processes. Mody's approach to participatory communication goes beyond just involving the grassroots or empowering them to participate in given projects in particular contexts. She is aware of the dynamics and factors beyond the grassroots that either inhibit or facilitate the active participation of the grassroots.

Mody offers a suggestion on the need to involve a whole set of players in any given contextual setting. This approach could be applied in different sociological and contextual realities. She demonstrates how to ensure participation takes place from the idealization to the implementation of a project and beyond. A preview of the writings of Prof. Mody helps us put into perspective, and therefore be able to comprehend, her proposed participatory approach to communication.

In her introduction to *International and Development communication; a 21st century perspective*, Mody proposes a participatory communication strategy with the audience as significant and at the centre of the production of the communication content. The content or message is at the centre of the communication process in as much as the parties involved in the process. The sender, the channel and the producers, and the context in which the message is created are as much integral to the process as the content itself and the end user (Mody, 1991).

Mody ascertains that participatory communication can facilitate inclusion of the audience

in the designing of the communication message in the era of globalization by agents of social change such as development planners, health and education professionals as well as cultural animators so as to achieve maximum results for further social advancement. She proposes a bottom up strategy of communication where emphasis is placed on the concrete day to day needs and concerns of the people when developing any information for communication.

In *Telecommunications Politics: ownership and control of the information highway*, Mody argues that structural adjustments that many African countries embarked on in the 1980s and 90s were ineffective because they did not embrace participation of the grassroots population (Mody, Bauer, & Straubhaar, 1995).

Participatory communication according to Bella would also be sensitive to variables like age, caste, tribe, religion, economic status and literacy of the grassroots as well as traditional forms of education and entertainment appropriate with different groups and the kind of media most appreciated by the community (Mody, 1991).

We now turn our focus to the communication practice of the Green Belt Movement and how participatory communication as proposed by Bella Mody is practiced in the work of Wangari Maathai and the GBM.

Mody and Maathai in tandem

Though Bella Mody's plan on message design focuses on planning of messages for media, it also targets students and professors of development communication. Mody describes her design as "a 'do-it-yourself' text on audience participation based content design for national transformation in third world settings (Mody, 1991).

Mody's blue print could be applied to any project aimed at bringing about concrete social change and that genuinely seeks to employ participation as a strategy or as an end in itself. The design can also be used to measure the success of the project and the level of participation and satisfaction of the groups of persons taking part in it.

Using the propositions of Mody, we now examine Maathai's communication strategy and message design that has enabled her audience to participate in the activities of the GBM, namely program ideas, implementation and evaluation.

The approach and structure of Communication for social change

Proponents of participatory communication acknowledge that the history and praxis of communication for social change has been modeled on a top down approach. This approach

removes beneficiaries from the overall picture as equal participants in the project. Used to this kind of model, local groups like those involved in the GBM get confused when introduced to a different model that pulls them to the centre of the process and actually recognizes them as protagonists in their own transformation.

Mody argues that the organization of mass media systems perpetuate the notion that the source of development initiatives is at the top while the receivers quietly wait at the bottom. According to her, the mass media are "*organized to send development messages from supposedly know-it-all development experts in capital cities to supposedly ignorant peasants and slum dwellers who are perceived to need development*" (Mody, 1991, p. 26).

Mody's design necessitates a continuous process of exchange of ideas, experience and deliberations in the recognition that structures may either bring about meaningful social change or hinder that change if not properly implemented and monitored.

Focusing on Wangari Maathai, we realize that on various occasions she called for the review of the structures that became a burden to the emancipation of the people at the grassroots level. She lengthily discusses this in her book: *The challenge for Africa*, where she analyzes national and international structures that supposedly overwhelm the more vulnerable of societies. She mentions international trade practices, aid dependency, governance and even social institutions like the family as important to the emancipation of the peoples of the world. She as well demonstrates the link between national and international structures with the situations of many grassroots communities around the world and specifically those of Africa.

Maathai insisted on structures that envision citizen participation to ensure good governance and holistic social transformation, as well as the role and importance of revisiting the history, the language and the cultures of a people in the process.

Mody on the other hand places the socio cultural setting and sensitivity of a people at the centre of message design since this may determine whether communication actually occurs. She asserts that if a local community feels their valued customs and practices are undermined by proposed messages, they may refuse to cooperate and well meant programs may be doomed to fail, however rich their contents (Mody, 1991, 52).

Significant social transformation is dependent on the active involvement of all stakeholders, more so the grassroots community. Mody's multi directional approach to communication does just that. Here communication channels are at play in the process of facilitating contact among all participants.

> This implies vertical, bottom-up, people-to-planner information flows on needs, priorities, and preferred modes of meeting them. And it also includes top-down,

planner-to-people information flows in response to community information they receive. Information has to keep flowing three ways in a never-ending spiral as it were, first horizontally and then up, and then back down, continuously, and on a variety of issues (Mody, 1991, pp. 28-29).

Mody argues that communication should focus at mobilizing open minded self expression and management for self development for it to be participative. Maathai on the other hand argued that the greatest problem with the poor in Africa is disempowerment that leaves the people unable to do anything for themselves. They lack self confidence and feel totally helpless in the face of a variety of social problems. It was this conviction that compelled her to resolve to empower the people at the grassroots when she was elected to parliament in 2003.

I was also keen to see how I could apply in a parliamentary constituency the Green Belt Movement's approach to development: working from the bottom up to reach those who plan and execute the large-scale development models whose benefits rarely trickle down to the poor. I also hoped to empower communities to undertake their own development {initiatives} and learn to assume responsibilities as well as assert their right (Maathai, 2009, p. 133).

Mody whose interest has always been focused at developing countries argues that a participatory based approach should be a strategy to help those who employ it to build the capacity of their diverse audiences given their specific contextual realities.

The South cannot be blindly imitative since the complexity, scale, and intensity of social, economic, and political mobilization it needs for transformation is quite distinct from anything the North ever needed or experienced. The means for mass participation and mobilization for national transformation cannot be identical in different countries of the South either, because of their distinct histories, geography, economics, and culture (Mody, 1991, pp. 20-21).

Wangari was equally convinced that it was imperative to include the grassroots in the efforts to expand the democratic space in Africa. An expansive argument on this can be found in her book entitled *Challenge for Africa*.

The strategies used by the GBM to ensure participation and ownership by local communities can be seen in the organizational structure of the movement. The main activities of the GBM were carried out in the field where local communities played a substantial role. The tree planting exercise had the most elaborate and participative structure with representation of persons on the ground. Even though some operations like production of educational resources occurred from the headquarters in Nairobi, dissemination of information was done by local tree nursery group members. There was also a clear ten step procedure in the planting of the trees and a follow up to ensure their

survival. This motivated the members and kept them energized as they keenly observed the growth of their plants (Maathai, 2006).

Community Building through communication

Mody believes that to be effective in communication, the process has to encompass collective efforts aimed at building a community of people with shared understanding of events and situations. In this case, where mass media are used, their function is to actually ameliorate communication but they cannot replace community. Their role is to facilitate community building. Other than this, she argues that the media risk isolating people if they do not facilitate the process of achieving collective signification (Mody, 1991).

> Research on communication processes in developing countries must evolve beyond communication and development as a mechanistic strategy with associated tactics, to a full-blown disciplinary perspective on communication-in-society, sophisticated enough to be specific to particular developing country time-and-place conditions and universal enough to be comparable (Mody, 2006, p. 885).

Maathai similarly believed that this kind of comprehension and shared meaning reinforced the sense of community and shared responsibility. It helped to achieve continuity with regard to projects that were aimed at benefitting the community. When meaning is shared by the community, the process or the project continues even in the absence of one party until the intended goal is achieved.

With the demise of Prof. Wangari Maathai, the GBM, if it is people owned, should be able to continue with its work since the communities have cultivated an identity and feel they actually own the movement. Wangari herself attested to the necessity of collective effort "*I am very conscious of the fact that you can't do it alone. It's teamwork. When you do it alone you run the risk that when you are no longer there nobody else will do it*" (Maathai, 2006, p. 138).

This is also reflected in the readiness with which Professor Maathai shares the approach of the GBM to ensure it is embraced by more people outside Kenya. In 1985 the GBM conducted four workshops for 45 participants from 15 sub-Saharan countries. Subsequent efforts would see the support of many more countries and the call for the replication of the GBM techniques outside Africa, including the United States of America and Haiti (Maathai, 2006).

Though principally writing for producers of media messages, Bella Mody insists that their messages would only be meaningful if the end user, the audience finds satisfaction in them. For her it would be futile effort, however intelligently encoded if the end user does

not comprehend it. To achieve a shared meaning, the end user would have to be factored in at all the stages of the project: *"the proposed communication design begins with the audience and ends with the audience"* (Mody, 1991, p. 45).

Maathai similarly indicated as part of the lessons learned in her practice and work with the GBM that social transformation initiatives should address community felt needs. At the same time the message of these initiatives should make sense to all stakeholders (Maathai, 2006). Aware of these dynamics, the GBM, allowed the grassroots communities to be initiators of tree planting projects as well as grow their own tree nurseries with the objective of participating in the transformation of their own life situations.

According to Mody, senders and receivers are equal partners in the construction of meaning. Notwithstanding the channel, sender-receiver dialogue is important and can enhance communication. Participation requires that both parties be involved in the formulation of the idea and in bringing it together to fruition, each party contributing the best they can of their knowledge, skills and know-how (Mody, 1991).

Mody argues that it is the receiver who actually controls what and how much of it is communicated and proposes an audience research that ensures it brings into the picture the local communities that may be the focus of the any social communication. She also maintains that a meaningful reciprocal engagement for national transformation needs honest and objective dialogue based on factual data.

> *Production planners need unbiased audience dialogue for the foundation of their programs […]. If those who manufacture soap and cars for mass markets base their product design and advertising decisions on hard data about their consumers, why should public service communicators be less conscientious?* (Mody, 1991, p. 54).

Maathai on her part proposed leadership revolution as a crucial ingredient in the transformation of Africa. She argued that the fact that many African leaders do not seem to observe the plight of their people is a cause for worry. She appealed for leaders with a sense of service to the people. This revolution of leadership would not only target political leaders at the top of government positions, but also the citizenry who needed to be empowered to govern their own affairs. She argues that "*It is for Africans to decide whether they will work hard to build up their own talents and abilities, strengthen their democracies and institutions of governance, and foster their people's creativity and industry*" (Maathai, 2009, p. 23).

This they could do by believing in themselves, taking responsibility for their own lives, forging their own identity, claiming the right to be governed with justice in their contextual situation, and rising above ethnicity. Maathai argued that this was a collective responsibility

and a reality that the continent of Africa had to confront.

> *Only Africans can resolve to provide leadership that is responsible, accountable, and incorruptible. It is they who must embrace their cultural diversity, restore their sense of self-worth, and use both to create thriving nations, regions, and the continent itself. It is they who must begin the revolution in ethics that puts community before individualism, public good before private greed, and commitment to service before cynicism and despair* (Maathai, 2009, p. 23).

Conclusion

The GBM has been a concrete example of how communication can be used at the grassroots level to achieve large scale transformation. This has been brought out in the examination of the communicative elements exhibited by Wangari Maathai; elements that facilitated the participation of millions of people in the activities of the movement. Participation is the attribute that distinguishes the communication strategy herein examined.

Elements that Bella Mody singles out in her framework for participation in designing communication messages for development and social change include a critical analysis of the problem at hand, continuous dialogue with various actors and social structures, monitoring and evaluation of the process at all levels of a project, and appreciation of the values and cultures of the people.

Local communities are essential and have the potential to steer national development and social change. However they may lack the forum, the motivation and the structural dispensation within which to achieve this. The rich experience and inherent knowledge possessed by these communities, if factored into social development processes, could unleash their potential and capacity to maneuver their own life situations and that of whole societies.

The existent of grassroots communities is strength, a resource and an opportunity for positive social change. Participatory communication can be used strategically to empower these communities.

Though Professor Maathai passed on in September 2011, it is hoped that this analysis will be a basis for a more systematic study that will lead to a better posthumous knowledge of Professor Wangari Maathai and the GBM besides raising awareness of the importance of participatory communication as an indispensable tool in the process of social transformation in Africa and beyond.

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Predictive Validity of Continuous Assessments in Secondary Education

Paul Kitula and Philip Kireti

Abstract

One of the most significant developments in Tanzanian education system in recent years is the introduction of continuous assessment in the evaluation of pupils in both primary and secondary education. Continuous assessment determines the extent of a student's performance in all the expected changes in behavior from the day he enters a course of study. Since it involves data gathering over a period of time, it can play a vital role in diagnosing areas of learner's weaknesses if properly administered. When students are molded by continuous assessment practices they are placed at a good chance of performing well in the final examinations. A study conducted in Lindi shows that in spite of continuous assessments being practiced in all schools in the municipality, their predictive value on final examinations has not been substantial. This article provides an over view of the theoretical basis of validity of continuous assessment. It also presents research findings on the predictive strength of continuous assessment scores in prediction of performance of students in the final examinations in sampled secondary schools in Lindi. Finally strategies that may improve implementation of continuous assessments in schools are proposed.

Key words: Predictive validity, Assessment strategies, Learner's performance

Introduction

Assessment is a means whereby the teacher obtains information about knowledge gains, behavioral changes and other aspects of the development of learners (Oguneye, 2002). It involves the deliberate effort of the teacher to measure the effect of the instructional process as well as the overall effect of school learning on the behavior of students. Assessment covers all aspects of school experience both within and outside the classroom. It covers the cognitive as well as the affective and psychomotor aspects of learning.

Tanzania educational system, has in recent years, incorporated the use of continuous assessment in the evaluation of pupils in both primary and secondary education. As a matter of policy, continuous assessment scores contribute 30% to the final assessment in the form four national examinations.

One of the expected advantages of continuous assessment lies in its being guidance oriented. Since it involves data gathering over a long period of time, it yields more accurate data reaching the teachers early enough to modify instruction. This can play a vital role in

diagnosing and remediating areas of learners' weaknesses if properly anchored in what occurs in classrooms. Continuous assessment is an approach that can capture the full range of learners' performance. Teachers and administrators are, thus enabled to assess learners' progress timely and provide appropriate intervention. Likewise when students are molded by continuous assessment practices, they are placed at a good chance of performing well in the final examinations. This implies that continuous assessment scores can be used to predict students' academic performance in the final examination.

Secondly, continuous assessment places teachers at the center of all performance-assessment activities. It encourages more teacher participation in the overall assessment or grading of learners. As suggested by Paris et al. (1991), teachers must be given opportunities to select and review assessments so that they become involved and knowledgeable in the process. Through this approach, teachers are able to integrate assessment and assessment results into instructional practice. Beside of being an advantage, it also implies that teachers should be well equipped with the assessment skills which will enable them to effectively asses their learners. This is also emphasized by Paris et al. (1991) who pointed out that there is a need to conduct such assessments following established procedures and practices. To make the results comparable across all the schools, teachers need to be equipped with skills of test construction and administration. This could be done through teacher training programmes so that teachers are equipped with such skills as part of their training and certification.

Thirdly, continuous assessments are means to prepare students for the final examination (MoEVT, 2013). Thus they have to reflect the final examinations. They should be valid in terms of the content which is to be assessed, and should have the qualities of the final examination, for them to be best indicators of students' performance in the final examinations.

Despite the fact that continuous assessment is conducted in most secondary schools in Tanzania, most of the students are not performing well in the final examinations. This is evident considering the last year's form four examinations, where the results of one of the poorly performing municipalities in the country, are indicated in the table below.

Table 1.1 Form Four Results for Nine Schools in Lindi Municipality (MoEVT 2014)

School	GENERAL RESULTS					
	DIV I	DIV II	DIV III	DIV IV	DIV 0	TOTAL
Lindi	1	2	7	55	60	125
Mingoyo	0	0	1	25	32	58
Ng'apa	0	0	0	24	28	52
Kineng'ene	0	0	0	5	21	26
Chikonji	0	0	0	11	20	31
Khairat	0	1	6	16	12	35
Ngongo	0	0	1	25	32	58
Mkonge	0	3	8	50	88	149
Angaza	0	3	6	26	29	64

Such results raise questions on the validity of the continuous assessments as an adequate benchmark to judge students' capacity and performance in the final examinations.

