

A Research proposal
On
**ACADEMIC PERFORMANCE OF SECONDARY SCHOOL STUDENTS OF
TANZANIA IN SCIENCE AND MATHEMATICS IN RELATION TO ACADEMIC
INPUTS AND SCHOOL CLIMATE**

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CHAPTER ONE

INTRODUCTION

In the industrialised countries, much is known about the relationship between schools' material inputs or social practices and students' achievement levels. Less is known about such relationships in the developing countries. The diversities in different countries which is based on environmental differences, social economic status and the differing levels of technological development of the people, need more research studies to be conducted in the developing countries. Also in order to know more about the academic inputs and school climate factors, as far as academic performance is concerned. In order to reduce the gap, the study will search into the possible academic inputs and school climatic conditions which may enable the achievement of improved academic performance and quality education. The research intends to find out, which of the possible inputs have more significant relationship in effecting positive change in academic performance. Obviously the investigation will have to go to possible inputs like; factors that capture the attitudes and interest of the students and which can motivate them. The factors and the teaching methods more suitable and effective for science and mathematics teaching, have to be identified. Inputs that can make the subjects a reality, or having some useful use in their lives. Such inputs are likely to increase the students' interest and motivation in studying the subjects, resources to learning which is mentioned in most of the related literature, the research has gone through.

Tanzania is situated in East Africa and has a population of 30 million people. Its political capital is Dodoma, while Dar es Salaam is just the main commercial city. Kiswahili being our official language, it is used as the medium of instruction in primary schools and is also taught just as a subject. English is taught as a subject from class three and above as the medium of instruction in secondary schools and other institutions of higher learning. All primary school textbooks, Besides English textbooks, are written in Kiswahili. English textbooks are used from secondary schools and institutions of higher learning.

The Tanzanian educational system is based on the 7-4-2-3 system: 7 years of primary school, followed by four years of secondary school leading to Ordinary Level (O-level) exams in nine subjects, followed by two more years leading to the Advanced Level (A-level) exams in nine subjects, including General Studies. In the second year of secondary school, there is a national assessment examination which allows those who pass to continue to study for an additional two years. After those two years, students take the Certificate of Secondary Education Exam (CSEE), held in November; the results come out in March of the following

year. Two years later, A-level exams are given. After the final year of secondary school - the thirteenth year - students can take the Advanced Certificate examination, which is recognized all over the world. On the average, a student can complete the Bachelor's degree in three years, although some major disciplines require more time.

Since 2001, Tanzania has taken major strides to advance its primary and secondary education sectors. The Primary Education Development Plan (PEDP, 2002-2006) and the Secondary Education Development Plan (SEDP) implemented starting in 2004 have led to significant improvements in provision of basic education in the country.

2.1 Primary school enrolment

The most impressive achievement has been that of expanded enrolments. Enrolment in primary education increased from 4,839,361 in 2001 to 7,959,884 in 2006. The Net Enrolment Ratio (NER) in primary schools increased from 65.5% in 2001 to 96.1% in 2006. This means that, nearly all the children of primary school age are now enrolled in primary schools.

2.2 Secondary school enrolment

Increased primary school enrolments created increased pressure further up to the tertiary levels such as the secondary level. Expansion of secondary enrolment has been equally spectacular, though far from reaching the levels attained in primary education. Enrolment in Form 1, the first year of secondary education, rose from 99,744 in 2003 to 243,359 in 2006. GER has increased from 10.2% in 2003 to 20.2% in 2006. Secondary NER is reported to have doubled from 6.3 in 2003 to 13.4% in 2006.

2.3 Infrastructure

Increases in enrolments have to be matched by improvements in school infrastructure. New classrooms have been built and new schools constructed. Primary schools all over the country are characterized by new classrooms. More than a thousand new government secondary schools were built between 2003 and 2006; and the number of secondary schools has increased from 1,083 in 2003 to 2,289 in 2006, largely through the establishment of new government secondary schools (whereas prior to SEDP much of the increase in recent years was led by private secondary schools). Toilets (pit latrines) and teachers' houses have also been constructed in multitudes too, though at a slower pace as compared to new classrooms.

2.4 Books and teachers

As far as books and teachers are concerned in the recent years, the provision of books to the school level has increased drastically, primarily through the 'capitation grant'. The pupil: book ratios have improved, though are yet to reach adequate levels, possibly because

the full capitation grant has not reached the school level on time. The supply of teachers has also risen up, with over 32,000 new teachers recruited in the first three years of PEDP alone. However, the increase in pupils has outstripped the recruitment of teachers. Albeit belatedly, greater attention and resources are given to recruiting teachers for secondary, who need to be better equipped than the primary school teachers. In August 2006, President Kikwete announced that all university BA students in education will get a full scholarship in order to speed up the supply of competent teachers.

To sum up, Tanzania has experienced tremendous progress in education in the last five years. After years of neglect, these efforts were very much needed. The Government's political commitments have been exemplary – from President Mkapa's second period of his leadership to the current government exhibited by President Kikwete, Prime Minister Lowassa and Minister Sitta. The rhetoric has also been backed up by resources, as the budget for basic education has increased significantly in each year of this period. There is a clear sense that things are moving, and a feeling of excitement and optimism. For all of this, the Government and its partner's donors (including the Government of Norway and the World Bank) deserve commendation. But this does not mean that the future is going to be any less challenging. As the numbers in primary education becomes bigger and bigger the momentum to expand secondary education gathers steam, even greater strategic policy clarity will be needed to guide prioritization, resource allocation and implementation. The following five challenges are the most critical today:

CHALLENGES IN QUALITY EDUCATION

Socio-Historical Factors affecting Quality Education

When the industrial powers of Europe colonised Africa in the 19th century they created a capitalist economy with similarities to their own countries of their origin. Africa was intended to serve two purposes: One, to provide a potential market and secondly to be a source of raw materials (Mbah and Igariwey, 2001). In that process Africa was turned from a pre-colonial, self-sufficient communal agricultural economy to that which is compelled to embrace interdependence with other economies. Step by step the society was stratified and modelled after capitalism. Such developments served to establish capitalism in Africa. They also served as an embryonic stage to socialism giving rise to trade unionism and revolutionary socialist parties during colonialism, such as Chama Cha Mapinduzi (CCM) in Tanzania.

At independence most African countries became socialist states and elected their education systems to model socialist ideologies such as Humanism in Zambia, Harambee in

Kenya, Education with Production in Zimbabwe and Ujamaa in Tanzania. But as anarchists like Mbah and Igariwey (2001) would argue, either way, state socialism like state capitalism is fatalistically doomed.

Tanzania's 'Ujamaa' or 'Family-hood' is a kind of African socialism, was captained by Tanzania's founding father of the nation, and who paved the way to our liberation, the former president Julius Nyerere. He believed intensely in rural African way of life and the traditional value systems and that the return to these values and its means of production would ultimately end capitalism. In spite of other successes, Tanzania moved from being the biggest exporter of agricultural products to being the biggest importer. All these economic failures had an impact so much on the quality of education and it is not hard to see why. Babu (1981), a former finance minister of Tanzania observed that the majority of the African leaders failed to analyse imperialism in relation to the African situation and hence as a result Africa found herself faced with neo colonialism. Capitalism found allies among the new African leaders especially through corruption and greed (Du Bois, 1958; Rodney, 1981; Mbah and Igariwey, 2001) (Babu, 1981). It is a usual thing in most of Africa, including Tanzania to find excessive wealth in the hands of a few coexisting side by side with utter poverty of the masses, with devastating impact on quality education and schools infrastructure. An idea has been put forward that most post colonial leaders in Africa have largely failed to deliver the much hyped freedom and furor at independence (Ake, 1996)), which included quality education. This has been partly due to the gap between the leaders' radical rhetoric and actual performance, seen as counter-productive (Babu, 1981). There is also a view that socialism by its nature tends to capitalize on satisfying human needs as opposed to excessive capitalism. However, socialism under being states seems to have failed most of Africa. Since Tanzania's philosophy on education is still rooted on socialist ideologies which might have been relevant in dislodging exploitative forces of colonialism, educational policy makers may need to appraise the in light of globalized capitalistic world economies and international trade, so as to charter a path that is responsive and best poised to meet citizens' needs on quality provision of services including education. For a right fit between advancing cultural ideology and organisational strategy and International Journal of Asian Social Science, 2013, 3(3):800-813 803 goals, it is paramount that leaders and managers consider external environment and are adaptable to changes (Daft et al., 2010). Notions on Quality Education

Quality education may get us to the idea of inputs, that is, numbers of teachers, teacher training curricula, and learning materials. Secondly it may refer to processes, which is the amount of direct teaching time, extent of active learning. Thirdly, it may be explained as

outputs, that is, test scores, examinations, graduation rates, and lastly it may refer to outcomes, that is, performance in subsequent employment. Furthermore, in some quarters, quality education may simply mean the attaining of specified targets and objectives (Chapman and Adams, 2002). While acknowledging and adhering to the above notions on quality, this study will follow a humanistic approach to quality where the customers/clients' perceptions are seen as a determinant factor as to the level of quality in education. It is on that basis that the study sought to be informed by respondents' perceptions on an array of issues as to the level of quality education in Tanzania. That is the Humanist approach to Quality Education

The Humanist paradigm emerged in the midst of the 20th century with great focus on human freedom, dignity, potential and self-determination. The humanist assumption is that people act with intentionality and values (Huitt, 2001). Therefore it may not be enough to judge quality in education based on functionalist and mechanical approaches rooted in the commoditisation of education such as examinations league tables (Stronach, 2000). The Dakar Framework for Action, adopted in 2000 confirms that a quality education based on a human rights approach means that the rights are implemented throughout the whole education system and in all learning environments and situations. It means that the education systems are oriented towards human values allowing the realisation of peace, social cohesion and the respect for human dignity (UNESCO., 2005). Cliff et al. (1987), claim that quality in education is somewhat problematic. Like beauty, they say, it lies in the eye of the beholder. It is an intangible commodity posing great difficulty as to its measurement with exactness. There are critical concepts to be found in the study of quality. These contrast quality as a subjective, that is as seen through a procedural eye and quality as seen in a transformational way. The procedural concept is explained by Sallis (1996) as products or services meeting a predefined specification in a consistent fashion. The fundamental question occupying the producer is whether the product will be fit for its purpose, needs or use. In the education system, this may be the schools or the Ministry of Education seeking to define what quality education means and whether acquired skills and knowledge will be fit to serve our economy. Such a view of quality is functionalist, mechanistic and offers a highly reduced view of holistic quality. The transformational approach to quality is not so much focused on the product but on the customer. It is seen as targeting to improve rather than prove. To empower rather than impose what is quality. Such a view of quality would be seen as wide-ranging, democratic in nature and befitting to most African Education systems where at times there are fluctuating democracies (Potter et al., 1997), illiberal regimes (Dahl, 1989) and ethnically

divided communities (Salih, 2001). *International Journal of Asian Social Science*, 2013, 3(3):800-813 804