Review of theories and research on Predictive Validity of Continuous Assessment

Validity Test Theory postulates that a student's score on an achievement test reflects his or her ability. According to the theory, validity refers to the extent to which evidence and theory support the interpretation of scores entailed by proposed uses of tests (Gronlound, 2009). Validity does not concern with the testing instruments but the interpretation of the results obtained from the instruments. Validity theory support interpretation of scores in terms of expected performance over some performance domain. This implies that if the domain to be assessed in the tests is specified clearly and an adequate sample of tasks is drawn from the domain, it is legitimate to draw conclusions from the observed performances over the domain. Considering the fact that a person's ability over a given domain does not change, it is then expected that a student who achieves high grades on continuous assessments should also achieve high grades in NECTA examinations. This can only be possible if the tasks in the continuous assessment do represent the entire domain which is to be covered by students as stipulated in the syllabi.

Classical test theory (CTT) which is regarded as synonymous with *true score theory*, was born after the following 3 achievements or ideas were conceptualized: (i) recognition of the *presence of errors in measurements*, (ii) a conception of that *error as a random variable*, and (iii) a *conception of correlation and how to index it*. Lord & Novick (1968)

According to Reise (2000) the followings are some considerations when using Classical test theory:

- ❑ *The standard error is consistent across the entire population*. That is the standard error does not differ from person to person but is instead generated by large number of individuals taking the test and it is subsequently generalized to the population of potential test takers. Also, regardless of the raw test scores (high, medium or low), the standard error is the same.

- ❑ *As the test becomes longer, the items become increasingly reliable*. The larger numbers of items better sample the universe of the items, and statistics generated by them (such as mean test scores) are more stable if they are based on more items.

- ❑ *Multiple forms of test are considered to be parallel only after much effort has been expended to demonstrate their equality* (Gulliksen, 1950). Not only do the means have to be equal but also the variances and reliabilities, as well as the relationships of the test scores to other variables.

- *The important statistics about the test item (e.g. their difficulty) depends on the sample of respondents being representative of the population.* That is, the interpretation of the test score is meaningless without the context of normative information. Also, it is true that in CTT, statistics generated from the sample can only be confidently generalized to the population from which the sample was drawn.

- *True scores in the population are assumed to be (a) measured at the interval level and (b) normally distributed.* When these assumptions are not met, test developers convert scores, combine scales and do a variety of other things to the data to ensure that this assumption is met. For example, item responses are changed (for instance in a test that had 4-point Likert rating scale for responses, now the test uses 10-point Likert type rating for the responses), consequently the properties of the test also change.

Basically, the Classical test theory has got two major assumptions:

1ˢᵗ Assumption: a person's score on a measure (*x*) is composed of a true score (t*)* and the measurement error

Equation 1: $$X = T_{+}\varepsilon$$

Where; x-raw scores
T-true scores
ε - random error

That is, Observed Score $(X) =$ True Score $(T) +$ Error (E)

True Score – this is the individual's true ability and is always constant for a particular person.

Observed Score – this is the score obtained by an individual on an assessment.

Error – anything that may have impacted an individual's performance on a test.

By practicing tests, one is minimizing the error and therefore increasing his/her observed score. With zero error (not possible), one's observed score should be equal to his/her true score.

- The term true score can be misleading. In this context, the true score is the expected value (i.e. the arithmetic mean) of the observed scores from an infinitely large number of administrations. Consequently, a true score is a dependable measure although not necessarily a valid measure.

2nd Assumption: errors of measurement are randomly distributed (Feldt and Brennan, 1989)

❑ If the number of scores/items is sufficiently large and normally distributed, the mean of the measurement errors and true scores are not related.

❑ The lesser the error of measurement in assessment procedure, the more the raw score reflects the true score.

❑ When a measure is administered to a group of people or to one individual several times, a researcher obtains a set of observed scores. Each score comprises of true scores and measurement error. If the true scores and measurement errors are unrelated, it can be shown that the variance of observed scores $(\sigma^2 (x)$ can be partitioned into true-score variance $(\sigma^2 (T)$ and error variance $(\sigma^2 (\varepsilon)$

The strength of classical test theory is that, it is based on relatively weak assumptions that it can be easy followed and can be done by any person conducting assessment, since it requires simple mathematical analyses than the other theories, as well, it is less time consuming and gives more reliable results. Also it is possible to use smaller sample size for analyses.

However, the two statistics, item difficulty and item discrimination, which form the cornerstone of classical theory, are group independent i.e. they are entirely dependent on the examinee sample from which they were obtained. When the sample is too large it may lead to low correlation, but works best with small samples. Moreover, the theory does not differentiate sources of measurement errors. Though the theory indicates that for each measurement there are measurement errors, it does not indicate the sources of such errors. Also it does not provide the means for minimizing the errors when one wants to generalize the results from one group to another. Despite the weakness of the theory, it is still significant, since it opens the eyes of assessment personnel, that for each assessment there are errors. By knowing that the results one gets from an assessment procedure is subjected to errors, one can find out the best ways to minimize the errors.

Generalizability Theory (GT) provides a flexible and practical framework for estimating the effects of multiple sources of measurement errors through an application of analysis of variance procedures. It helps educational assessment researchers to determine appropriate conditions in terms of items, occasions, and raters conducive to obtain an optimal level of score reliability.

The theory is based on the following assumptions:

> *Tests are randomly parallel*. That is, test content is assumed to be a random sample from a defined domain or universe. This random sampling assumption

is more realistic and is commonly made in statistical analyses. Due to this assumption it is therefore important to the test developers to practice accurate sampling of assessment tools from the entire domain which is intended to be measured.

True score cannot represent an individual's latent traits in abstract ways. Instead, these latent traits should be obtained within a specific boundary in order to comply with the object of measurement. Assessment can be broken into component parts and each part can be assessed independently. Each component of assessment (facet) can be independently tested, meaning that teachers have to consider all situations which in one way or another might have an impact on the score a student gets. A proper consideration and treatment of these sources of errors will results to a valid assessment procedure.

The theory provides a framework to simultaneously examine multiple sources of error variance. By so doing, measurement reliability can be more optimally maximized through better informed test revision. Also the theory looks not at how reliable an instrument is over varying situations, but rather how generalizable the results are to a universe. A generalizability coefficient represents the ratio of universe score variance (systematic variance) to observed score variance. This means that the theory puts more emphasis on how the measurement results can be inferred to the entire domain being measured. Instead of asking how accurately observed scores reflect their corresponding true scores, generalizability theory asks how accurately observed scores permit us to generalize about persons' behavior in a defined universe of situations. The possibility of treating sources of error as fixed or random allows a researcher the flexibility to consider measurement errors that will generalize to either a universe of facets or to only a fixed number of facets.

Reliability theory is the one that explains the effect of random errors on the consistency of test scores. As noted earlier in the classical test theory, an observed score consists of a true score and an error score, such errors can lead to inconsistence of scores even when the same test is administered to the same group of students with a time interval. The reliability test theory identifies the sources of errors and the mechanisms by which the errors can be minimized.

The reliability test theory is guided by three main assumptions which are:

a.   The ability of the subject (students being tested) does not change over the time the measurements are taken.

b.   The measurement instruments do not consist of source of constant errors.

c.   The errors from each trial are independent form each other.

Reliability is affected greatly by random errors which are any factors that will result in inconsistencies between individual's score in repeated administrations of single measuring instruments or from one set of items to an equivalent set. Random errors arise from a number of sources categorized into three groups:

a. **The instrument itself**: the test either being too easy or too difficult, ambiguous items in the test, test being too short or too long.

b. **The scoring procedure**: favoring some students, subjective marking.

c. **Testing conditions**: light, heat, ventilation.

d. **Pupil error**: fluctuation in motivation, fatigue, physical conditions, anxiety.

The reliability of a test is typically reported by means of reliability coefficient and standard error of measurements including:

❑ Test retests method. In this method a test is administered to the same group of people on two occasions and correlation of the paired scores is determined. A test retest coefficient assumes that the characteristics being measured by the test is stable over time, so any change in scores from one time to another is caused by random errors. Also it assumes that there is no practice effect or memory effect.

❑ Alternative forms method: with this method two equivalent forms of a test are administered to same group during the same testing session. The test forms are equivalent in a sense that they are built to measure the same abilities, but for determining reliability it is important they be constructed independently. A high reliability coefficient would indicate that the two independent samples are apparently measuring the same thing and a low reliability coefficient would indicate that the two forms are measuring different behaviors and therefore both samples of items are questionable. This method takes into account errors within the instrument procedure and consistency over different samples of items, but they do not include day-to-day ability of students' responses.

❑ Test retest method with equivalent forms: this is a combination of the above two methods. Here different sets of the same test are administered with time interval. This is the most demanding estimate of reliability since it takes into account all possible sources of variations. The reliability coefficient reflects errors within the testing procedure, consistency over different samples and day to day ability of students' responses.

❑ Internal consistency method: the method requires a single administration. Here a split half method or Kuder Richardson formula is used to estimate the reliability coefficient.

The split half method involves scoring the odd items and the even items separately and correlating the two sets of scores. This correlation coefficient indicates the degree to which the two arbitral selected halves of the test provide the same results.

The reliability coefficient is calculated using spearman-brown formula

$$r_x = \frac{2r}{1 + r}$$

Another internal consistency method of estimating reliability is the use of Kuder-Richardson formula (KR20). This requires a single test administration and determination of proportions of individuals passing each item and standard deviation of the total set of scores.

$$r_{xx} = \frac{k}{k-1} \left(\frac{s_x^2 - \Sigma pq}{s_x^2} \right)$$

By considering reliability as the upper limit of validity, for an assessment procedure to be valid it should in first place be reliable. So the reliability theory provides the best way to construct reliable assessment tools.

Review of Empirical Studies

Most of the research studies that have been conducted to assess the predictive validity of a prior assessment to a future one, have identified a number of factors that influence their effectiveness. A study conducted by Afolabi (1998) revealed that predictive validity of the junior secondary certificate examination can be affected by the quantity of the examination questions and the integrity of the procedure of its administration and scoring.

Robert and Wendy (2010) conducted a descriptive survey on the effects of classroom assessment scores used in grading students at senior high schools in Ghana. The study found out that, the mean scores on all subjects on continuous assessments for all candidates in all categories were higher than the mean scores of the external examinations. The findings agree with the observation done by Baku (2006) that teachers are generally generous in the award of marks to candidates. The factors that seemed to have contributed to this behavior include teachers' subjectivity and poor assessment skills.

In 2010 Femi and Stephen conducted an empirical examination of the relationships between continuous assessment results and secondary school certificate examination grades in mathematics and English in Adivai Nigeria. A correlation survey was employed whereby three secondary schools were purposefully sampled. The continuous assessment

scores and secondary certificate examination grades were obtained from the three sampled schools. The data were analyzed using the Pearson product correlation procedure. The study revealed that the relationships between continuous assessment scores and secondary certificate examination grades were very weak for all the three years examined.

Comparing the scores of consecutive three years was very significant since it eliminated errors which might have risen if only results of one year were used. Factors like cheating on final examination and difficult constructed final examinations were put at minimum.

Another study was conducted by Osere (2009) about the continuous assessment practices in Nigeria schools. She employed a qualitative approach and used focused group discussion to collect data. The study found that the majority of the teachers who participated in the study were professionally untrained and that most of them lacked professional skills such as test construction skills. As a result their continuous assessment instruments were not adequately compressive.

According to Webb and Briars (1990) assessment must be an interaction between the teacher and students, with the teacher continually seeking to understand, what a student can do and how a student is able to do it. If continuous assessment practices are well conducted in secondary schools, they can be used to determine what students might achieve in the final examination.

Statement of the Problem

Assessment involves a systematic collection of data on all aspects of an educational endeavor (Obanya, 1985). This means, if data collected about students academic achievement is used on a continuous basis in a systematic way, it can guide to meaningful decisions on what should be done to remedy a learning situation. As Graume and Naidoo (2004) have rightly indicated, "in a global economy, assessment of students achievement is changing mainly because in an ever-changing knowledge based society, students would not only be required to learn and understand the basics but also to think critically, to analyze, and to make inference for making decisions." It is therefore critical that continuous assessments should utilize strategies that are able to measure the changing students' abilities and attitudes, and this is why a study was undertaken to address the following issues: To what extent are continuous assessments effectively implemented in schools? To what extent do they predict the form four national examination? To what extent do they meet the intended purpose? What factors affect their validity? What strategies can be implemented to enhance their validity?

Methodology and Procedures

The design employed in the study was correlation. The design was used because it produces indexes that show both the direction and strength of relationship among variables taking into account the entire range of these variables (Cohen, 2011). Continuous assessment results were correlated to form four NECTA results to find the relationship among these two sets of data in finding out the extent to which continuous assessment scores predicts students score on national examinations in Biology. The target population comprised of all form four candidates of the years 2011, 2012 and 2013 from Lindi municipal secondary schools, all teachers in Lindi municipal secondary schools, all the academic master or mistresses and the school heads of all secondary schools in Lindi municipality. Candidates during the mentioned years were used in the study because during these years, Lindi region in general was the last in the national form four examinations. So it was important to assess if they were well prepared through continuous assessments before taking the national examination. The head of schools, academic masters and other teachers were involved in the study so as to give their perceptions on continuous assessment procedures in their schools.

From the nine secondary schools found in the municipality, five schools were randomly sampled and each school providing three teachers and twenty four form four students. The total sample comprised of one hundred and four respondents.

Document analysis schedule, questionnaires, and interview schedule were used for data collection and the data obtained were analyzed in terms of frequency and percentage.

Cronbach Alpha was used to measure the reliability of internal consistency of the items so as to determine whether all the items in the instruments measure the same thing and also to reflect how well different items complement each other in their measurement of different aspects of the same variable. The reliability coefficient was calculated and the reliability coefficient value for students' questionnaire and teachers' questionnaires were found to be 0.7 and 0.76 respectively. Data were analyzed by means of frequencies and percentages. Simple liner regression was used to determine the relationship between continuous assessment scores and NECTA scores in biology at 0.05 level of significance.

Summary of the findings

The Extent to Which Continuous Assessments are implemented in Schools

The study aimed to find out if teachers possess the assessment skills, as well as, the actual application of the skills by the teachers when constructing continuous assessment instruments. Teachers' responses to the questionnaire are presented in tables 2 and 3 below.

Table 2: Teachers Possession of Assessment Skills

Item	Response	Frequency	Percent
Training received	Yes	6	40
	No	9	60

As table 2 indicates, most of the teachers who participated in the study had not received training on construction and implementation of continuous assessments. As David (1981:71) pointed out, classroom tests are easily available for use by qualified teachers and that many have impressive properties. The author shows the importance for teachers to be trained so that they can effectively construct and implement continuous assessment tasks if the procedure is to yield valid results. Contrarily, teachers with no training on the construction or implementation of continuous assessments cannot effectively assess their students since their assessment procedures may lack objectivity. This is in agreement with what Ogula and Munene (1996) pointed out, that some of the teachers favor their students or construct test items which are irrelevant to the course objectives hence the results lack validity. Also as indicated by Grounlund and Waugh (2009:341), effective assessment requires that a variety of assessment procedures be used. This is possible only if the teachers have the assessment techniques which are acquired through training.

Constructing and implementing valid assessment procedures, requires one to have the skills which enable him or her to effectively carry out the assessment procedures (Brook 2010.P67). The assessment procedure involves a number of activities including preparing a table of specification, preparing a marking scheme as well as a clear indication of the instructions for doing the assessment tasks. The researcher, therefore, inquired whether the teachers use appropriate procedures when preparing assessment activities. The responses are presented in table 3.

Table 3: Teachers' Responses on Implementation of Valid Procedures when Constructing Continuous Assessment Activities

Activity					Response	
	Ever time		Not always		Not at all	
	F	%	f	%	f	%
Preparing a table of specification	-	0	4	27	11	73
Preparing a marking scheme	1	6.7	6	40	8	53.3
Constructing tests according to objectives	2	13.3	5	33.3	8	53.3

As indicated in the table, most of the teachers (73%) responded not to use tables of specifications when preparing an assessment procedure, whereas 53% indicated that they neither prepared marking schemes nor constructed tests according to course objectives. This implies that biology teachers in the municipality construct incorrect assessment tasks and mark students' works without using marking schemes, resulting to low validity of the results obtained by such assessment procedures. As pointed out by Farrant (1981, 157), before marking a test, one must have a marking scheme which shows exactly what marks are being rewarded to each question and how marks are allocated within each question. This ensures that all the tasks are marked according to the same scheme and that even if other people are involved in the marking, the awarded scores will be more or less alike. Similarly when teachers construct assessment tasks without considering the objectives of the subject, the assessment tasks may measure only what is being taught in schools, but not necessarily in accordance with the curriculum. This argument is supported by Ornstein (1995 P. 361) who indicated that teachers adequately measure what is taught in schools but not in the school curriculum. This affects the validity of the assessment results as suggested in the validity test theory, that a test should adequately represent the domain from which questions are taken, as well as reflecting the national examination, for it to be predictive of the latter. Also considering the generalizabilty test theory, the universe score can be obtained only if a person is assessed in every aspect of the content being taught. For a teacher to ensure that each aspect is assessed, it is important to have a test blue print which will guide him/her to construct a test which covers all that is to be assessed.