Customer Satisfaction

The consumer plays a significant role in assigning meaning to quality and its pursuit, just as the governed or the electorate would largely determine levels of democracy in a polity. Though the concept of customer satisfaction is quite familiar in private sector practices, it has also gained attention and some level of its applicability in public sector organisations. Schools by their nature are organisations, which are established to accomplish their goals by teaching, educating and instilling values, in that way, enabling people of all ages and cadres to succeed and to lead a life of satisfaction (Stronachet al., 2000). Quality education would therefore entail learners who are in good health and ready to participate and learn under a supportive environment that is safe, protective, gender-sensitive, and provides adequate resources and facilities relevant to the curricula for the acquisition of basic skills particularly in literacy, numeracy and other life skills such as in health, HIV/AIDS prevention and peace building. The use of child-centred teaching approaches and fair assessments is another alternative which would also add to quality education through the facilitation of learning and a reduction of inequalities thus aiding national goals for education and enhanced positive participation in society (UNICEF. 2000). It is observed that the mechanically set standards rather than critically set, on quality, as in management principles may not necessarily reflect or achieve customer satisfaction. Quality in its essence is the degree of satisfaction perceived by important stake holders and this satisfaction is proportional to the differential among the expected and perceived benefits to them (Stronachet al., 2000). The merely complying to the standards is a matter of course and the drive by some educational institution to seek to measure quality as a target in learning settings will most likely cause it to cease to be a good measure (Stronach, 2000). From a humanist perspective, learners are at the centre of „meaning-making“ (Freire, 1970), which means an interactive and interpretive approach to quality education. This reinforces portrays a view that quality should be sought for in varied and flexible ways that are akin to local cultures and responsive to global challenges, devoid of external domination through forms of systems transfer as often perceived by some former colonies in Africa (Cossa, 2011).

Customer Knowledge

Quality therefore means knowing customers in ways and depths never fully explored before and using this knowledge to translate needs into innovative new approaches (Artzt, 1992). Since the education scenario is complex, it is not surprising for example, that teachers

are service providers when they teach, but customers when they receive service from government. In this multifaceted relationship, the government and parents are sometimes secondary customers of education but also providers of funds and services within schools. Customers in education do not usually have an equal socio-political standing due to traditional hierarchical structures (Cloke and Goldsmith, 2002). Therefore, effort should be made to apply forms of distributed leadership (Harris, 2008) which empower those below, such as teachers, students and some parents, if the levels of quality education are to be improved. We are made aware that preceding customer satisfaction is customer knowledge, which entails knowing the cultures existing in the school community of customers, the values and aspirations of (International Journal of Asian Social Science, 2013, 3(3):800-813 805) those people, their fundamental beliefs, practices and socio-economic needs. A solid and strong base of customer knowledge by any school administration should be regarded as a prerequisite if schools are to raise the satisfaction levels, as this indexes quality education. Development of science and technology especially in developing countries demands the preparation of skilled people in science disciplines from lower levels of academic and skill training. This fact indicates the need to promote effective science teaching and learning, to address the challenges facing the science learning in schools and opportunities for improvement. A study was conducted in four districts in Morogoro Region, Tanzania. Specifically, the study intended to identify the pass rate in science subjects, teachers' professional development, science teachers' teaching strategies, students' level of satisfaction with the teaching and students' readiness to take science subjects in their high schools. The study was conducted in twenty four secondary schools using a sample of 471 students and 66 teachers. The data from students and teachers was collected through structured questionnaire and focus group discussion. The results revealed poor quality of science classroom teaching and a serious decline in interest of students in science subjects. It was therefore concluded that, teacher – student interaction and relationship in classroom teaching and learning of science need improvement. It is suggested that, future research can observe on the influence of social factors in the decline of interest in science subjects among secondary school students in Tanzania.

In an increasingly globalized world, studying science subjects in secondary schools is very important issue, regardless of the challenges facing the science learning. These challenges facing individuals who are engaged in science studies are from time to time influenced on science education practices in schools (Fraser & Walberg, 1995; Levy & Murnane 2005; Stewart, 2010; Wilmarth, 2010). These challenges include: the evolution of

societal needs, changes in the purposes of science education, changes in new theories of learning, rapid change in technology, changes in scientific innovations, changing labour force demands, the changes in science as a discipline itself and the evolution of the market forces in science careers. Tanzania as a developing country faces many of the same challenges which have increased the need to redefine science education practices, so as to make the science learning more functional for learners and more effective in catering the needs for those who choose to pursue the formal study of science beyond secondary education (Chonjo, Osaki, Possi, Mrutu, 1996; Osaki, Hosea & Ottevanger, 2004).

Examining how science education can be best promoted in secondary schools is an issue that has received limited responses and is consequently poorly understood in sub-Saharan Africa including Tanzania (Ogunniyi, 1986; Organization for Economic Co-operation and Development–Global science Forum, 2006; Osaki et al., 2004). This study draws on a pragmatic world view in exploring the current on-going school climate and its influence towards promotion of science subject choice as career pathways for secondary school students in Tanzania. The study identifies the challenges and opportunities towards the recommended practice in improving science classroom teaching and learning for secondary school students in Tanzania.