As the classical test theory advocates, errors do exist in each form of assessment. But if teachers prepare marking schemes, they are likely to reduce the errors that result from subjectivity. As observed, few teachers do prepare marking schemes, which implies that most of them mark their students' scripts subjectively. This situation might increase subjectivity errors and hence reduce test validity.

Modes of Assessments Used by Teachers

As Grounlund and Waugh (2009) emphasize, for an assessment procedure to be effective, it has to involve a variety of methods. The researcher was, therefore, interested to find out the modes of assessment procedures used in secondary schools in Lindi municipality on assessing students in biology subject and the frequency of the usage of each method.

Table 4: Teachers' Response on the Modes of Assessment Used

Item	Frequency	Percent
Tests	15	100
Assignments	10	67
Homework	8	54

As Table 4 indicates, all the teachers who participated in the study confirmed to be using written tests to assess their students, while only some of them indicated that they used assignments and home work as well. The written tests should be properly made so as to cover all the six domains of cognition as suggested by Bloom (1956), including knowledge, comprehension, application, analysis, synthesis and evaluation. In most cases written tests have been used for measuring a limited range of classroom achievement. This was made evident when teachers reported not to be constructing tests according to table of specifications which could ensure a good representation of all the six levels of cognition.

Table 5: Frequency of Usage of Assessment Strategies by Teachers

Item	Daily	Weakly	Monthly	Term
Written tests	-	15	-	-
Assignments	-	5	7	3
Homework	-	8	7	-

Written tests were the most frequently used mode of assessment, as table 5 indicates, followed by assignments and home works. This could be due to the reason that teachers are also lacking the skills of using a variety of assessment procedures in determining the extent to which students have acquired what they are supposed to learn in a given course. The idea of assessing students progress frequently is encouraged basing on the view that if students are conditioned to do tests frequently, they are motivated to study hard.

Teachers and Students Perception of Continuous Assessments in Relation to Final Score on National Examination in Biology

Most of the teachers who participated in the study strongly agreed that continuous assessment practices help students to revise. This implies, most of the teachers have a positive perception towards continuous assessment practices in relation to students' performance on the form four national examinations.

The responses concur with those of the students who took part in the study where the majority, strongly agreed that continuous assessment practices help them to revise what they learn in the classroom. Just like their teachers, the students also demonstrated a positive perception on continuous assessment practices as means to prepare them for the national examination.

Despite of having positive perception towards continuous assessment, yet students were not performing well in the national examination, when compared to their performance in the continuous assessment tasks. The possible reason could be, as mentioned previously,

that the teachers lack skills in construction of the assessment tools, as well as, incorrect interpretation of the assessment process.

The Extent to which Continuous Assessments Meet the Intended Purpose

As discussed earlier, most of the teachers considered continuous assessments to be a molding strategy for students to achieve well in the form four national examinations. The researcher was interested to find out the extent to which this goal is met. Teachers were asked to indicate the extent to which their expectations on continuous assessments have been met and the responses are presented in table 6.

Table 6: Teachers Responses on the Extent to which Continuous Assessments Met the Intended Purpose

Item	Met	Somehow met	Not met at all
Are your expectations of CA being met?	-	3	12

Only few of the teachers out of those who participated in the study agreed that their expectations on continuous assessments had been fairly met, while none of them indicated that his or her expectations had been fully met. Majority of the teachers indicated that their expectations on continuous assessment practices had not been met at all. The students, therefore, seem not to be prepared adequately, through continuous assessments to do the final examination.

The Extent to which Continuous Assessment Scores Predict Students Score on National Examinations

With regard to the extent to which continuous assessment scores predicts students' scores on form four national examinations in biology subject, continuous assessment scores of former form four candidates for the years 2011, 2012 and 2013 were analyzed and correlated to the respective scores that the students got on the national examination in the respective years. The results are presented in table 7.

Table 7: Correlation of Continuous Assessment Scores and NECTA Scores (n=120)

Nature Of Assessment	Mean	Std. Deviation
Continuous Assessment	3.8	0.9
NECTA	1.6	0.7

As the table shows, there is a significant difference in the mean score of students in continuous assessments and national examination scores in Biology. The mean score of students in continuous assessment (3.8) is higher than that of students in the national examination (1.6).

The reason to this difference could be that teachers set relatively simple tasks in continuous assessment tests as compared to the national examination questions. As Wadu (2006) reported, teachers are generally generous in the award of marks to candidates.

Hypothesis Test

On testing whether the observed difference between the mean scores is significant, scores of 120 students on continuous assessment tests were regressed to the scores the students obtained on the national examination in Biology subject. The independent variable was the scores of students on continuous assessment tests and the dependent variable being the students score on the final examination and linear regression was used to find the regression line. Then ANOVA for significance of regression line was used to test the significance of the line at 0.05 significant level.

Null Hypothesis (Ho)

The null hypothesis stated: continuous assessment scores contributes no information for the prediction of national examination scores in Biology

Assumptions
1. The mean of the probability distribution of the random error is zero
2. The variance of the probability distribution of the random error is constant for all settings of the independent variables in the model
3. The probability distribution of the random error is zero
4. The errors associated with any two observations are independent

Decision rule

If $f_{cal} \geq 3.91$ reject H_o or If $f_{cal} \leq 3.91$ reject H_o

If $f_{cal} < 3.91$ or If $f_{cal} > -3.91$ do not reject H_o

Table 8: ANOVA Summary Table

Source of variation	Sum of squares	Degree of freedom	Mean square	F- ratio
Regression	0.19	1	0.19	0.49
Residual	72.61	188	0.39	
Total	72.80	119		

As table 8 indicates, the value of *calculated f* (0.49) is less than the *observed f* (3.91) hence the null hypothesis is not rejected. Therefore, for this sample, continuous assessment scores contribute no information in predicting students score on the national examination in Biology. The results indicate that there is no relationship between students score on continuous assessment tests and their score on the national examination in Biology in Lindi municipality secondary schools. In other words the continuous assessment scores do not predict students' achievement on the national examination in the named subject for the targeted population.

Challenges of Implementing Continuous Assessment Tests

Inadequate number of teachers for Biology subject was pointed out by majority of the teachers to be a challenge in implementing continuous assessment tests in Biology subject. The reason behind this response was that effective assessment needs good preparation of tests, administering of such tests and scoring. Overloaded teachers could set simple tests which are easy for them to administer and score but have low validity. Lack of teaching and learning resources such as relevant books and syllabi was next mentioned factor by some of the teachers. It would be difficult for teachers to construct valid tests, if they are not following the syllabus from which the form four national examination is made. Other factors mentioned by some of the teachers included students absconding form tests, little assistance from the administration and lack of laboratory apparatus for experiments.

Conclusions

Basing on the findings of the study, the following conclusions were reached:

❑ Continuous assessments are not adequately implemented in the secondary schools in Lindi municipality. This is because most of the teachers do not possess the knowledge and skills needed in constructing and implementing continuous assessment. Also most teachers rely much on written tests which cannot measure all the aspects including practical skills.

❑ Teachers and students have a strong belief that through continuous assessment practices students become more competent in the subject matter and hence they

can perform better on national examination. However, this belief has not translated to reality. Despite the students doing continuous assessments and sometimes scoring high grades on such assessment procedures, they still obtain low grades in the final examination. This implies that both the students' and the teachers' expectations need to be worked on.

❑ Continuous assessment scores in most of the schools do not adequately predict students score in national examinations. This might be due to the fact that teachers are constructing assessment instruments which are relatively easy or irrelevant to what is tested on final examinations.

Basing on the conclusion of the study the following recommendations are proposed:

♦ The government should put more emphasis on improving the teachers' training programmes.

♦ Schools should be adequately equipped with teaching and learning facilities which can be used by students in conducting more practical sessions as part of continuous assessment practices. This will help the students to acquire the practical skills which are examined in the national examinations.

♦ Teachers should be provided with assessment skills through organized in-service training, workshops and seminars so that they can effectively assess their students.

♦ Teachers should construct tests which are free from personal bias and score them objectively. This will make it possible for them to accurately assess their students and provide correct intervention, that is, identify the learning difficulties encountered by their students and develop accurate measures to eliminate such difficulties in the view of helping the students to perform better in the national examination.

♦ Teachers should construct comprehensive assessment tasks which cover all the three domains (cognitive psychomotor and affective) to make the students acquire skills on a wide range of the subject matter. Assessment instruments should be able to measure the learners' intellectual ability, but also affective attributes such as attitudes, motives, interests, values and other personality characteristics, as well as, the practical skills which are assessed in the final examination.

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Bridging the gap of Tanzanian education leadership between theoretical perspectives and practical approach as a means to bring changes in education and alleviate poverty

Godfrey Telli

Abstract

The study, based on secondary data analysis, focuses on the useful link between the theoretical components of leadership in education on the one hand and its practical approach on the other in Tanzania education system. The paper analyzed past and contemporary challenges of education leadership and come up with concrete solutions. Specifically three types of leadership theories, namely, moral leadership, transformative leadership and distributed leadership were discussed. Further, the study explored the state of educational leadership and social justice practices in Tanzania and highlight areas of improvement based on the leadership theories discussed therein. Since leadership theories are broad, the focus is narrowed down to look into the leadership practices in primary and secondary school education system in Tanzania.

Key words: Bridging education leadership gap, leadership theories and practice, Tanzania education system, social justice

Introduction

Investment in education, which indeed starts with a strong leadership base, prepares children mentally and physically to overcome challenges which are part of the global economy and become vibrant citizens and potential future leaders. Moreover, the Tanzania Education and Training Policy guide of 1995 stipulates that the aim of the education sector in Tanzania is "to guide and promote the development and improvement of the personalities of the citizens of Tanzania, their human resources and their effective utilizations of those resources in bringing about individual and national development" (URT, 1995, p. 1). Thus education is unquestionably one of the most important sectors for both national and individual socio-economic advancement. And strong leadership is the key to education sector development.

Educational institutions, namely, schools and colleges, can only play their transformative role correctly if they are supervised by leaders rather than managers (Sergiovanni, 2007).

This perspective can be traced in many contemporary literatures of educational leadership. For example, in their study, Ogawa and Bossert (2000) establish a positive relationship between leadership and organizational quality. They observed that organizational leadership is deeply institutionalized. Similarly, Muijs (2003) reminds us that purposeful leadership is generally accepted as being a central component in securing and sustaining school improvement. Thus, based on this rationale, this study wants to establish the relationship between the leadership theories on the one hand and its practice within Tanzania education context on the other. The purpose is to improve educational organizational quality, empowerment of people of poverty and enhancement of the socio-economic development of the large society.

As it has been noted above, education is a crucial vehicle for transforming the social and economic wellbeing of people in any society (Mbelle & Katabaro, 2003; Wedgwood, 2005). In addition, Mbelle and Katabaro (2003) in their empirical study on performance, accessibility and funding of randomly selected primary and secondary schools in Tanzania, observed that lessons learned from developed and newly industrialized countries proved that investment in education leads to faster growth.

It is apparent therefore that if education is well led and governed, the effect can have a far greater reach beyond the classroom into the transformation of other key segments of society. On the basis of his work on poverty eradication in southern Africa, Nhamo (2006) supports this perspective by successfully establishing the link between education leadership, macroeconomics and poverty eradication in society. In respect to Tanzania, exploring such links, and the potential of educational leadership in strengthening them, is an important project.

The context of the study

Within the context of this study, education leadership in Tanzania refers to the leadership position that has direct responsibilities on the daily routine and overall supervision of education activities in schools, colleges and overall education sector in the country. According to the Tanzania Primary Education Development Plan (PEDP) document and its subsequent summary by Omondi (2004), education leadership in Tanzania can be divided into three main categories. The first category is the national level leaders whose primary tasks are to formulate and oversee the implementation of educational policy throughout the country. For example, one of the most crucial roles of education leaders at the national level according to PEDP (2004) is to set policies and regulations, and establish standards for evaluation and quality assurance. They are also responsible for reviewing education policy and regulations, and collect and disseminate educational information to all stakeholders across the country.

The second category of education leadership in Tanzania is made up of district leaders whose roles include connecting and keeping smooth communications of educational leadership between the national and local levels. They are supposed to translate policy documents from the national level and ensure its implementation at the local level.

The last category is of the local or school level leadership under the administration of head teachers. Also within this group there are school committees whose members are responsible to oversee the practices and overall operation of primary schools strategies and goals.

Tanzania is a sub-Sahara African country with a current population of forty five million people (according to 2010 national census). About 33% of the Tanzanians are living below the poverty line (UNDP, 2008). Moreover, the UNDP (2008) report shows that Sub Sahara African countries are home to the poorest people in the world. It is important to understand that the majority of these countries received their political independences in the 1960s. Five decades later, people in these countries continue to live in the midst of poverty, ignorance and diseases, despite a series of economic adjustments and political reforms.

There are numerous theories and opinions that attribute to this miserable condition. One of them is the economic exploitation as a result of unfair and imbalance international trade between poor countries and rich countries as a result of globalization (Schaeffer, 2003). Nevertheless, this study is going to explore education leadership as a critical internal factor that contributes significantly to the alleviation of social and economic problems in these countries.

Leadership Theories

In this section, the study will primarily review the characteristics of the education leadership, which is necessary to effectively address the issues of social justice in education. And before moving forward to discuss education leadership for social justice it is crucial to discuss issues related to social justice. Indeed, these two concepts are strongly link.

Social justice issues are actually varied and complex depending on environments and contexts. According to Marshall and Oliva (2006), the social justice issues are reflected in the marginalization and oppression of some individuals and communities in the society. For example, within the U.S. society, these issues are typically reflected in the academic institutions and schools, and are manifested themselves in the marginalization and oppression of people of color, the poor, women, gay /lesbian/ transgendered individuals and those with unfamiliar background (Marshall & Oliva, 2006). Within Tanzanian context, which is the focus of this study, social justice issues are reflected in the marginalization of poor people, women and people with disabilities (Rajani, 2002). In both contexts, the link

between schools and social justice is imminent because schools are considered as vehicles for riding society of inequalities and for embedding democratic principles among citizens (Marshall & Oliva, 2006).

Speaking of education leadership; significant number of literatures, historical and contemporary, agree that leadership is the single important variable that has tremendous impact on transforming education and effectively addresses issues of social justice in schools on the one hand (Muijs, 2003; Ylimaki, 2006; Houston, 2007), and significant impact upon the quality of schools and students' achievement on the other hand (Hargreaves, 2006; Boss, 2007). For example, Bossi (2007) in his longitudinal study established that there is significant correlation between the quality of school leadership and the level of student achievement. He contends that ultimate success is determined by one's ability to influence and to lead.

Characteristics of good leadership are varied and broad and thus different scholars have different perspectives on what they are, and how they act and behave. This study will deliberately divide them into three main categories. The first category will look into aspects of leadership style based on the moral authority (Miron, 1999; Trueba, 2004; Sergiovanni, 2007). The second category will look into transformative and visionary leadership style (Giles, 2006; Ylimaki, 2006; Avolio, 2007; Zaccaro, 2007). This is the type of leadership that aims at empowering followers to achieve sustainable development. And the last category will look into participatory, distributive or power sharing leadership style (Lashway, 2003; Moller, 2007).

These are the three broad sets of characteristics of education leadership for social justice that shall be reviewed to reflect education and sustainable development in Tanzania.

Moral leadership

According to Sergiovanni (2007), Moral leadership is about building the symbolic and cultural identity of the organization. Leaders with moral authority focus their attention on the level of compassion, love and caring. Their perspective is centered on the concern for others (Miron, 1999). At the school level, moral leaders are the representative of students' voices. Trueba (2004) gives this perspective full support by asserting that the responsibility of educational leaders is not confined to working with peers, superiors, and teachers alone but also with students and communities.

Leaders who care can change the students' attitude and behavior. This is crucial because students, who are cared for, learn how to care for themselves and others in reciprocal. Engaging students morally in the leadership process makes them feel comfortable with themselves, with each other and with the situation in which they find themselves

(Northouse, 2004). In the process, educational leaders who care build a strong relationship with students, parents and the community for the positive effect on the school success (Giles, 2004).