Science Teaching and Learning in Schools

School climate is one of the major factors that influence students' interest in science subjects in many countries. This has been evidenced through the dramatic decrease of the number of students studying science subjects in secondary schools. There is also a serious concern on the reason why many students who do core science subjects in secondary schools opt not to take science programmes and science related specializations in their higher learning. As if that is not enough, many graduates who graduate in science fields choose not to pursue science related occupations regardless of their good qualifications in science courses (Wynarczk, 2008). Researches conducted in some developing countries by Munro and Elson (2000) indicates that, only 30% of students who studied physics and 32% who studied chemistry and mathematics at their higher learning in 1994. These percentages decreased to 25% and 26% respectively in 2005 as pointed out by research by Lyons (2005). The similar trend can be seen in France, Germany and other Developed countries where for instance, the students' enrolment number has been decreasing in different rates. Example the trend in some of the countries were as follows, Norway experienced decrease at the rate of 40% as from 1994 to 2003, Denmark is 20% as from 1994 to 2002, Germany 20% as from 1994 to 2001 and the Netherlands was 6% as from 1994 to 2001 (OECD, 2007).

The reasons for the decrease in the number of students taking science subjects in developed countries vary from the reasons for students in developing countries, that is why this study sought to investigate the role of school academic environment in the observed drop in the number students taking science subjects in secondary schools in developing countries. According to the 2005 Euro barometer study on European reports, it was revealed that the reason as to why youth in schools are currently not interested in taking science subjects are complex, however, there is a firm evidence that indicates a connection between attitudes towards science subjects and the way in which science subjects are taught. Similarly, the studies by Lyon (2005) acknowledged that the decline of interest among young learners in science subjects in Tanzania is a result of how science is taught and learnt.

Speaking in the Parliament session in 2008, the then minister for Education and Vocational Training Prof .Jummanne Maghembe noted that, there was a drop in science subject choice for students in secondary schools especially for those going for Advanced Secondary Education in Tanzania. This was specifically in mathematics, biology, physics and chemistry where by the decrease was said to range from 30% in 2005 to 25% in the year 2009 (NECTA, 2005; 2009). Studies reveal that the teaching and learning of science is more theoretical than observational, experiential and experiment based, this situation affects the interest of students to take these subjects in their higher studies (Tytler, 2010). To rectify the drop in number of students taking science subjects, the science teaching should focus on the contemporary needs and experiences of the learners and that it should be a constantly changing and developing discipline so as to localize the content to the learners' context (Speering &Rennie, 1996).

The teaching of science in a non-foreign expert, and unsystematic way of teaching are still in its infancy or are issues which are not taken care in teaching. In fact the science courses seem more relevant to those students with science career aspirations and not to the majority for whom secondary science is terminal (Lyons, 2005). Example, science education in Africa has been criticized from several points of view. Lacks of relevance to African cultures, being a collection of facts from 'western' science with little or no adaptation and less critical, and fact-transmission oriented pedagogy, are some. Of those it was recognized long ago that science education in Africa did not take into account the intellectual and cultural milieu of the children. This caused the decline of interest in science subjects due to evaluation that the science subjects are less relevant to students' daily life (Munro & Elsom, 2000).

Teaching and Learning of Science Subjects in Tanzania Schools

Tanzania has been reviewing its education curriculum on various occasions in order to bring meaningful learning at different levels. The changes took place in different years and in various phases. Example in 1976, 1995 [Unified science which was just piloted in some schools for one year and abandoned], 1997, 2005 and lately in 2007 (URT, 2009). In an effort to improve science teaching and learning in secondary schools the government of Tanzania introduced several projects including School Science Project and School Mathematics Project. The focus of these projects was to improve the teaching strategies and adequate use of available teaching materials in the school and students' learning environment. The teaching materials and strategies for these projects focused on experimental approach for teaching and learning. These programme also focused on laboratory activities and a great deal of outdoor activities (Osaki, 2007).

However, the School Science Projects and School Mathematics Projects were later abolished after the pilot study due to the massive failure of students who were in those projects. The failure as advanced by Osaki (2007) was because the implementation and examination did not focus on what the student were actually learning in their science classes. By considering the results observed from this project, it can be argued that the school teaching and learning environment is influencing the results for students who opt to take science subjects, hence, contributing to the drop of students' interest in science subjects. This observation is in line to what Kupermic, Leadbeater and, Blatt (2001) who emphasized that, school climate is the social learning setting or learning environment in which students have different experiences, depending upon the protocols set up by the teachers and administrators. In fact all scholars agree that the school climate can create a fabric of support that enables all members of the school community to teach and learn at optimum levels. The study by Manoni (1981) revealed that negative attitudes towards a course of study would always affect performance which in turn might discourage further engagement on the course. Normally students are to be motivated to arouse the interests to the field of study, i.e. the science studies, by instilling to them with positive evaluative affection towards performing the best in opting and learning of science subjects (Reeve, Nix & Hamm, 2003). The observation pointed out in this research give predictive reasons for the situation in secondary schools in Tanzania due to decrease in the number of students taking science subjects and the high failure rate in science subjects observed in secondary schools.

With respect to the capacity of the educational system to meet Tanzania's national development goals, findings of the study by UNESCO (2009) reveal acute shortages of

science teachers and other resources such as text books and teaching aids in secondary schools across the country. The need is particularly acute in science, mathematics and technology education. For example, whereas the figures for secondary-school mathematics teachers for Masasi District in Mtwara Region and Dodoma Municipal show that urban areas may fare somewhat better than rural ones, the difference is minor when considering the depth of the need in case of science teaching facilities and qualified teachers in mathematics and science.

Speaking at the Conference for Science and technology in 2010, the president of the United Republic of Tanzania emphasized that, “Dealing with the shortage of science teachers alone is not enough for quality science education. There is need of providing teaching aids and text books. The existing shortage of 9,486 science laboratories and 35,840 housing units for teachers, demands a staggering USD 1.2 billion budget over the next five years. To this cost, adds the requirement of 13.5 million additional science text books”. This serious statement from the Head of the state implies the presence of difficulty learning environment especially for science subjects in secondary schools. Hence that is why this study focus of examining the on-going science teaching and learning process in the mentioned kind of learning environment in secondary schools and the opportunities which can be useful in overcoming the challenges.

Drop Rates and Pass rates in Science Subjects for Secondary School Students

Different studies indicate that drop out from science subjects and the lack of teachers as well as teaching facilities are the most cited reasons. According to Best (2010), the failure in National Examination results which has been reported in different sources is only a single door for explaining the situation. This recorded evidence goes hand by hand with the serious dropout from science subjects.

Attitudinal data from many sources indicate that it is common for many school students to find little interest in their studies of science and to quite often express an active dislike of it. In comparison with a number of other subjects, too many students experience science subjects as disciplines which are dominated by the transmission of facts, as involving content of little relevance, and as more difficult than other school subjects. This experience leads to disinterest in science and technology as personal career possibilities, and only a mildly positive sense of their social importance (Tytler, 2010). Science education researchers have given increased attention to how various aspects of the Nature of Science can be taught, but school science curricula remain too loaded with content knowledge for these aspects to be sufficiently well-emphasized by teachers. (UNESCO, 2009).

The teaching process and the teachers effectiveness in teaching is therefore expected to be emphasized so as to overcome the challenges in science learning at school level.

Considering the current nature of learning environment where there are inadequate teaching facilities and poor science teachers' professional development in Tanzania this study focused at examining students responses in line to challenges occurring in the teaching processes in schools and the opportunities for improving the revealed situation

The results of the research study conducted in Morogoro region (Nkuba, 2009) shows a serious drop of students from science subjects in and others opted not to take science subjects due to various reasons. The reasons which were explained by students during interviews are such as absence of teachers, books and teaching facilities. In some schools such as Sofi, Iwemba and Bwakilahini the condition was more serious whereby none of the student managed to take science subjects due to absence of science teachers. In 2010 many students took the science subjects as compared to the year 2009, this feature indicate improvement in terms of number of students who took science subjects but the performance remained poor the fact which can be linked to facilities and teacher- student classroom interaction. Considering the performance, most of students in the year 2010 got "D" grades and "F" grades. Generally the results in the three science subjects examined ranged from very few "C" grades to many "F" grades.

In an attempt to find out the reasons for the high failure rate many students said that, the massive failure in science results were contributed by the teaching styles where by most of science teachers used lecture method in teaching and most of practical aspects in these subjects were taught theoretically. In fact teaching was fast with an intension of finishing syllabi rather than involving students in learning with an intension of helping students to effectively grasp the science concepts. One student at one of the studied secondary school in Morogoro rural pointed out the following statement;

'...It is difficult to pass in science subjects at our school; this is because of the difficult learning environment. First of all science subjects are too difficult to understand because they cover many concepts, apart from that, science books are lacking, no science facilities, but also many of our science teachers are too fast in their teaching and don't care even if we ask questions.'

The facts pointed out by this student emphasize that, together with other challenges which the country is facing in terms of teaching facilities and inadequate number of teachers, the classroom teaching process and teacher-student interaction during the actual teaching need to be revisited. It show with the explanation from the student that, there is weak teacher-

student classroom interaction and relationship the process which probably reduce students' interests in science subjects, the situation which results failures for many students who decide to take science subjects. This observation is supported by Thomson & Fleming (2004) who noted that, "In most cases students in schools are opting not to take science subjects due to protocols set up by teachers and administrators, these actions cause fears to students in learning and hence discourage students from doing science courses which in fact are more or less demanding". Speering & Rennie (1996) emphasize also that, science concepts taught without considering the learners' social environment the process which ends up discouraging learners who wish to take science courses, hence drop out from science subjects.

After listening to students, the research took time also to seek some comments from teachers on the rate of dropout for students in science subjects. In an interview with one teacher at one of the selected schools, the teacher made a comment that indicated the difficult teaching environment that limits their teaching capacity and degree of improvisation. He specified that;

"Science teaching in Tanzania is currently facing a serious shortage of teaching facilities, this condition reduce the motivation in the teaching process due to difficulties in the process of teaching some abstract science concepts. In fact classroom teaching environment is so discouraging due to lack of teaching science teaching materials. This inadequacy is forcing us to teach all aspects of science in theory and leave out the more difficulty aspects which are difficult to teach without a practical session. In line to that, there are so many changes in science teaching but there are no any in-service training which are being provided to update us with the new approaches in science teaching".

Looking at the comments given by the teacher in the discussion, it is true to the fact that even science teachers are very discouraged with the teaching environment which reveals absence of science teaching facilities. Since the teachers' themselves are discouraged with the science learning environment there is no doubt that students will lack guidance and counselling on how to study and succeed in science subjects regardless of the challenges. Furthermore, it seems that there is no improvisation in managing science teaching the situation which causes teachers to leave out difficult concepts. Specifically the teacher pointed out the need for in-service training which can help teachers to upgrade their skills so as to manage their current teaching challenges. All the changes in teaching of science limit teachers motivation in teaching and cause them to teach poorly in their science classroom as the results many students find science subjects difficult and hence dropout.