Under moral leadership, the paramount reward for students and teachers is intrinsic. Thus, the participation by each individual is stimulated not by external rewards but by intrinsic and moral motivation. This is because, when students feel that they have some autonomy over their engagement with any task, that they are capable of accomplishing, and that the goal is valuable and relevant to them, their pursuit of the goal and its consequent rewards incorporates much more self-determination, the hallmark of intrinsic motivation (Stronge, 2006). According to Houston (2007), learning happens when students are motivated and the best motivation is intrinsic.

At the higher level, moral leaders are expected to transform schools into community of learning in order to make substantive improvements for the students. According to Doyle (2004), new thinking about leadership helps schools develop into communities of learners where everyone puts aside hierarchical ideas and adapts to roles that foster collaboration and shared decision making. Doyle (2004) further contends that leadership is no longer a process in which administrators lead from the top of a hierarchical pyramid; instead, they become part of a web of interpersonal relationships.

In sum, moral leadership is about people and within the education context the people who are at the center of focus are students. Thus, while we should not ignore leadership bureaucracy and other organizational procedures within education context, we should also keep in mind the interest of the people we are leading, especially the students. The focus should be on the outcome but without overlooking the process itself.

Transformative and Visionary Leadership

Educational leadership within the environment of countries like Tanzania is very complex, hard to envisage and too challenging. This is because leadership is not context free (Avolio, 2007; Zaccaro, 2007). Thus, leaders should be visionary and capable to attract and develop followers and change the organizational structures for consistently higher achievements. Apparently, leadership is a function of both the leader and the follower and the complexity of the context (Zaccaro, 2007).

A leader needs to show a motivational collaborative determination of vision and at the same time be a team player in order to minimize the gap between himself/herself and the followers (Grace, 2000; Starratt, 2004; Trueba, 2004; Sergiovanni, 2007). To achieve this, the visionary leader needs to be an effective communicator. Education leaders must be able to articulate their vision clearly, persuade their superiors, and their teachers and parents

and carry on a dialogue that helps maintain support and enthusiasm for education reform (Trueba, 2004). Furthermore, Trueba (2004) observed that, lack of communication can result in indecision, and often indecision is based on the lack of trust. He suggests that to resolve this complex problem, the educational leaders must maintain their communication with all parties involved and gain their trust in order to obtain support for specific courses of action (Trueba, 2004).

On the other hand, Leithwood (2004) (as cited in Giles, 2005), found that successful transformational leadership practices were not in themselves particularly unique, nor a set of rigid or sequential behaviors. Rather they are most effective when applied comprehensively, and are contingent on particular contextual circumstances, and also require high levels of collaborative problem-solving expertise (Leithwood, 2004).

Traditional literature attributed transformational leadership to leadership traits, which were referred to as personal attributes. To support this notion, Stenberg (2007) claims that effective leadership is the synthesis of wisdom, creativity and intelligence. He further contends that an effective leader needs creative skills to come up with ideas, academic skills to decide whether they are good ideas, practical skills to make the ideas work and convince others of the values of the ideas, and finally wisdom based skills to ensure that the ideas are in the service of the common good.

However recent studies discarded trait based approaches as being insufficient to explain leader effectiveness (Avolio, 2007; Zaccaro, 2007). They observe that leadership traits should be integrated with other attributes in order to influence performance. Stogdill (1974), for example, found out that the link between leadership traits and performance had produced conflicting results. This is because, according to Stogdill (1974), most leadership traits research has considered the follower a passive or non-existent element when examine what constitute leadership (cited in Avolio, 2007).

Recent review of the treatment of transformative and visionary leadership in the education administration literatures (Ylimaki, Jacobson & Drysdale, 2007; Sergiovanni, 2007; Giles, 2006; Giles, Johnson, Brooks, & Jacobson, 2005) hardly mention leadership traits. Their works are more concerned with leadership practices and qualities within education context that is needed to transform schools for social justice.

Grace's (2000) empirical work informs that education leadership is an attempt, with others, to bring about the transformation of culture and social relation within the school, not as an heroic act of individual charismatic leadership, but as shared enterprise of the teachers, the pupils and the wider community. This notion of team leadership is supported by Allix (2000) when he contends that leadership is nothing if not linked to collective purpose. Allix (2000) asserts further that, it is the responsibility of the leader to mobilize the

motivational forces by influencing the behavior of followers. Thus leadership is at the center of a group and takes the initiative in the relationship rather than being at hierarchical distance from others (Allix, 2000; Grace, 2000).

Education leaders face very difficult circumstances every day. They need a great deal of imagination and determination to overcome the obstacles thrown their way (Trueba, 2004). In fact, leadership theories are not so clear-cut when it comes to implementation within different environments and contexts. They are constrained by situational requirements. Zaccaro (2007), for example, observed that individuals with particular kinds of skills and expertise can, indeed, be leaders in one situation but not in others that require very different knowledge and technical skill sets.

It is important therefore for a leader to be more skillful in assessing different environments, followers' motives and in anticipating their response to initiatives. Within this context therefore, according to Muijs (2003), teachers have the potential to play a key role as agents for sources of expertise and information. It is also essential to take note that, teacher leadership has been shown to be centrally significant in achieving both school and classroom improvement (Muijs, 2003). Pellicer and Anderson (1995), inform that in order for teacher leadership to flourish, traditional top-down leadership styles should be replaced by an emphasis on more devolved and more shared decision-making process (cited in Muijs, 2003). Vision depends upon contextual circumstances and that our communities need visionary leaders who have the wisdom to use all of their resources to meet the current challenges in our schools (Ylimaki, 2006).

From the above, we can therefore conclude that, leaders are the integral parts of the system, subjects to the dialectic forces that affect the system (Gardner, 2000). The transformative leaders empower followers and integrate them to becoming leaders and thus collectively they transform the organization to achieve higher expectations. In the process, leaders themselves are also empowered to achieve even higher expectations. Thus, communication between leaders and followers flow in both directions and in the process leaders shape and are shaped (Gardner, 2000). Transformative and visionary leaders are therefore not born but created by the system in which they are leading.

Distributed and Power Sharing Leadership

Distributed and power sharing education leadership is increasingly becoming very important aspects of leadership style aimed at attaining democracy and higher level of achievement. Apparently this aspect is supported by the fact that leadership role is continuously becoming complex for one person alone to manage. Consequently, according to Lashway (2003), a new model of leadership has been developed; namely, distributed leadership. Despite his fully support for this leadership model, Lashway (2003) however

warns that leadership is distributed not by delegating it or giving it away, but by weaving together people, materials, and organizational structures in a common cause.

Thus, distributed and power sharing leadership is crucial because it relieves the burden of tasks from the head of schools by working not only for the people but with the people. It is democratic and transparent type of leadership style (Lashway, 2003). Power sharing leadership not only increases efficiency in schools but also creates a democratic community in and outside of the school premises. Moller (2007) observed that, democratic thoughts and attitudes must characterize the relationships between those who work in schools and those in the local community. A distributed leadership style creates the society that values and cherishes different ideas and opinions of the others. It fulfils one of the fundamental responsibilities of education, which is to create democratic citizens rather than consumers (Moller, 2007).

It is therefore not enough to share power without creating the environments that are conducive for distributed leadership to operate efficiently and effectively. This could be carried out through empowering staff, which eventually help to strengthen the school culture and community. The democratic leader needs also to alter structural arrangements (redesign the organization) so that more democratic forms of interaction can operate in practice (Leithwood & Riehl, 2003). Trueba (2004) says, teachers can help, but they also need training and leadership. Theoharis (2007), in his survey, established that successful head of schools improved achievement and created more just schools by strengthening the capacity of their school staff. He informed that the head of schools were committed to empowering their staff and in the process staff members were given professional freedom, valued as people, and had a greater say in the running of the school (Theoharis, 2007).

Leaders' basic practices, as noted earlier, are to set a clear direction, developing people for collective support and rebuild the school culture and structures to achieve shared goals (Giles et al., 2004). This kind of leadership practices entail implementation of reforms and a long term solution to overcome resistance to change, which is interpreted as refusal, rejection or withdrawal (Giles 2006).

On the other hand educational leaders are expected to build the ability of followers to become resilient. Resilience (in contrast with resistance), is to react back, and that it represents followers' effort to not only withdraw from, or shield against unwanted changes, but to adapt and assert ones own identity and purposes over and against change, and bounce back from adversity that some changes can inflict (Werner & Smith, 1992) (Cited in Giles, 2006).

It is crucial therefore to have leaders who are able to build a highly motivated and resilient staff, who have the capacity for self renewal and sustainable schools. Self renewal requires

resilient followers, resilient organizational conditions and a supportive external environment (Giles 2007) that build professional skills and the capacity to keep the school progressing (Hargreaves, 2002).

The crucial role of leadership in education therefore is to build the capacity of the followers which according to Giles (2007) is a continuous renewal process. Bearing that in mind, leaders' task therefore is to lead while at the same time working in collaboration with the followers. According to Marion and Uhl-Bien (2001), this task is crucial because leaders are not there to create innovation as individuals per se, but rather to create the conditions that spark innovation. Leaders are therefore part of the dynamic rather than being the dynamic itself (Marion and Uhl-Bien, 2001). Thus building the capacity of followers which is continuous renewal process is a key leadership role that enhances leaders' capacity to lead even better. Again, this is because leaders' focus becomes on-going renewal rather than the accomplishment of just "here and now" tasks.

Shifting the focus to leadership at school level, participation should not only be confined to staff and teachers involvement alone, but also should be broadened to include students, parents and communities, who are the most important variables in the school leadership development. This concept entails that participation is expected to go beyond the transactional leadership practice that seeks to exchange rewards for the compliance of self interested parents (Giles, 2005).

According to Burns (1978), change, rather than maintaining the status quo, is an inherent responsibility of leadership, in which enlightened and committed leaders and followers raise one another to higher levels of morality and motivation (cited in Giles , 2006). Various studies support this argument by establishing a link between parents' involvements and pupils' performance (Epstein, 1995; Moles, 2000; Ziegler, 2001).

In sum, educational leadership is a process whereby an individual influences a group of individuals to achieve a common goal. According to Northouse (2004), leadership occurs in groups. Although traditionally thought of as residing in the apex of an administrative pyramid, a more realistic model in complex and rapidly changing environments would be working together and influence a group of individuals with a common purpose.

The Gap: Leadership Practices

Tanzania is relative vast country. Statistics shows that, by the year 2011 there were about 16,000 primary schools and about 4,367 secondary schools across the country (BEST, 2011). As a result of PEDP and SEDP implementation, the numbers of these schools had increased rapidly. Efficient communication between leaders at the national level and district level and eventually local level is a real challenge. This is due to the poor technology and poor physical infrastructure the country is currently experiencing.

If one thinks technology and infrastructure in Tanzania are the main problems that hinders smooth communication and thus development in education sector then he/she might be wrong. The main problem lies within the leadership echelon itself; and not only at the national level but at all levels (Rajani, 2002). Normally the process of reaching decision and implementation has been centralized and most of the time reached without involving the broader participation of stakeholders throughout the country. This is against PEDP and SEDP policy documents but still it is a practical reality.

According to the ministry of education organizational chart, education leadership at the national level is composed of eight departments. Directors from each department, the Minister, and the Permanent Secretary are the national educational leaders who have full mandate and responsibility for all major policy decisions and implementations on education issues across the country (URT, 2002).

As noted above, participation of other stakeholders is normally very limited. For example, in 2004 The Ministry of Education and Culture in Tanzania initiated, unilaterally, national education curriculum change. The main purpose, according to the Minister, was to reduce the learning and teaching burden from the students and teachers and consequently increase overall school performance across the country. In doing so he was attempting to remedy what Hargreaves (2002) refers to as curriculum fragmentation.

The reform was meant to affect all public and private schools in the country. The district education officers and the heads of schools in collaboration with other stakeholders were obliged to work out the framework of implementation, but were not involved in the decision making process. According to the ministry, the change was meant to support teachers and boost students' performance. However it was the same teachers, students, and parents who strongly opposed it. The government eventually reversed its decision after mounting pressure from education stakeholders.

The above cases reveal that there was a breakdown of communication between leadership at the national level and at the local level. The decisions generated exclusively from the top national level of leadership generally failed to provide answers to the concrete questions being asked by many at the community level. People at the community level in reality lack confidence and inspiration. According to Makongo (2003), people feel more confident and willing to participate in the implementation of decisions if they have participated in the decision-making process and if they have the right to ask questions of those who make the ultimate decisions.

Generally, education leadership in Tanzania is centralized, lacks strong connection with the ground to make informed decision, and most frequently provides its information to the lower level in an emergency and reactive style and in the form of orders and directives. In short, Tanzania leadership in education is fragmented, centralized and undemocratic.

The Gap: Social Justice practices

Education system in Tanzania faces major challenges as far as quality and equity of education are concerned in its management and leadership. Millions of children and their parents are affected as a result. However, there are various groups of people who are affected more than the others. These groups consist of millions of children from poor families, children with disabilities, and female students.

As noted above, the majority of Tanzanians are poor. The lower class family members who live under one dollar a day are mostly located in rural areas (URT, 2005; Madulu, 2002). Poverty situation in Tanzania is attributed to worsening income inequality, and relatively low rate of economic growth, particularly in the rural areas (URT, 2005). Rural areas are the homes of poor peasants who sustain their lives through subsistence farming activities. Madulu (2002), for example, explains poverty in the Tanzanian context as a rural phenomenon. In his study he reveals that about 85% of the poor people in Tanzania are living in rural areas in which 59% of them are categorized as being poor and 44% being very poor. In other words, poverty is deeper and more severe in rural than in urban areas.

Children from these poor families are severely affected as far as school performance, dropout rates, school discipline and advancement to secondary and tertiary education are concerned. Despite the government efforts to abolish school fees and other mandatory contributions in line with PEDP initiatives (Rajani, 2002; Omondi, 2003; Sumra, 2005), these children are still facing many other serious challenges. Most of these challenges are caused by the parents' poor income to cover other school costs. These other costs, such as school uniforms, are usually not covered under PEDP and are solely parents' responsibilities.

It is mandatory across the country for all pupils and students in public schools to wear uniforms. Poor parents normally struggle to manage at least a pair for each of their children. Failure to provide a child with uniforms, including shoes and socks may lead to a child being barred from entering the school premises. This could most likely result for children of poor families to drop out from the school altogether.

Most of primary schools in Tanzania do not provide meals in the afternoon for their pupils. Often times, poor children are going to schools without eating breakfasts at homes. And the daily durations for typical (single shifts) schools are from 8.00 am to 3.00 pm Mondays through Fridays. It is very hard for a ten year old pupil to stay for a whole day without eating anything let alone pay attention and concentrate in the classroom. Children from middle class families are always getting their breakfast before going to schools. They also go with money to buy foods from vendors at schools' yards.

In some districts where schools are closer to the mining and fishing areas, dropping out rate for poor children is very high. They leave schools to engage in fishing and mining

activities in order to supplement families' income. And because the prevailing rate of HIV/AIDS in these areas is high, the infected parents are normally very weak and unable to work and support their families. Thus the burdens of taking care of families are left with these children. These children more often end up dropping out from schools.

The government efforts to expand primary schools in order to improve equity especially for poor rural children did not reduce considerably the gap between poor and rich pupils especially when it comes to transition from primary to secondary schools (URT, 2005). This is because the quality of primary schooling is so low that pupils from poor rural families find very little chance for their kids to go to secondary schools. In order to achieve equity through accelerated expansion of the primary sector, quality was compromised to such an extent that the schooling available to the majority was of very little value and it was only a richer minority that were able to access post-primary education (Wedgwood 2006).

Girls are highly disadvantaged group of children in Tanzania. The situation becomes very bad if the girl is from poor family and even worse if she has a disability (Rajani, 2002). Even when there were massive assertive actions to promote female's social economic wellbeing in the country (Mbelle, 2003), cultural attitude among people inside and outside school buildings became the main challenge (Kuleana, 1999). Education system, the way it is structured, used to prepare boys to advance and taking a leading role in the society while girls are prepared to get married and raise families (Kuleana, 1999). At all times, girls from poor families are more vulnerable.

Most of public schools in rural Tanzania lack enough infrastructures and facilities such as toilets, desks and water. Lack or shortage of these facilities (toilets, desks and water) affect girls more severely than boys. Although PEDP tried to reduce gender difference in enrollment and dropout ratio, still there is a big difference in the passing rate and transition to higher education in favor of boys partly due to poor or lack of proper school infrastructures (Rajani, 2002).

Kuleana (1999) informed further that; after school hours, back homes, the situation is not better either especially within the poor families. Girls normally do not have enough time to do their school homework. They are expected to perform domestic chores in collaboration with their mothers. They collect fire woods, fetch water, cook for the family, wash dishes, taking care of their younger siblings, and so forth. Boys are normally using these times to play or doing their school homework. This cultural setup, mostly in poor rural areas, partially explains why boys perform better in schools than girls. Girls are throughout disadvantaged at all levels of education, due to unfair treatments at homes and lack of appropriate care and lack of facilities in schools (Kuleana, 1999).

The efforts to help these poor children from different sources such as civil society organizations, community based organizations and concerned individuals are always

thwarted by poor outcomes of these organization's efforts. This is because their efforts are normally isolated and scattered with no national or central coordination. Most Non-Governmental Organizations (NGOs) in Tanzania do not have any holistic vision of society, nor are they guided by large issues and, instead, concentrate on small, day-today issues (Shivji, 2004). It is apparent therefore that, education leaders at all levels have great responsibilities to coordinate these efforts in order to realize a desired impact countrywide.

Although indicators in primary and secondary education in Tanzania have improved, the quality of education and the numbers of trained teachers remain a challenge. Poverty and the vulnerability of kids and especially girls to cultural customs, early pregnancies and sexual abuse affect enrolment and completion rates. Illiteracy is high and 28.6% of Tanzanians cannot read and write, with higher rates amongst women (URT, 2005). These are crucial challenges facing the education leadership in Tanzania.

Bridging the gap: theories and practices

Having analyzed the situation of education policy and practice in Tanzania and the challenges it is facing; we are now in a position to attribute its crucial problem to its national and local leadership. According to Rajani (2002), the lack of democratic governance and opportunity for meaningful public participation constitutes the crux of education crisis in Tanzania today. Thus the essential practices for educational leaders unearthed by the bodies of literature are greatly missing in the Tanzanian educational practices on the ground. This section of study advises on how the gap between theories and practices could be bridged.

The study revisits the three broad set of characteristics of education leadership for social justice that has been reviewed. The purpose is to see how these theories could be integrated into practices. To recall, the theories are moral leadership style, transformative or visionary leadership style and distributed or power sharing leadership style.

Bridging the gap: Moral leadership

The situation of education in Tanzania as noted above is in a state of crisis. Children from poor families are especially affected by the situation. To ensure these children are accepted and celebrated in schools educational leaders have to change their perceptions and practices. Poor pupils should be treated with love, passion and dignity. Educational leadership at school level should thus practice moral leadership style to help these children be able to learn even in the difficult conditions at school that lack adequate resources and teaching facilities.

A moral leader can make a significant difference as far as children attendance and dropout

rate in schools are concerned (Sergiovanni, 2007). For example in Tanzania, classroom teaching methodology lacks interaction between teachers and students and are normally coupled with tension between them. Corporal punishments are applied to children indiscriminately. Decisions are made without involving students while actually they are the ones who are mostly affected by those decisions. In the situation like this students normally hate schools and regard them as places for sufferings and pains. Thus, real learning cannot take place in the classrooms and dropout rates will definitely rise.

It is very challenging to work with poor children in a very limited budget as in the case of Tanzanian rural schools. However, to continue working in the situation like this, education leaders should be driven by a deep commitment to equity and social justice and a belief that all children can learn when given a proper support (Portis, 2007). The moral imperative is not only a critical motivating factor, but also creates a reserve for resiliency for overcoming the barriers to change (Portis, 2007).

Teachers in Tanzania should therefore change the prevailing culture inside and outside the classrooms. Changing this culture does not necessarily require significant amount of resources but the way teachers interact with their pupils. This, in itself, is enough to have a tremendous impact on children and the school as a whole. At the district level leaders should support and encourage teachers to devote their time working for education development. And on their side they should recognize that teaching is like any other profession, and thus teachers should be given their due respect by providing them with adequate teaching resources and decent remunerations.

Bridging the gap: Transformative or visionary leadership

According to the evidence brought forward in this study, Tanzania education system also lacks strong, visionary and innovative leaders. The education situation in Tanzania is complex; and it needs visionary leaders who are capable of making crucial decisions vigorously and in a timely manner. It is important to remember that most of policy decisions in Tanzania are made at the central level. These policy decisions are normally failed or produce intended outcomes during implementation because they are holistically implemented without considering different situations and environments in the different districts across the country and the often conflicting interpretation of policy by different levels at different locations within the system (Giles, 2006).

For example, in Tanzania national policy for standard one pupils' enrollment is strictly enforced to seven years old pupils. However, this policy is too general and fails to take into consideration different environments with different social, economy and cultural status. For instance, in some rural areas, seven years old children are too young, mainly because of poor nutrition (among other things), to go to schools alone, some of them are as far as three

miles away from home and sometimes these kids have to cross rivers or forests with wild animals. Parents in these areas would prefer to have their children enrolled in schools at least when they are 10 years old. It is thus the responsibility of visionary leaders to translate and articulate these kinds of general national policy to suit multiple and varied contextual environments.

Tanzanian leadership in education experiences a significant gap. This is the gap between national leadership on one hand and village leadership on the other. Leaders at the national level should plan and budget for education after consulting and receiving practical and realistic information from the local leaders. At the same time, leaders at the village level are supposed to be able to listen to the voices of the marginalized people and collectively push their agenda forward to influence the national leaders to transform culture and social relation within the schools as shared enterprise of the teachers, the pupils and the wider community (Giles, 2004).

Often, in poor countries like Tanzania, failure to implement any education policy decision is essentially attributed to lack of funds. Nevertheless, often times, it is not only lack of resources but lack of appropriate fiscal policies to meet school needs (Trueba, 2004). In the situation like this, it is important to have education leaders who are fiscally creative. For example in his study Trueba (2004) observed that new principals find themselves without funds. However, if they learn to analyze budgets they find ways to help teachers and children to articulate their vision to develop the strategy that will accommodate the small budget and still commit to quality outputs, ownership of the process and continuous learning for highest achievements.

Bridging the gap: Distributed or power sharing leadership

Apart from lack of enough resources and limited budget allocation; lack of democracy and good governance is key to many education problems. Indeed, undemocratic decision making is one of the major challenges facing education leaders at local and district levels in Tanzania. The national leadership should be more open and transparent that allows broader participation of ordinary people across the country in the decision making process. The voice of poor people who are mainly affected by these decisions should be represented. This can be done by their representatives through civil society organizations or their education leaders at the local levels. Children of poor parents are the majority in Tanzania public schools, but their voices are not represented during the process of policy formulation, interpretation, appropriation and implementation.

Implementation of the leadership practices in Tanzania therefore could be divided into two main levels. At the community level school governance should be democratic and transparent, which allows ordinary people an opportunity to participate meaningful in decision making process. Stakeholders at the community levels who are parents, students

and teachers should be able to work with school committees to address their concerns regarding education. Pupils should be given more space to participate in students' government and other school and local government bodies dealing with education.

At the national or policy level, the decision-making process should involve broader participation of effective leaders who engage ordinary people and are ready to be accountable to their followers for whatever outcomes of their decisions. The national leaders should therefore be strongly connected to the ground. Unfortunately, the leadership situation right now leaves out the vast majority of the population uniformed about the reforms and the basis of important policy decisions (Rajani, 2002).

In short therefore, education leadership in Tanzania needs to change and become people oriented. It needs to be decentralized. The important aspect about decentralization is that it gives local leaders, schools and parents greater autonomy in the decision making process and increase their flexibility. If the local educational authorities see themselves and are seen as responsible for education delivery, reformers reason, education quality will improve (Carney, 2000).

Conclusion

In sum, the main challenge faced by education sector in Tanzania fundamentally lies at the feet of the educational and political leadership within the country. Based on the leadership practices reviewed in the literature, Tanzania needs to assess its education system and social justice challenges by reviewing its leadership style and practices. Otherwise, rather than focusing on building a strong base of resilient education organization with sufficient self renewing and sustainable capacity to deal with complex and disruptive change, policy makers would persist with narrowly defined, context free and deficit reform models (Giles, 2006).

Leadership practices analyzed in this study is the guideline to implement and reinforce changes and empower the majority of Tanzanians. The efforts to improve education sector in Tanzania should therefore constantly reflect on how and to what extent educational leaders bridge the informational gap and involve people in the overall reform.

The leadership theories herein if connected with practices to suit the context of education system in Tanzania will enable ordinary citizens to access information and participate in the leadership process and make a difference in education and in their lives. Supporting ordinary people, particularly those who have been historically marginalized from decision-making process to exercise public scrutiny and exert pressure on education leaders, lies at the heart of the solution (Rajani, 2003). The reviewed leadership practices and their eventual implementation are therefore crucial to bridge the gap between leaders and followers, and in the process, education will become vehicle to alleviate poverty in Tanzania.

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Effects of Information and Communication Technology on Students' Academic Achievement in Moshi Municipality, Tanzania

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Abstract

This study examined the effects of Information and Communication Technology on student academic achievement in Moshi Municipality, Tanzania. It employed an ex-post facto research design. One hundred and twenty respondents were sampled from 10 secondary schools. Document analysis schedule, questionnaires and observation schedule were also used as research instruments. Data were analyzed using mean scores; standard deviation, frequencies and percentages. Hypotheses testing were carried out using t-test independent and ANAOVA. The study found out that (i) students in secondary school where ICT is integrated had a higher mean score for the passing success in art subjects in National Form Four Examinations, (ii) teachers and students had positive attitude towards integration of ICT in teaching and learning of art subjects, Additionally testing of hypothesis reviewed that (i) There is a significant relationship between integration of ICT in teaching and learning of arts subjects and students academic achievement, (ii) There is a significant relationship between teacher's gender and attitudes towards integration of ICT in teaching and learning of arts subjects, (iii) There is a significant relationship between a teacher's age group and attitudes towards integration of ICT in teaching and learning of arts subjects. This study concluded that the integration of ICT in education has a significant potential to enhance teaching and learning in secondary schools provided it is carefully planned for and adequate technical and material support is given to teachers and students.

Key words*: Information and Communication Technology, ICT integration, and Students' Academic Achievement

Introduction

The performance in Arts subjects of students in secondary schools in Tanzania has been poor in recent years. HakiElimu (2010) as quoted in Maduhu (2012), points to significant drop in students' academic achievement in arts subjects as an indicator of lack of innovative teaching and learning. The report submitted by MOEVT in 2013 concerning the 2012 form

four NECTA results indicated that there was a drop of performance in arts subjects as compared to science subjects.

Given the poor performance in art subjects by significant number of students, the government of Tanzania and educational stakeholders were left with number of options on how best these students and the schools could be supported. An important educational issue to be considered is on how to meet the needs of art subject teachers and students in the classroom. They perceive the mounting numbers of failures in art subjects as presenting a growing challenge for national, regional, and local educational agencies. Hence examining the policies and procedures regarding the teaching and learning of students of art subjects has become imperative.

According to Maduhu (2012) the poor results in arts subjects has made many educators in Tanzania to argue that the integration of information and communication technology in the teaching and learning of arts subjects would make MOEVT improve the poor performance in arts subjects and hence meet the much anticipated EFA. Their assertion is based on UNESCO policy document of 2002 which recognizes that ICT adds value to the processes of learning and management of learning institutions. UNESCO has reported that the existence of ICT hardware and software in secondary schools allows students to transact and enjoy a new form of literacy than those that may not be able to afford their use in and outside schools.

Empirical studies, such as Banerjee (2005), informed that ICT integration into teaching and learning process has a positive impact on the academic achievements of students. Kim (2008) informs further that ICT helps students and teachers to facilitate and handle complex problems. Kearsley (2004) revealed that ICT stimulates a new atmosphere where teachers and students could interact and collaborate to learn new skills of understanding about complex subject matter and promoting student-centre learning. Additionally, Selim,(2007) reported that the provision of ICT to secondary school students and its use for educational purposes may increase the cognitive abilities of students, allowing them to learn faster and could thus affect students' learning outcomes. However, other studies like Aypay (2010), and Kubiatko and Vlckova (2010) as cited in Maduhu (2012) contend that ICT integration into teaching and learning process has no significant impact on the academic achievement of students.

According to Maduhu (2012), the use of ICT in teaching and learning as well as in the administration and management represents a powerful tool with which to achieve educational and national development objectives. MOEVT sees the use of ICT in education as the bedrock of a knowledge society and enables the country to contribute both to achieving Education for All (EFA) goals and reducing the digital divide. Thus in its ICT policy of 2005, MOEVT asserts that ICT instructional use is vital to the progress and development

of students' thinking capacity. As such, secondary school teachers and students have been encouraged to integrate their learning with ICT so as to meet the required competencies of the ever-changing global environment.

On these grounds, several policies and reforms have been introduced in education in order to improve the quality of education offered through IT. These reforms include Tanzania Computer Literacy for Secondary Schools (TCLSS), Tanzania Commission for Science and Technology (COSTECH), Information and Communication Technology for Education (ICT4E), Tanzania Development Vision (TDV) 2025 and MDGs. The COSTECH has been derived from the ICT Policy of 2003 and it is what led to the establishment of TCLSS. The strategic priorities of TCLSS concentrate on three main areas: Improvement in teaching and learning methodology, quality improvement in education, and capacity building. Concerning quality improvement in education, MOVET (2005b) provides nine main objectives of TCLSS of which the most outstanding ones are:

    i.   Integrate the use of ICT to achieve educational policy objectives;

    ii.   Ensure the organized provision of ICT training to students, teachers and educational administrators;

    iii.   Facilitate the development and use of ICT as a pedagogical tool for teaching and learning, and for the professional development of teachers and administrators.

Thus, advocating the quality provision of education and positive achievements of students through ICT integration into teaching and learning process in Tanzania secondary schools, and Moshi Municipal in particular, has been the strategy towards the enhancement of quality of the education provided, students academic achievement and, tracking the national goals and objectives of education. Considering these rationales and Based on the growing art students' population and the evidence that many students fail in arts subjects in national examinations, it is important to examine the effect of integrating information and communication technology in the teaching and learning of arts subjects.

As it is hypothesized herein, the integration of information and communication technology into the teaching and learning process depends on the attitudes of teachers and students. Rigorous research on the attitudes of teachers and students towards integration of ICT into teaching and learning process of arts subjects is necessary. Similarly, a study on the other factors influencing integration process and the ICT impact on students' achievement is equally necessary. Therefore, this study aims at tracking if at all there are effects of information and communication technology on student academic achievement in Moshi municipality.

Literature Review

The empirical literatures show mixed results. On the one hand, some research like Shamimul and Fouji (2010), demonstrate that the impact of ICT on the academic performance of students is negligible. This research also reveals that majority of the students are in the dark about the potential role of ICT in their academic life. Berhane (2012) informs that ICT integration is far behind in East African Schools as a consequence of ICT deficiency, absence of pre-service and in-service teacher training and poor teachers' welfare and morale.

On the other hand, some studies show that there is a real impact of ICT on students' achievement, for example, Delen and Bulut (2011) revealed that ICT play a positive role in the academic achievement of students; that students' familiarity with ICT and their exposure to technology helped to explain math and science achievement gaps between individuals and schools. Oboegbulem and Ugwu (2012) informed that, among other factors, the use of ICT in school administration is a necessity and worthwhile venture especially in this era of globalization. Nevertheless, the extent of their application in secondary schools is very slow as school administrators are incompetent in handling ICT facilities for effective administration of schools.

From the above we can conclude that there are mixed results regarding the relationship between the use of ICT and the performance of the students. This is the literature gap, which this study strives to address. To start with, the relationship between the use of ICT and student performance in secondary school education is not well established in Tanzania- and in Moshi municipality specifically. To the best knowledge of the researcher, no study has been conducted in Moshi Municipality regarding this topic. This study, therefore, attempted to fill this gap of knowledge by examining the effect of ICT on Students Achievements in Arts subjects in selected secondary Schools in Moshi Municipality.

Theoretical Framework

This study adopted the diffusion of innovation theory founded by Rogers (1931). Under this, Perceived Attribute Theory was used. Perceived Attributes Theory is based on the notion that individuals will adopt an innovation if they perceive that the innovation has the following attributes: a) relative advantage over an existing innovation b) the innovation is compatible with existing values and practices, c) the innovation is not complex d) the innovation can be tested for a limited time without adoption e) the innovation must offer observable results.

To apply Perceived Attributes Theory to this study, it was assumed that a clear and well articulated secondary school ICT policy, availability of ICT facilities (computers, internet

facilities e.tc), ICT competence skills by teachers and students, positive attitudes of teachers and students towards ICT integration could enable the integration of ICT into teaching and learning of art subjects. It was assumed that the effective integration of ICT into teaching and learning process could contribute to the positive academic achievements of students in art subjects in the NECTA examination.