Examining the comments from both teachers and students it reflects what Speering and Rennie (1996) explained on the need to strengthen teacher-students interaction in case we want to increase motivations for science subjects in students. Apart from that, teaching science subjects theoretically increase the chance for students to regard science as too difficult and hence less relevance to students daily life as noted by Goodrum (2006). Therefore, the observed situation need to be rectified by giving teachers the necessary seminars and short courses and encouraging them to improvise so as to help students in developing interests in science subjects while the government and other stake holders are working on other factors such as inadequate of facilities. Teachers' in-service Training for

Science Subjects in Selected Schools

One of the factors which might hamper with the quality of teachers and the teaching process is that of teachers' professional development. There are many Tanzania education systems especially in terms of teaching strategies and techniques. All these changes require in-service training so as to update teachers on the changes made by the ministry in the syllabus and the teaching strategies. The second objective in this paper intended to examine the degree in which the teachers in selected schools attended in-service training in the past two years. The responses from the teachers involved in the study were as indicated below.

In- service Training attended by science Teachers in the 2009 and 2010.

Considering the teachers' response from the selected schools, only 6 % (4 teachers) of teachers involved in the study agreed to have attended in-service training in the past two years. This was opposite to the 94% (62 teachers) teachers who didn't attend any in-service training in the said time. It happened one of the visited district (Morogoro rural) in the visited school and noted that not a single teacher attended any subject specific in-service training. The fact that where by many teachers are teaching in our schools without updating their pedagogical competences is very dangerous to the teaching profession and to students learning. This is because there are so many changes in the syllabus and modifications in teaching approach which are introduced by the ministry with intention that in-service teachers can attend in-service trainings and workshop so as to get induction in those changes but the opposite is true. Example recently the ministry of Education and Vocational Training changed the teaching approaches in schools from what is called "Content based to Competence based. The assumption was that the teachers on post are going to attended short seminar so as to upgrade their skill the action which was not done. Mind that, all the form four National Examinations are currently considering the competence based approach and the students are examined considering this focus, hence how comes for students in schools are

able to pass while the demand of examinations are in the new fashion in which the students were not oriented?

This observation is providing an alert to what Osaki (2007) observed in the School Science project in which he noted the massive failure in science subjects due to fact that, the emphasis of teaching strategies and the examinations brought to students in their national examinations did not focus on what the students were actually learning in their science classes. The observation from the teachers' attendance to in-service training is also supported by the study done UNESCO (2009) in Masasi whereby the under qualified human resource in the teaching profession was noted as the factor together with other factors contributing in students failure rate especially in science subjects. Munro and Elsom (2000) emphasized also that, students' decline of interest in science subjects in Tanzania is also contributed by the way in which how science subjects are taught in classes. All these facts suggests that, teaching of science subjects should be done properly by updating the teaching skills for science teachers so as to match with the changes in the country. This is possible through the use of in-service training and seminars for teachers in schools.

Teaching and Learning Strategies used by Teachers in Classroom Teaching

This study intended also to identify the teaching strategies used by teachers in classroom in the selected schools. To properly document the intended classroom activities 471(100%) students were involved in the study and were required to identify the teaching strategies which their teachers' use in the classroom.

The response from students on the different teaching strategies used by teachers revealed most of traditional methods of teaching being common teaching approaches used by teachers in the selected schools. The teaching cultures which involves coping notes, simply explanations without giving students chances for asking questions were sited as mostly used strategies of teaching in the rank of 376 (80%) and 374 (79%) respectively.

Either, teaching approaches which encourage active students participation such as outdoor scientific activities, experimentation and Teacher supervised classroom activities were rarely mentioned by students, opposite to that many students 264 (56%), 366 (78%), and 127 (27%) respectively mentioned these strategies to be not commonly used.

Furthermore students noted that, group work and classroom discussion were the mostly used teaching strategies especially in large classes. In fact the biased method of teaching by the teacher encourages chorus answers and do not involve each and every individual in the learning process. In line with the findings of this study there is high

possibility for many students to drop from taking science subjects due to poor teaching strategies and depository teaching as pointed out by Speering and Rennie (1996). Hodson (2003) emphasize in the same line by specifying that, the kind of teaching approaches and teacher –students in classroom has influence on students’ attitudes towards the courses and subjects in general. Thomson (2006) note the same line of results on students attitudes towards science subjects which was influencing by the teaching and learning process as well as teacher-students interaction in schools. The findings on this aspects increase the need for revisiting the teaching strategies currently used by teachers in schools.

Students’ Satisfaction and Readiness to Take Science Subjects in High Schools

With this study, the researcher thought that it was good to examine students’ level of satisfaction and readiness to take science subjects in their high school studies. This was necessary so as to test to their evaluation of the learning process in relation to career pathways they aspire to take. Under this objective the responses from students were as indicated below:

Students’ Response on the level of satisfaction with the teaching process and their Readiness to take science subjects in their high Schools subjects Level of satisfaction in Science Subjects and Readiness to Take Science Subjects in High Schools.

Source: Field data June-October, 2011.

Response from students about their level of satisfaction and readiness to take science subjects in their high schools reveals that, many students in science classes are not satisfied with the teaching process and hence are not ready to take science subjects in their high schools. This was evident in almost all the three subjects considered in this study. Most of students’ responses range from less satisfied and not ready to take science subjects to not satisfy at all and not ready to take the science subjects. This response is practical in physics, chemistry and biology.

For example 195 (41%) said are less satisfied with physics and are not ready to take it to high school while 111 (24%) pointed to be not satisfied at all and are not ready to take this subject again in their high school. Considering biology subject 90 (19%) specified that are less satisfied while 213 (45%) specifying that are not satisfied at all and are not ready to take the subject in their high school studies. Looking on the response of students for the chemistry subject 40 (9%) said are less satisfied while 324 (69%) students claimed to be not satisfied at all. On the other side of the coin very few students appear to be satisfied and are ready to take science subjects in their high schools. The response on this side were 75 (16%), 65 (14% and 17 (4%) for physics, chemistry and biology respectively. The possible explanation with this

result is that, the teaching process, teacher-students classroom interaction, availability of learning materials and facilities are attached with this response.