Statement of the Problem

ICT provides educational opportunities and environmental readiness for classroom instruction. It promotes a quality education and effective teaching- learning process. Several research studies (Banks and Creswell, 1982; Barrow, 2009; Maduhu, 2012; Berhane, 2012 and Miima, 2013) established a positive relationship between availability and the use of ICT on the one hand and students' examination achievement on the other hand.

Though empirical evidence in the literature suggests that ICT instruction in sciences can raise students' academic achievement, it remains to be seen if ICT integration into teaching and learning in art subjects in secondary schools has an effect on the academic achievement of students in NECTA examination.

Thus, additional research is needed to understand the effect of ICT integration on student learning outcomes in Arts subjects. Therefore this study examined the Effect of ICT on Students Achievements in Art subjects in selected secondary Schools in Moshi Municipality.

Research Questions

This study was guided by the following research questions:

1. To what extent has ICT been integrated into the teaching and learning of arts subjects in Moshi municipality?

2. What are the attitudes of teachers and students on the integration of ICT in teaching and learning of arts subjects?

3. What are the factors influencing the integration of ICT into the teaching and learning of Arts subjects?

4. What is a relationship between effective use of ICT in arts subjects and students achievement in those subjects?

Research Hypotheses

The following research hypotheses were tested

1. There is a relationship between integration of ICT in teaching and learning of arts subjects and students academic achievement

2. There is a relationship between a teacher's gender and attitudes towards integration of ICT in teaching and learning of arts subjects

3. There is a relationship between a teacher's age group and attitudes towards integration of ICT in teaching and learning of arts subjects

4. There is a relationship between a student's gender and attitudes towards integration of ICT in teaching and learning of arts subjects

5. There is a relationship between a student's age group and attitudes towards integration of ICT in teaching and learning of arts subjects

Significance of the Study

This study helps to evaluate ICT effectiveness on students' learning outcomes and implications for education and raises awareness for students to take advantages of many benefits of ICT, and hence take control of their learning. Additionally, it makes a significant contribution to how MOEVT can improve the quality of students' experience. Furthermore the study brings to a better understanding the positive attributes of ICT integration into teaching and learning process and thus becomes invaluable to the curriculum developers in the Ministry of Education.

Scope and Delimitation of the Study

This research confined itself to Moshi Municipality, and was limited to the effects of ICT to students' achievements in Arts subjects. Additionally the research was limited to student academic achievements in arts subjects in form four NECTA examinations 2013. Furthermore, the study was limited to ICT variables such as: Radio, T.V, internet, computers, and projectors.

Research Design and Methodology

i. Research Design

Ex-post facto research design was employed. Sampled students come from two groups of secondary schools; one group comprised of schools which have integrated ICT into

the teaching and learning of arts subjects and the other group comprised of schools which have not / do not integrate ICT in the teaching and learning of arts subjects.

ii. Population

The target population of this research included all secondary schools in Moshi Municipality, all students of arts subjects in secondary schools in Moshi Municipality, and all teachers of arts subjects in secondary schools in Moshi Municipality.

The sample consisted of hundred and twenty (120) respondents from ten (10) secondary schools with each school providing ten (10) students, and two (2) arts subjects. Ten (10) secondary schools were sampled using the stratified random sampling technique. Twenty (20) teachers of Arts subjects were selected from sampled schools using convenience sampling technique. Hundred (100) students were selected using systematic random sampling technique.

iii. Research Instruments

The study used three main research instruments: questionnaires, structured observation schedule, and document analysis schedule. Questionnaires were administered to both student and teacher respondents. Document analysis schedule was used to review NECTA results of form four for the year 2013 examination records at school level. Observation schedule was used to gather "live" data on how the teachers integrated ICT into the teaching and learning process.

iv. Determining validity and reliability evidence of instruments results

Validity evidence of research instruments was determined by a panel of experts comprising of 3 teachers of art subjects and 2 specialists in research from MWUCE. Experts were asked to study and understand the construct and content domain that an item or a section of the questionnaire was supposed to measure.

A reliability test was carried out to determine the internal consistency of items in the questionnaire by using Cronbach's Alpha reliability test. Cronbach's alpha coefficient was 0.799.

v. Data Collection Procedures

A letter of introduction was obtained from the Director of post graduate studies at MWUCE.

The letter was given to the Moshi Municipal Director who gave permission to visit the sampled schools. A copy of permission granted was presented to sampled secondary schools. Questionnaires were delivered personally to the students who were gathered in one room, and to teachers in the staff room. Thirty minutes were given to respondents to complete the questionnaires. The questionnaires were collected in person upon being filled in. Classroom observation was conducted for 40 minutes so as to get familiar with actual arts teaching experiences. Data was then summarized for analysis

vi. Data Analysis Procedures

Data were analyzed using the frequencies, percentages, means and standard deviations. The five hypotheses were tested using t-test for independent samples and ANOVA at 0.05 confidence level.

vii. Findings

1. **Extent** to which ICT has been integrated into the teaching and learning of art subjects in Moshi Municipality

   Tables 1 and Table 2 show the extent to which ICT related skills are carried in the teaching and learning activities by teachers and students.

Table 1: The extent to which ICT related activities are carried out by teachers in lessons

n=20

ICT SKILLS	VERY OFTEN		OFTEN		SOMETIMES		NOT AT ALL	
	F	%	F	%	F	%	F	%
Word processor (e.g. Microsoft word)	6	30.0	7	35.0	3	15.0	4	20.0
Presenting starter activities	1	5.0	3	15.0	8	40.0	8	40.0
Visual display	7	35.0	4	20.0	5	25.0	4	20.0
Use of Microsoft PowerPoint	9	45.0	4	20.0	5	25.0	2	10.0
Use of Search engines (e.g. Internet/WWW)	4	20.0	8	40.0	3	15.0	5	25.0
Demonstration(e.g. DVDs or CD-ROMS)	-	-	6	30.0	8	40.0	6	30.0
Student's use of computer	2	10.0	7	35.0	7	35.0	4	20.0
Showing film chips	3	15.0	5	25.0	6	30.0	6	30.0

As shown in Table 1 majority of teacher respondents were more in use of word processor (very often =30%, often =35%), use of Microsoft PowerPoint (very often=45, often =20), visual display (very often =35%, often = 20%) and use of search engine (very often = 20, often = 40%). On the other hand, the least used ICT related facilities by teachers were presenting starter activities (very often = 5%, often = 15), and demonstration (very often =0 %, often = 30 %). The reasons for low use of these ICT related tools could be attributed to lack of access to equipment in classroom and/or in secondary schools and lack of teachers' training skills in the use of the equipment.

Table 2: The extent to which ICT related activities are carried out by students in learning process

n= 100

ICT SKILLS	VERY OFTEN		OFTEN		SOMETIMES		NOT AT ALL	
	F	%	F	%	F	%	F	%
Word processor (e.g. Microsoft word)	30	29.7	28	27.7	33	32.7	9	8.9
Presenting starter activities	4	4.0	14	13.9	18	17.8	64	63.4
Visual display	26	25.7	36	35.6	26	25.7	12	11.9
Use of Microsoft PowerPoint	3	3.0	39	38.6	39	38.6	40	39.6
Use of Search engines (e.g. Internet/WWW)	20	19.8	49	48.5	11	10.9	20	19.8
Demonstration (e.g. DVDs or CD-ROMS)	3	3.0	9	8.9	49	48.5	39	38.6
Student's use of computer			18	17.8	34	33.7	48	47.5
Showing film chips	11	10.9	11	10.9	42	41.6	36	35.6

The results in Table 2 indicate majority of the student' respondents indicated that they used word processor (very often = 29.7%, often = 27.7%), use of Microsoft PowerPoint (very often = 3%, often = 38%), visual display (very often = 25.7%, often =35.6 %) and use of search engine (very often = 19.8%, often = 48.5%). The least used ICT related facilities by students were students' use of computer (very often = 0%, often = 17%), Demonstration (very often = 3%, often = 8.9%), and presenting starter activities (very often = 4, often = 13.9%). From Tables 1 and 2, it can be observed that least used ICT tools by students and teachers, and the often used ICT tools are the same, indicating that both students and teachers have almost the same chance of exposure to ICT tools in their respective schools.

Bingimlas, (2009) also found out that Word processor, use of search engine, are often used by both teachers and students in the teaching and learning process and hence create a good environment for ICT integration in teaching and learning process. This finding is also in agreement with Simonson, (2004) study which found that students in secondary schools often use the internet to cheek for learning materials and do their class assignments, while teachers often use Microsoft PowerPoint when explaining complex subject matters in science and art subject like biology and geography.

Similarly, Lau and Sim (2008) found out that the ICTs most commonly used by teachers were word-processing, PowerPoint and the World Wide Web. Video conferencing, synchronous communications, use of databases or text reconstruction software and competent in statistical tools had seldom been used. The study reports further that lack of technical support was perceived by teachers as the key barrier to the further uptake of ICT in schools. Teachers who had been using ICT extensively in their daily routines still indicated high training and support needs.

One possible interpretation of the results above is that word processor, use of Microsoft PowerPoint, visual display and use of search engine are the most easy to learn ICT applications and are considered to be important ICT integration variables. This implies that teachers and students should acquire the basic knowledge of how to use word-processing, PowerPoint and use of search engine for them to integrate ICT into the teaching and learning process.

The classroom observation in classes of art subjects clearly indicated that a good number of teachers in secondary schools in Moshi municipality are not competent enough to integrate ICT into classrooms. Similarly, the responses in questionnaires indicated that several teachers of art subjects perceive that the lack of ICT related to knowledge is a major challenge to the realization of ICT integration into teaching and learning process.

This finding is in line with a study by the National Center for Educational Statistics (2000) as cited in Aypay (2010) which reported that teachers with fewer years of teaching experiences use computers than teachers of longer teaching experience. The report quantified it this way: teachers with three or less teaching experience use computers 48% of their time, four to nine years of experience use 45% of their time, ten to nineteen years of teaching experience use 47% of their time and teachers with more than 20 years of teaching experience use computers only 33% of their time. This study further reported that old teachers are technophobic towards the use of computers because they lack necessary competence.

This implies that teachers require ICT training both at pre-service and in-service levels. Teachers can be trained on how to use ICT and ICT is important as a means of training process. The integration or the use of ICT in teaching and learning process is dependent on teachers and students' readiness in order to be successful. Teachers' and students' readiness to integrate ICT is the most important factor that has a direct impact on ICT integration.

2. Attitudes of teachers and students towards integration of ICT in teaching and learning of art subjects

2.1 Attitudes of teachers towards integration of ICT in teaching and learning of art subjects

Respondents were asked to respond to statements using a five point of 12 items Likert scale of strongly agree (SA)-5, agree (A) -4, undecided (U) -3, disagree (D) - 2, strongly disagree (SD) -1, and no response (NoRS). For negative statements the order was reversed. The maximum score was 60 marks; the scores were categorized as: 12 - 28 = negative attitude towards integration of ICT in teaching and learning of art subjects; 28 - 44 = moderate attitude towards integration of ICT in teaching and learning of art subjects; 44 - 60 = positive attitude towards integration of ICT in teaching and learning of art subjects. Table 3 shows frequency distribution of teachers' responses to items in the attitude scale.

Table 3: Frequency Distribution of teachers responses' to items in the attitude scale

RESPONSES STATEMENTS	SA f	SA %	A f	A %	U f	U %	D f	D %	SD f	SD %	NoRS f	NoRS %
The acquisition of ICT facilities in secondary schools is just a waste of resources			4	25	4	25			8	50		
The school administration has created an enabling environment for us teachers to access ICT facilities			8	50	1	6.3			7	43.8		
It is not good for teachers of arts subject to integrate ICT in the teaching process	3	18.8	3	18.8	3	18.8			7	43.8		
There is a need for Ministry of Education and Vocation Training (MoEVT) to introduce the integration of ICT in arts subjects as a compulsory	6	37.5	8	50	2	12.5						
I find it easy when I use ICT facilities to aid my teaching process	6	37.5	4	25	4	25	2	12.5				
I will encourage teachers of arts subjects to consider integrating ICT into their teaching of arts subjects	4	25	4	25	6	37.5	2	12.5				
ICT integration into the teaching and Learning of arts subjects will boost academic achievements in arts subjects in NECTA examinations	3	18.8	7	43.8	3	18			3	18.8		
One of the ways of improving academic achievements in arts subjects is to consider ICT as an important variable	5	31.3	7	43.8	2	12.5	1	6.3	1	6.3		

Findings in Table 3 indicates that a significant number of teachers (50%), think the acquisition of ICT facilities in secondary schools is not a waste of time. While 37.5% (strongly agree) and 25% (agree) indicated that they found it easy when they use ICT facilities to aid their teaching process. Tables 4 and 5 shows mean teachers attitude towards integration of ICT in teaching and learning of art subjects' scores by gender and age

Table 4: mean teachers attitude towards integration of ICT in teaching and learning of art subjects scores by gender

Descriptive statistics			
Gender of teachers	n	Mean	Std. Deviation
Male	11	50.97	3.1
Female	9	54.62	3.7

Table 5: mean teachers attitude towards integration of ICT in teaching and learning of art subjects scores by age

Age of teachers	Mean	n	Std. Deviation
20-25	61.50	4	5.788
26-31	51.50	12	7.052
32-37	57.25	4	8.512

Data in Table 4 indicates that, mean attitudes score of males is 50.97 (SD 3.1), while mean attitudes scores of females is 54.62 (SD 3.7). This means that the attitudes of males and females are positive although they differ slightly. Similarly Table 5 shows that the mean attitudes scores of teachers of ages 20-25 is 61.50 (SD 5.8) while for those between the age group of 26-31 is 51.50 (SD 7.1), and 57.3 (SD 8.5) for teachers between age group of 32-37 years.

Zakaria (2001) reports that, both male and female teachers have positive attitudes toward IT use in teaching; and also positive attitude towards the availability of IT facilities. However, he argues that there was a difference in terms of IT attitudes with male reporting higher attitudes scores than female. This may suggest that the successful initiation and implementation of ICT in education depends strongly on harmonizing the perceived differences of female and male teachers towards educational technology. As agued by Watt (1980), beliefs and attitudes play a fundamental role in the way that teachers deal with ICT integration in the teaching and learning process.

2.2. Attitudes of students towards integration of ICT in teaching and learning of art subjects

Table 6: Frequency Distribution of students' responses to items in the attitude scale

REPONSES / STATEMENTS	SA f	SA %	A f	A %	U f	U %	D f	D %	SD f	SD %	NoRS f	NoRS %
I like integrating my learning of arts subject with ICT	36	36	27	27	20	20	6	6	4	4	7	7
I enjoy using ICT facilities for my study	31	31	28	28	12	12	9	9	5	5	15	15
I don't like advising my fellows to do their assignments using ICT facilities	12	12	19	19	24	24	8	8	31	31	6	6
Integrating ICT in my study of arts subjects is just a waste of time	8	8			13	13	20	20	44	44	15	15
The acquisition of ICT facilities in secondary schools is just a waste of resources	4	4	1	1	19	19	24	24	37	37	15	15
The school administration has created an enabling environment for us students to access ICT facilities at our opportune time	1	1	42	42	10	10	4	4	32	32	11	11
It is not good for teachers of arts subject to integrate ICT in the teaching process	17	17	15	15			12	12	45	45	11	11
There is a need for Ministry of Education and Vocation Training (MoVET) to introduce the integration of ICT in arts subjects as a compulsory	24	24	55	55	14	14			3	3	4	4

Table 6 indicates that a 27% of students strongly agreed and 42% agreed to a statement that "One of the ways of improving academic achievements in arts subjects is to consider ICT as an important variable". However 52% of students were undecided as to whether ICT integration into the teaching and Learning of arts subjects will boost academic achievements in arts subjects in NECTA examinations. Tables 7 and 8 indicates mean students attitude towards integration of ICT in teaching and learning of art subjects' scores by gender and age.

Table 7: Mean students attitude towards integration of ICT in teaching and learning of art subjects scores by gender

Descriptive statistics			
Gender of teachers	n	Mean	Std. Deviation
Male	50	54.70	3.808
Female	50	56.22	1.877

Table 8: Mean students attitude towards integration of ICT in teaching and learning of art subjects scores by age

Age of teachers	Mean	n	Std. Deviation
13-16	53.44	39	3.22
17-21	56.83	58	2.20
22-25	57.46	3	1.16

Results in Table 7 show that, the mean attitudes score of male students is 54.70 (SD 3.808), while mean attitudes scores of female students is 56.22 (SD 1.877). This indicates that female students have slightly higher positive mean attitudes towards integration of ICT in teaching and learning of art subjects scores as compared to male.

Additionally data in Table 8 indicates that the mean score of students of age 13-16 is 53.44 (SD 3.22), while for those 17-21 and 22-25 is 56.83 (SD 2.20) and 1.16 (SD 1.16) respectively. The possible interpretation in difference in mean scores of different student age groups could be that students of age group 13-16 use less ICT related facilities as compared to students of age group 17-21 and 22-25 who at this age are expected to be in form 3-6 where the learning process becomes complex and hence the need for ICT related facilities like Internet (browser), and Microsoft PowerPoint presentation.

Rozell & Gardner (1999) as cited in Barrow (2009) have reported that high school students have positive attitudes towards integration of technology in the learning process. Female students were reported to have higher positive attitudes than their male counterpart. Wong & Li (2008) reported that any successful integration of technology in educational practice requires the development of not only positive attitudes of teachers toward the new technology but also the positive attitudes of students towards the integration of the technology into their learning process. Roger's (2003) Diffusion of innovation theory asserts that people's attitudes toward a new technology are a key element in its diffusion.

By implication, the effective implementation of ICT in secondary schools depends upon users' (teachers and students) having a positive attitude towards it. Secondary schools administrators can go only so far to encourage ICT use; actual implementation depends largely on teachers' and students' background factors. This further implies that organizational and personal factors should be considered when examining ICT adoption and integration. Factors such as educational level, age, gender, and attitude towards ICT can influence the adoption of a technology.

3. Factors influencing the integration of ICT into the teaching and learning of Art subjects

Respondents were asked to list the factors that promote the integration of ICT into the teaching and learning of arts subjects. Table 9 shows the factors promoting the integration of ICT into the teaching and learning of arts subjects.

Table 9: factors promoting the integration of ICT into the teaching and learning of arts subjects
n=120

	f	%
Personal Characteristics	11	9.2
Support from school administration	15	12.5
Technical support	13	10.8
Computer self-efficacy	7	5.8
Teaching Experience	6	5.0
Access to ICT infrastructure and resources	18	15.0
Teachers' and students attitudes	21	17.5
ICT Competence	29	24.2
Total	**120**	**100.0**

Data in Table 9 show that, ICT competence (24.2%), teachers and students attitudes (17.5%), access to ICT infrastructure (15.0%) and Support from school administration (12.5) are the main factors promoting the integration of ICT into the teaching and learning of arts subjects. Similarly, technical support (10.8%), Personal Characteristics (9.2 %) teaching experience (5.0%), and Computer self-efficacy (5.8 %) were cited as less significant factors which promote the integration of ICT into teaching and learning of arts subjects.

The results are consistent with the findings of Charles (2012) who reported that attitudes towards integration, ICT competence, and access to ICT facilities positively influence integration of ICT into the teaching and learning process. Similarly, Baek et al (2008) also found out that, factors such as technical support to both teachers and students, attitudes towards ICT integration, availability of ICT facilities and access to ICT facilities as crucial to promoting the integration of ICT into the teaching and learning process.

Becta (2004) agreed that if there is a lack of technical support available in a school, then it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns and hence negatively affecting ICT integration. If teachers' attitudes are positive toward the use of educational technology then they can easily provide useful insight on the adoption and integration of ICT into teaching and learning processes.

According to Lau, and Sim, (2008) computer self-efficacy influences the use of ICT in teaching and learning. Similarly, Yuen & Ma, (2008) as cited in Berhane (2012) revealed that teachers' implementation of ICT was depended on simplicity of computer use and perceived teacher self-efficacy. Also Becta (2004) stated that many teachers who are not well skilled in using ICT feel anxious about using it in front of students who perhaps know more than they do. Lack of computer self-efficacy may influence students and teachers use of computers in teaching and learning.

This implies that ICT competence, teachers and students attitudes, access to ICT infrastructure, support from school administration, technical support, personal characteristics, teaching experience, and computer self-efficacy are very important factors in ICT integration in teaching and learning process. Secondary school administration and curriculum developers should not only provide a policy on ICT integration but should also take into consideration the above mentioned factors .this will positively lead to the successful integration of ICT into teaching and learning.

4. The relationship between effective use of ICT in art subjects and students achievement in those subjects

The study sought to find out if there is a relationship between effective use of ICT in art subjects and students academic achievement in those subjects. The academic achievements in art subjects for form four NECTA result of art subjects of 2013 for students in secondary schools were ICT is integrated and not integrate into the teaching and learning process were analyzed using means and standard deviation. Table 4.11 shows the students' mean scores from NECTA 2013 form four art subjects' exam results.

Table 4.14: Mean students' scores from NECTA 2014 form four arts subject exam result

School category	Mean	n	Std. Deviation
ICT integrated	4.94	50	1.361
ICT not integrated	3.70	50	0.931
Total	4.32	100	1.317

The mean score was 3.70 and std. deviation 0.93 of students from schools where ICT is not integrated while the mean score was 4.94 and std. deviation 1.361 for students from secondary schools where ICT is integrated. This means that students in secondary school where ICT is integrated had a higher mean score for the passing success in art subjects. This suggests that ICT might be one of the main influencing factors in student academic achievement in art subjects in NECTA examinations.

The findings are in agreement with Edefiogho, (2005) who found out that ICT usage had a positive impact on students' math and science performance in PISA. Yusuf and Afolabi, (2010) have also reported that the amount of time spent using ICT facilities had a positive and strong relation with science knowledge. This implies that ICT is important for fast and easy learning to process, store and retrieve information, and as a result students develop cognitive skills and behaviors to solve problems.

Findings from Tests of Hypotheses

Assumption for both t-independent and for ANOVA was considered and hypotheses testing were based on the following decision rules:

Given a significance level of 0.05:

   ♦   If the observed P. value is greater than 0.05, do not reject the Null hypothesis.

   ♦   If the observed P. value is less than 0.05, reject the Null hypothesis.

t-test for independent samples was employed in testing null hypothesis 1. There is no significant difference between the mean arts subjects achievement scores of students from secondary schools where ICT has been integrated into teaching and learning of arts subjects and the mean arts subject achievement scores of students from secondary schools where ICT is not integrated into teaching and learning of Arts Subjects.

Table 4.12: t-test Summary Table

	Descriptive statistics				Independent t-test		
	School category	n	Mean	Std. Deviation	t	Sig	df
students' scores from NECTA 2014 Form Four Exam Results	ICT integrated	50	4.94	1.361	-5.316	.001	98
	ICT not integrated	50	3.70	.931			

Since the P value (*P* < 0.05) was less than 0.05 (that is 0.01), the Null hypothesis is rejected. Therefore, there is a significant difference between the mean arts subjects' achievement scores of students from secondary schools where ICT has been integrated into teaching and learning process of art subjects and the mean arts subjects' achievement scores of students from secondary schools where ICT is not integrated into teaching and learning process of arts subjects. This means that there is a relationship between integration of ICT in teaching and learning of arts subjects and students academic achievement.

t-test for independent samples was employed in testing null hypothesis 2. There is no significant difference between the mean attitude towards integration of ICT in teaching and learning of arts subjects scores of male and female teachers.

Table 13 shows t-test Summary Table of the gender and attitudes towards integration of ICT into teaching and learning of arts subjects.

Table 13: t-test Summary Table

Gender of Teachers	Descriptive statistics			Independent t-test		
	n	Mean	Std. Deviation	t	Sig	df
Male	11	50.97	3.1			
Female	9	54.62	3.7	**-1.030**	**.020**	**8.220**

Since P was = .020 which is less than 0.05 significance level, the null hypothesis is rejected. Therefore there is a significant difference between the mean attitude towards integration of ICT in teaching and learning of arts subjects' scores of male and female teachers. This means that there is a relationship between a teacher's gender and attitudes towards integration of ICT in teaching and learning of arts subjects.

Table 13 shows the summary Table of one way analysis of variance of teachers' age and attitude towards integration of ICT into teaching and learning of arts subjects.

Table 13: ANOVA Summary Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	157.887	2	78.943	8.264	.003
Within Groups	152.850	16	9.553		
Total	**310.7**	**37**	**18**		

Since the P value ($P < 0.05$) was less than 0.05 (that is 0.03), the Null hypothesis is rejected. Therefore, there is a significant difference between the mean attitudes towards integration of ICT in teaching and learning of arts subjects' scores of teachers of different age groups. This means that there is a relationship between a teacher's age group and attitudes towards integration of ICT in teaching and learning of arts subjects.

Table 14 shows t-test Summary Table of the relationship between gender of students and attitudes towards integration of ICT into teaching and learning of arts subjects

Table 14: t-test Summary Table

	Descriptive statistics			Independent t-test		
Gender of Teachers	n	Mean	Std. Deviation	T	Sig	df
Male	44	45.05	4.20			
Female	56	45.82	4.48	-.875	.411	93.197

Since the P value ($P < 0.05$) is larger than 0.05 significance level, we accept the Null hypothesis. Therefore there is no significant difference between the mean attitude towards integration of ICT in teaching and learning of arts subjects scores of male and female students. This means that there is no relationship between a student's gender and attitudes towards integration of ICT in teaching and learning of arts subjects.

Table 4.19 shows the ANOVA summary Table of student' age and attitude towards integration of ICT into teaching and learning of arts subjects

Table 15 :ANOVA Summary Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	643.363	3	214.454	16.681	.000
Within Groups	1221.365	95	12.856		
Total	**1864.727**	**98**			

Since the P value ($P < 0.05$) was less than 0.05 (that is 000), we reject the Null hypothesis. Therefore, there is a significant difference between the mean attitudes towards integration of ICT in teaching and learning of arts subjects' scores of students of different age groups. This means that there is a relationship between a student's age group and attitudes towards integration of ICT in teaching and learning of arts subjects.

Conclusions

On the basis of the findings of this study, the following conclusions were made:

1. The integration of ICT in education improves teaching and learning in secondary schools.

2. The integration of ICT into teaching and learning process largely depend on the attitude of teachers and student concerning ICT integration; and availability of ICT facilities.

3. There is a positive relationship between effective use of ICT in teaching and learning of art subjects and students academic achievement in art subjects

4. Lack of ICT facilities in schools, lack of computer experience, student's and teachers' knowledge and skills about ICT, and limited access to ICT facilities are some of the factors preventing the integration of ICT into teaching and learning process

Recommendations

Based on the conclusion of this study, the following recommendations are made:

1. Curriculum developers should develop broad ICT integrated curriculum at all levels of education.

2. MOVET should continue providing ICT facilities to secondary schools and advise the curriculum developers to develop broad ICT integrated curriculum at all levels of education

3. Heads of secondary schools should organize workshops/seminars at intervals for teachers on ICT related issues and encourage both teachers and students to integrate their teaching and learning activities with ICT. They collaborate with various stakeholders in ensuring that ICT facilities are available in their respective schools and thereafter encourage students to make use of ICT facilities in their respective secondary school.

4. Secondary school teachers should integrate ICT into their teaching activities and encourage students to constantly do their assignments using ICT components available in the school

5. Secondary school students should do assignments using ICT components such as internet, PowerPoint presentation etc

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THE STATE, IGAD AND THE NGOs: A MULTI-SECTORAL APPROACH TO DEVELOPMENT IN KENYA'S DRYLANDS, IS IT WORKING IN TURKANA COUNTY?

Philip K. Chemelil

Abstract

At independence and after, Kenyan people visualised radical socio-economic changes for the common good. But after fifty years into it, majority of them living in dry lands continue to dream of attaining better living standards. This article sets on a journey to explore causes of frustration towards attainment of desired socio-economic well being of people living in Arid and Semi Arid Lands with specific reference to Turkana County in Kenya. It demonstrates some of the shortcomings of state approach to socio-economic development in the County since independence that eventually allowed intervention through a multi-sectoral approach. The Article goes further to discuss the role played by the State, IGAD and NGOs in the socio-economic development of the people of Turkana County. The neo-liberal approach as expounded by Kegley and Wittkopf (1997:197-270) and Keohane (1995:27-180) is adopted as its tool of analysis. The theory advocate the State's accommodation of an array of NGOs, transnational and trans-governmental relation and coalition building in an effort to uplift the socio-economic status of people especially in Africa. The main aim of the Article is to indicate whether the synergized approach is bearing fruit through the improvement of socio-economic status of the people of Turkana County.

Key words: Poverty, Development, Socio-economic, Integration, Multisectoral, Dry lands

Introduction

Turkana County is situated in north-western Kenya bordering Uganda to the west, and Sudan and Ethiopia to the north. It lies within a region that is home to the largest remaining concentration of traditional livestock keepers in the world. The countries of the sub-region, Sudan, Somalia, Ethiopia, Kenya and Uganda rank among the top ten in the world in terms of pastoralist population and size. The degradation of the pastoralist habitat was exponentially hastened by the incessant drought culminating in the raising spectra of desertification in many areas.

Devastated by famine and unable to rebuild their livestock, the pastoral communities were driven into what can be called sedenterisation through impoverishment (Samatar, 1989:42). This blended well with official policy in the Eastern Africa states whose governments regarded fixed abode as the only solution to the many challenges posed by pastoralism.This policy inherited the prejudices of colonialism which were against the footloose herders. Regardless of the nature of the regime, the policies of the Horn of Africa States towards their pastoralist subjects have had similar results.

The Intergovernmental Authority on Development (IGAD) was formed to have a common front among states to address and solve the many problems in the region in partnership with Non Governmental Organizations (NGOs) who were called in to participate in the transformation of communities in Eastern Africa especially those in marginalized areas. The communities were alienated by their respective states from decision-making process affecting their socio-economic life (Hass 1971:18). As a result, the state was no longer trusted as an agent of social change and development. As the IGAD states realized that they could not solve the challenges faced by these communities coupled by the meager resources, they had no option but to allow NGOs and other development partners to pool resources for the development arid areas of Eastern Africa (Gimode, 2004:299-300).

Like other Arid and Semi Arid Lands regions in Kenya, Turkana County has lagged behind in several areas of socio-economic development which include poor road network, low education standards, lack of clean water, insecurity, cattle rustling and banditry, ethnic warfare across border grazing disputes, poverty, HIV/AIDS, gender inequity, drought and famine. This article anchors itself on pertinent questions that include; why was the State /government based approach to development unable to make a meaningful socio-economic impact among the people of Turkana County? How successful has the State-IGAD-NGOs interplay resulted in socio- economic transformation among the Turkana people? And how suitable are the State and partners strategies in overcoming regional problems and socio-economic development? From the above discussion therefore the Article interrogates the State, IGAD and NGO activities in an attempt to facilitate the socio-economic transformation of the people in the Arid and Semi Arid Lands (ASAL) regions of Kenya with specific reference to Turkana County during the post colonial period.

People versus the State: The Epitome of Underperformance in Turkana County

Development planning and implementation in Kenya can be traced back to immediately after independence when President Kenyatta introduced the *Harambee* slogan in 1964. People were to pool together resources in the spirit of nationalism towards socio-economic development of the country. The period between 1964 and 1966 was characterized by

planning initiatives at the grass root levels by the people. The people planned and put up all kinds of welfare projects.

They were involved both in planning and implementation. Planning by the people failed because many of the planned projects could not be implemented (Republic of Kenya, 1970:324-327). The failures of self-help project planning and implementation convinced Kenya's leadership that the local people were not good planners and implementers. One other characteristic of local planning and implementation was that projects could not be completed on schedule. At the same time those which were successfully put in place could not in most cases be maintained. These experiences solidified the government's attitude towards the idea of development initiative at the local level. Ironically, even with the State's take over of the above tasks, the idea of development planning and implementation involving the local people is becoming popular again in the 21st century. Then the immediate question is why?

The people initiative which characterized the 1964-66 period was further criticized by the Dev Plan of 1966-70 and ignored by successive development plans. In 1965, the government argued that self-help projects must be fitted into the plan and self-help efforts must be guided into useful channels. Self-help is an integral part of planned development and must be subject to the same discipline as other parts of the development (Republic of Kenya, 1965:19-81).

The main principles and strategies for Kenya's development after independence were laid down in the Sessional paper No. 10 of 1965 entitled "African socialism and its Application to Planning in Kenya". The Kenyan government outlined the political and economic blueprint which formed a consistent economic and political philosophy which has guided subsequent policy and has been incorporated into successive development plans. The paper rejected both Western capitalism and Eastern communism. Tom Mboya, who was then the Minister of Economic Planning and Development, contended that African socialism would guarantee every citizen whether rich or poor, full and equal rights. The main features of African socialism according to the government were, political democracy, mutual, social and political responsibility, various forms of property ownership so that nobody would have too much power, the control of wealth so that it is used in the interest of society, freedom from disease, poverty and exploitation and progressive taxation to narrow the gap between the rich and the poor.