Both classroom interaction and the teaching process contribute largely to this response due to facts that, the teaching strategies used by teacher in class didn't consider the need for improvisation so as to overcome the challenges facing the learning of science subjects. Adams, Doig, & Rosier (1991) note that, the decline in interests in science subjects in these early years of secondary school is particularly of concern, since it is in these years that attitudes to the pursuit of science subjects and careers are formed.

Furthermore, Speering & Rennie (1996) identified a number of interconnected factors which are useful in explaining the trend of responses found in this study, the factors include the diminished personal nature of the teacher-student relationship forced in part by fragmented timetable arrangement, a change from an activity- based science program to one dominated by transmissive approaches and the nature of curriculum that allow little flexibility for tailoring to individual students' needs. In line to this recommendations, Goodrum (2006) and Rennie (2006) both of them emphasize that the decline of students' interests in science subjects is contributed by the students' perceptions that, there is little relevance of science courses with their daily life. This fact can have contribution in the observed decline of students' interests in science subjects.

Challenges and Opportunities in Promoting Science Subjects Choice in Tanzania

Challenges

- i. Together with inadequate teaching facilities in schools other critical challenges noted during this study which are hindering the promotion of science subject choice in Tanzania secondary schools are as follows;
- ii. Poor quality of science classroom practice which reduce the enjoyment and effective learning of science subjects by students.
- iii. Serious shortage of competent and qualified science teachers in many schools in Tanzania. This is influenced by the current employment criteria which demand a principal pass only.
- iv. Evidence of students developing negative attitudes to science subjects over the secondary school years
- v. Presence of many schools in the country with no even a single science teacher with students completing form four and subjected to science examinations some of them such as mathematics and biology said to be compulsory.

vi. Lack of or no in –service training regardless of many changes introduced by the ministry especially in science strategies and emphasis.

Opportunities

a. Educational colleges have chance of initiating short courses for teachers in school in order to help them in updating their pedagogical skills.

b. It is time for science people in the country and in different organizations and academic institution to come together so as to identify strategies which can motivate students in schools to take science subjects.

c. Educational College has chance of increasing the training opportunities for science teachers so as to feed schools which are currently having no science teachers.

d. It is time now for the ministry of education to collaborate with other Educational institutions in order to solve the problems of science teaching.

The current ongoing trend in science teaching and learning in Tanzania schools is very dangerous to the nation's development, especially with the science and technological developments which our nation is crying for. It is time now to re-visit our science teaching as the nation in order to attract many students in science education so as to prepare our own scientists for the development of the nation.

This study will focus therefore on the academic performance of the secondary school students in science and mathematics. Bearing in mind that academic performance is very much based on the teaching learning process, it should not be forgotten that, the process is learner centred. This means, it is the learner who decides what to learn, influenced by his/her own interests, motivation, inclinations, self-confidence and curiosity, which all these are based on the type of the attitudes of the learners, being either positive or negative. If a learner is neither interested in what is being taught, nor he/she is not motivated in learning, whatever the physical resources which may be put, may not help the student to learn. But when interested or motivated in the subject, provided with the same physical resources may enhance the students learning considerably. This emphasises the fact that, academic performance inputs are both physical resources and human resources. Human resources in the poor and third world countries like Tanzania and India or let's say, Latin America, are not usually taken into account as having a significant input to the academic performance of their children till today. Majority of them still don't realize that, their good relationship with the school as parents, as a community is a resource of outmost value. Again this depends on their attitudes being positive rather than being negative. This is the reason the impact of attitudes

to academic performance will be also investigated as one of the independent variable. Not only that; attitudes will be observed in the collecting of data, analysing it, up to conclusion. If this happens to be true, the poor countries known as the third world countries which are still not highly developed in science and technology need studies like this one. They would like the study to be a success, so as to reduce this gap with the developed countries at a greater pace than what is now. Letting such a gap to persist between peoples of the world which is being turned into a village, by this I mean people despite of being far away apart, science and technology has brought them very close. It has enabled them to interact and influence each other. Such interaction of people of such a gap of understanding may bring negative repercussions one cannot easily believe.

Thus the research will investigate all possible academic inputs related academic performance, and all possible conditions that contribute to school life conducive to learning and academic performance. The finding will be tested scientifically for their justification. Though the results of the research will be for the targeted research area still I believe, the other areas having almost similar conditions, for sure, will get something beneficial out of it.

Within industrialized countries, much is known about the relationship between schools' material inputs or social practices and the pupil achievement levels. Less is known about school effects in developing countries. In the third world, the secular school is often a novel institution, operating in social setting where written literacy formal socialisation, are relatively recent phenomena. Therefore, when it happens that, even schools with limited material resources appear to have a stronger impact on academic achievement, it points that, there is need for more efficient strategies for raising pupils' academic achievement. I have 60(Multivariate) studies conducted in the third world which supports the idea. Fall (1987).

There is an impact of motivation and students' interest on the students' learning outcomes in mathematics among Secondary school students in Nigeria. Adedeji (2007). And More.(1973).Shortage of qualified mathematics teachers is related to secondary school students' academic performance. Ohuche (1978) and Ale (1989). Poor facilities, equipment and instructional materials affect effective teaching. Oshibodu (1984), and Akpan (1987), and Odogwu (1994) the use of traditional chalk and talk methods is related to academic performance. Edwards and Knight (1994); and Oshibodu (1988). Anxiety is also related to academic performance. Aiken (1970). Feelings of inadequacy, students' personality and self-concept may interfere the learning of science and mathematics. More (1973) and Callahan (1971).