The emphasis was again made in the 1966-1970 Plan which stated that in order to tackle the maximum contribution to the nation's effort for more rapid economic and social development, the growing self-help activities must be planned and directed. They must be planned and co-ordinated so that they are consistent with the National Development Plan. The above stipulated recommendations show the government was convinced that the local responsibility of initiating and sustaining development solemnly belonged to it.

The immediate repercussion was that the government formally effected planning by turning the community Development Committees into sub-committees of the District Commissioner and Provincial Commissioner respectively. The self-help committees were put under the guidance of the District and Provincial Committee. The District Development Committee was mandated to approve or reject any proposal for self-help projects guided by whether it contributes to national agenda and policies to development or not (Republic of Kenya, 1965:15). In that regard, it emerged that the government –became the master of national socio-economic development. To settle the matter once and for all the people were encouraged to be actively involved in the implementation rather than planning (Gertzel, 1970:48). The directive was implemented in Turkana.

Although many efforts were made to convince pastoralists in Turkana to sell their livestock in order to provide urban and export markets with cheap meat, the failure was blamed on the 'cattle complex.' The complex was attributed to pastoralists apathy to part with their livestock due to psychological and cultural reasons overriding rational economic considerations. Consequently, no much attention was paid to the pastoralist economy; it was generally ignored (Lipton, 1977:5-45). It was the marginalization of pastoralists in Eastern Africa by the post-colonial governments that they faced the problem of rebellion and instability. Examples of major civil wars include those in Sudan, Ethiopia and Somalia. Others include the post-independence regional uprisings in Kenya and Uganda.

Another observation is that due to improper policy implementation and formulization in pastoralist areas, the herders are involved in regular tribal warfare an indication of a desperate struggle for diminishing natural resources in the pastoralist habitat. It is not surprising that the areas and groups most wanting in development are also the ones that have the least access to State and that is when the NGO factor came in as an alternative intermediary to development in this region.

The rigid budgetary and financial controls for the disbursement of Rural Development Fund (RDF) meant that very little of the money was used in the County. The insistence on the economics of social projects, the categorization of projects to be funded and the self-help contributions requirements created a bottleneck in the use of funds. In addition, the more approval role of the District Development Committee (DDC) also meant that the committee did not emerge as a meaningful organ for rural planning and development. The government did not realize that the initiation of people oriented projects presuppose that the people themselves have to accept the projects.

All these would have been overcome through flexibility and innovativeness by the DDC in its approach to the special conditions prevailing in a nomadic setting. Over the years, the DDC relied on rural development funds as a basis for approving and recommending projects to be funded. However, and mainly due to the rigid rules under which the fund was operated,

very little if any progress, was made by way of making the County get a share of the otherwise healthy socio-economic development fund (Weiss, 2004: 39-145).

In the 1990s, the Government of Kenya with the advice of the leading international monetary institutions introduced the cost sharing scheme popularly known as the Structural Adjustment Programme (SAP). The scheme was intended to reduce government spending by involving the citizens in funding socio-economic activities since the people who were expected to contribute were poor and could not fulfill their share of contribution. This meant that most socio-economic activities stalled and access to social services such as education and health became a dream (Oyejide, 2003:10-74). In 1998, the government introduced a one thousand shillings levy (cost-sharing) for people in Turkana County who wanted to have some training on business and entrepreneurship (Republic of Kenya, 1999:51). This made many people unable to access the training because they did not have the money. Instead, they demanded to be paid allowances at the end of the training.

For a long time, the government was unable to make the public service to think locally. As the government field officers play a pertinent role in rural development, to a large extent they did not have a good understanding of both the local people's conceptions and constraints on one hand and the national political and socio-economic planning system on the other. At the same time many public servants were insecure in their understanding of the socio-economic planning systems and this made them afraid of exposing themselves to discussions of development matters with the local people.

Allocation of socio-economic resources at the local level was determined not by systematic area planning that involved careful assessment of probable problems and opportunities but through a mixture of national and departmental priorities. The situation led to the infiltration of ideas and preferences of individual public servants and politicians that compromised the capacity of the local people and departments to execute their policies well. Consequently grassroots planning became a formal exercise that did not significantly affect local development (Jackson, 1970, Gertzel, 1970).

In the rural areas, the bureaucracy liked to be seen as representatives of the population. They considered themselves to be having a mandate to act on behalf of the rural folk on development matters. Accordingly, they attempted to dictate policies persuasively using in some cases populist rhetoric in order to convince the rural population that it was in their best interest to accept and implement these policies. In situations where the rural population disagreed with them, the public officials resorted to coercive methods by forcing them to implement unpopular projects.

Security has been and still is a major socio-economic development challenge in Turkana County. This is mainly caused by the crisis of pastoralism and the proximity to Ethiopia,

Sudan and Uganda borders; countries that for a long time experienced civil strife that necessitated the proliferation of small arms. Banditry and cattle rustling is so serious in that during raids, the active members of the family are killed leaving many orphans who have no economic activities. Those who were not killed lost all the property they owned thus becoming poor.

Livestock rustlers and organized armed gangsters continue to terrorize the residents especially along borders with neighboring communities. The Turkana having been nomads all their lives, they cannot take up other profitable or gainful jobs. Insecurity, banditry and cattle rustling in the County results in poverty of unprecedented levels. According to many residents the insecurity menace could have been eradicated if the government was serious. Instead it preferred the hands-off approach.

Numerous numbers of cattle are taken with indiscriminative killings mainly from the Jie tribe. West Pokot always leads in raids which are normally followed by counter raids with big losses of property and life. The Turkana are not free from blame so far as raids on them are concerned. They have participated in raids on their neighbors namely Pokots, Samburu, savagely killing and looting whatever they considered valuable to them. In particular they steal lots of stock from their neighbors. As a result the raided community organize themselves for revenge by carrying out brutal raids on them. Such raids are not necessarily conducted at night alone. In broad daylight raids are executed accompanied by massive human casualties and huge numbers of stock driven away.

As pointed out earlier, poverty is rampant in Turkana County. In that case, there must have been something wrong with the State's formulation of poverty eradication policies especially for Arid and ASAL regions. Although the government attempted to establish irrigation schemes, they could not cater for all the pastoralists. The prevalence and recurrence of drought and famine poses a great challenge to policy that would have otherwise eradicated poverty at once and for all.

Drought reduces the forage and water for the livestock resulting in great loss to the pastoralist economy. The problem recurs almost after every two years which poses the greatest challenge to socio-economic development since people are always preparing for drought or tackling drought related emergencies. At the same time, the County has large numbers of poor people in both market centers and rural areas. Most of them had lost their livestock to cattle rustlers. Frequent droughts also deplete the families of stock forcing them to run to towns in search of relief. This phenomenon can explain the high growth rate of Lodwar Town and other commercial centers in the County. These centers are a major destination of the poor people.

The population living under absolute poverty in 2005 was estimated at 65%. They are heavily dependent on relief distribution which is seen as another factor that causes poverty

since people are fed throughout the year thus limiting their innovations to look for alternatives. Instead, the government should provide "food for work" as a policy. This policy was partly implemented in the late 1990s in some parts of the County.

This is not to say that the State has not achieved much in an effort to uplift the socio-economic development of the people of Turkana County. The argument is that although the State had its own deficiencies, it has to a great extent contributed enormously in socio-economic development in the County. As argued earlier the State invited the other players and played the dual role of facilitation and funding of major socio-economic projects. For example in the year 2003 the Government of Kenya introduced the free primary education and later the free secondary education to all Kenyan children in public schools. This has benefited a great deal the Turkana children. It has provided funding to several NGOs operating in the County, provided relief food to the hunger stricken and established several health centers across the county.

The Government of Kenya through the Ministries of Special Programmes and Northern Kenya has played a major role in initiating and funding development activities in the County. One good example is the buying of cattle during the periods of severe droughts. Other contributions made by it include the Constituency Development Fund (CDF) which has been a success in the construction of more classrooms, rural access roads, establishment of health centers and financing of bright children from poor families to advance their studies. The State has also played a key role in supporting the Church and other Non Governmental Organizations in negotiating and sensitizing residents and the neighboring communities on the importance of peace and peaceful co-existence .The State through the Ministry of agriculture and Livestock Development has assisted residents to embrace irrigation agriculture especially in Katilu and provision of veterinary services (Republic of Kenya, 1983:47)

The State and IGAD Activities in Turkana County

IGAD collaborates with the Kenyan State in an effort to facilitate meaningful socio-economic development. Its presence in the County has been felt majorly through the Food Security and Environment protection and the Political and Humanitarian Affairs Divisions. Other areas of operation in which the organization is mandated are lacking. This is to say that IGAD'S activities in Turkana County are extremely lacking. Since its inception, the organization has engaged itself in very few socio-economic development activities which is contrary to the expectations of the Turkana residents in which their country is a member to and more so its status as an ASAL County. Pertinent areas in which IGAD and the state could actively participate such a alleviation of drought, livestock development and production, natural and man-made disasters, marketing information, training and credit schemes, promotion of cross border and domestic trade and investment opportunities has never been converted into reality or implemented in Turkana County.

The only notable project to have been initiated by the organization in the County is the water harvesting project which was implemented jointly with the Government of Kenya and was funded by African Development Bank (ADB). It was piloted in the Karamoja Cluster that is comprised of pastoral and Agro-pastoral ethnic groups most of whom share common language, culture, livelihood systems and land area comprising North-Eastern Uganda, North-Western Kenya (in which Turkana County is situated) South Eastern Sudan and South Ethiopia. A consultant GS Capso was also appointed to provide technical assistance to the implementation team. The Ministry of Agriculture on behalf of the Government of Kenya nominated one member to the Steering Committee and the National coordinator. The project was initially programmed to end on 31/12/2006. The bank granted an extension following a request by IGAD on 31/12/2007. However the contract for the regional coordinator was not renewed necessitating the national co-coordinator to report directly to IGAD Secretariat. The identification of an implementing partner (NGO) in Kenya was not achieved after Oxfam declined the offer. It was established in this study that the IGAD had signed a contract in early 2007 with Practical Action. The NGO has been in operation in the region and has a long experience in water harvesting (Republic of Kenya, 2008:38-40).

Challenges faced by IGAD and the State

As indicated earlier, the State-IGAD collaboration has not lived to its required performance in Turkana County. Several other projects apart from the water harvesting and conflict resolution stalled even before the pilot studies were carried out after donors reneged on funding pledges for unexplained reasons. A good example is installing of the Kenya-South Sudan road network which was designed to pass through Turkana County.

In what emerges as the worst case of apathy, the development partners-Italian, Denmark, United Kingdom, Germany, United States and the World Bank abandoned projects that they had earlier pledged to fund. By the year 2005 donors had Ksh 3.8 billion to fight desertification, one of the major reasons for the establishment of IGAD, but only Ksh 400 million was disbursed. The African Development Bank, the European Commission and several United Nations agencies had pledged Ksh 2 billion to desertification programme, which the IGAD Secretariat gave up hope of securing funds (IGAD News, 2004:12-16).

The State, IGAD and the NGO'S in Turkana County

In many African countries, aid played an important role in shaping socio-economic policy. At the same time aid policy were embedded in the overall policies of donor countries (World Bank, 1990:89). Not surprisingly, then any shifts in the ideological underpinnings of social and economic policies in the donor countries were bound to spill over to the principle of aid. Many donor countries accepted the major premises of adjustment. The ever willing NGO sector was preferred.

Another reason for the preference was that aid was understood not so much in terms of helping developing countries but in terms of helping the poor. It was believed that the NGO would be more close to the poor than the state which was marred by corruption and misappropriation of aid funds by powerful individuals in African governments. In the context of donor fatigue it became politically necessary that aid directly reached the poor (Mkandawire, 2005:5-24).

The state's failure therefore gave room to the proliferation of NGOs in Africa as an alternative engine to socio-economic change and development especially among the poor and unprivileged members of a given society. The experience of famine relief efforts since 1974 in Africa by NGOs and the UN agencies made many African governments to be more willing to entrust the welfare of its people to the international development community. The situation was necessitated by the fact that like the colonial states, the post colonial one was a repressive mechanism in charge of an export oriented economy that was designed to serve those in its management at the expense of the ordinary poor folk in the rural and other unprivileged groups.

NGOS were positively received by African states to assist in socio-economic development because of several reasons. NGO staff are normally highly motivated and altruistic in behavior, they function economically due to their small size and decentralized decision making process and structure; and lastly they are independent of the government and are therefore able to develop demands for public services and resources thereby facilitating the work of a government ministry in the rural areas.

The reasons for that were that the NGOs have legitimacy and operational access that do not raise concerns about sovereignty as governmental activities sometimes do. They facilitate and update extensive fact-funding missions, engage in dialogue with a wide range of groups, map out strategies for solving problems and galvanize action by national governments and international organizations to help stabilize crises. They organize regular consultative meetings bringing together governments and NGOs to exchange information and offer critical advices and analyzed data about how the regional governments can help communities in marginalized areas.

The first NGO to set foot in ASAL regions of Kenya aimed at providing relief to the communities hit by deteriorating economic and ecological conditions. The main agencies included Oxfam, World Vision, Medicines San Frontiers, International Committee of the Red Cross (ICRC) Red Crescent and Action Aid (Gimode, 2004:297). It should be noted that these agencies were initially concerned with Somali and Ethiopian refugees. Their main aim was to provide medicine, relief food, clothes, temporary shelters, sinking of bore holes and maintenance of shallow wells. No sooner did they provide these services than they realized that the locals were equally deprived and needed even more attention than

refugees. Consequently, the exposed inability of the state to cope with development challenges and disasters in the ASAL Counties left the state with no option but to allow NGOs to operate. The state embraced neo-liberal approach to socio-economic development, the theoretical tool of analysis of this article.

The NGOs play very important role in socio-economic development in Turkana County particularly in the provision of curative and preventive services, education, clean and safe water, rehabilitation of socially distressed members of the community, disaster management, conflict resolution, aforestation, poverty alleviation and youth programmes. All their programmes are well incorporated in the County Development Committee (CDC) programmes and therefore supplement to a great extent to the government efforts in so many areas. The government of Kenya through the Arid Land Resource Management (ALRM)(a department in the Ministry of Special Programmes) in partnership with Oxfam GB in the years 2005/2006 they managed to achieve the following; ten trapezoidal bunds constructed in Kibish and 13 contours bunds constructed in Kalemung'orok. All these were to assist the community in water harvesting. Despite all efforts and activities undertaken by the State, NGOs and Community Based Organizations (CBOs), the impact gained need to be sustained.

Several NGOs including Oxfam and World Vision in partnership with the Ministry of Agriculture implement food security initiatives in the County. This stakeholders working necessitated the formation of an Agricultural Service Provider Consultative Forum (ASPCF) which is a sub-committee to the County Steering Group (DGS) that coordinates the implementation of all agricultural activities. The Government of Kenya in collaboration with several Faith Based Organizations (FBOs) also fund several schools in the County. To ease pressure on natural resources, alternative sources of livelihood have been sought in conjunction with NGOs and other governmental departments. The largest and strongest FBO in Turkana County is the Catholic Diocese of Lodwar.

As hinted earlier, NGOs in Turkana County collaborate with the Government of Kenya in the provision of the following services, humanitarian assistance, peace and conflict resolution within and without Turkana, building of capacities of pastoralists, their leaders local organizations, influencing decisions making process, supporting democratic governance, influencing policy processes facilitating formation of local voices especially those of women, supporting and promoting innovative conflict resolution and peace building initiatives, mitigating the spread of effects of HIV/AIDS pandemic and support of other socio-economic activities that will improve and secure livelihood of the poor communities and groups in the County. All these initiatives and processes need to be sustained as pointed earlier for the synergized strategies to impact significantly in the next few years.

Conclusion

The State inability to meet the independence expectations of the people and especially the poor gave room to the proliferation of NGOs. On the other hand as the states within the Horn of Africa realized that the challenges bewildering them especially in their dry lands are common, they decided to form an inter-governmental organization. IGADD and later IGAD was formed as a result of the recurring severe drought and other natural disasters. Its mandate was to help member states to further their development despite the effects of drought and other adverse environmental conditions that hold back progress.

At the same time, other development partners were positively received to assist in speeding up socio-economic developments. Turkana being an ASAL County and majority of its residents being poor pastoralists, NGOs were called in to synergize effort and resources to help uplift their standard of living. The synergized effort is contributing a great deal in uplifting the socio-economic development of the people of Turkana County.

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