Motivation and self-confidence has a positive influence to learning. Aiken (1976).

Aremu illustrates the factors affecting the teaching and learning of Mathematics as follows: The teacher who discourage, resorts to traditional methods of teaching, the students develop a negative attitude towards the subjects and loose interest in subject. As a result of this, pupils fail mathematics. Aremu (1988).

‘.....Attitudes are deeply related to motivation and social support. We believe that developing strategies in educational context, to improve teacher support and student engagement could be of vital importance in improving, not only attitudes, but also mathematical performance among students throughout their schooling. Loeb and Susan (1996)’

‘Attitudes are mental and neural states of readiness organised through experience, exerting a directive or dynamic influence on individual’s response to all objects and situations which it is related’. (Oyugi 1992); (Allport 1954);’ (Rajecki 1990).

‘Attitudes are more important than facts; it is worth repeating until its truth grips you. Any fact facing us, however difficult even seemingly hopeless is not as important as our attitude towards that fact. How you think about it, you may permit a fact to overwhelm you mentally before you actually start to deal with it. On the other hand a confident and optimistic thought pattern can modify or overcome the fact altogether’. Peale (1988).

Bloom says; “A student who has a successful perception of his or her previous educational experience, will approach a new task with evident interest and consider it as a relevant thing to learn. In contrast, students who believe they have been unsuccessful with related prior task will approach a new task with discomfort”. Bloom (1976).

‘The trouble with statistics is due to non-cognitive factors, such as negative attitudes or beliefs towards statistics. Such factors can impede learning of statistics or hinder the extent to which students will develop useful statistics institutions and apply what they have learned outside the classroom. Students who bring with them a negative attitude towards a course bring with them also potential barriers to learning. Gal and Ginsburg’ (1994).

SIGNIFICANCE OF STUDY

Tanzania is at present experiencing a very serious problem due to the secondary school students, not performing very well in science and mathematics subjects. This is a serious problem to a nation which is positive sure that without science and technology, the nation’s development is almost impossible. Secondary schools are expected to lay a strong

foundation for better understanding of subjects like Chemistry, Physics, Biology, Mathematics and Geography. Poor performance in the subjects, thus may fail the nation to meet the scientific and technological development goals, thus the country's development is jeopardized. If the nation cannot train her own scientists and engineers or technicians, this will simply mean, there will be a shortage of let's say doctors in hospitals and pharmacists, shortage of teachers and professors in schools and colleges. There would be shortage of electricians, mechanics, architects, pilots, and engineers of all sorts in the near future. A nation without such expertise cannot fully depend upon expatriates for her scientific and technological development. These experts from outside can only help to fill some gaps the country by itself cannot fill, and to be something to depend on, only for a short time. The need to train her own experts and patriots in science and technological jobs is so vital and important for the nation's development that something has to be done right now and by everybody in his own way he can, especially in a scientific way to address the problem. There is nowhere else to start, but studying the problem scientifically for feasible and effective measures to be taken. Therefore:

First; it will be a source of knowledge to administrators who might seek for the knowledge on how to improve the Secondary school student's academic performance in science and mathematics subjects.

Secondly; The Ministry of Education policy makers and planners and the administrators, will be in a position to formulate policies with the help of the knowledge of the findings of this study.

Thirdly; the study will contribute knowledge, thus a springboard for further studies.

S T A T E M E N T O F T H E P R O B L E M

The purpose of the present study is to find out different causes of the secondary school students in low performance in science and mathematics. Taking into account the theoretical back ground the present study is stated as: **ACADEMIC PERFORMANCE OF SECONDARY SCHOOL STUDENTS OF TANZANIA IN SCIENCE AND MATHEMATICS IN RELATION TO ACADEMIC INPUTS AND SCHOOL CLIMATE.**

O B J E C T I V E S O F T H E S T U D Y

1. To identify explore various causes responsible for low academic performance of secondary school students in science and mathematics with respect to: Attitudes of students and teachers

- Academic inputs

- Existing Curriculum
- Methods of Teaching and learning
- Patterns of examination and evaluation
- Analyzing different views of teachers regarding the factors responsible for low academic performance of the students in science and mathematics.

2. To suggest remedial measures to the identified problems of the students for better academic performance in science and mathematics.

OPERATIONAL DEFINITION OF TERMS

Academic Performance according to this study is related to the marks and grades obtained by the secondary school student in assignments, tests, quiz, and examinations to assess the learning process of the student, and whether he/she is being transformed to being a product of the quality and the kind designated by the goals set. In most cases the term means, the results of the national form four examination announced by the National Examination Council of Tanzania (NECTA).

Academic inputs include all that is needed to enable a learner to learn all that is required by the academic curriculum. An academic input when applied or supplied yields an output or it has an impact to bring about a result. For example the teaching process in the class is an input; the teaching method is also an input; the assignment a teacher assigns to the class is an input, and anything that will enhance the gaining knowledge, skills or attitudes in one way or another is an input.

School Climate has to do with the characteristics of the school life experienced by its members, and the way it is related to learning. It is a setting or an atmosphere that refers to the internal quality of the organisation of the school. What differentiates one school from another is called organisational climate. It is a set of internal characteristics that distinguishes one school from another and influences behaviour of its members. Thus a school climate is an end product of the school groups – students, teachers, administrators, as they work to balance the organizational and individual aspect of a social system. The end product includes shared values, social beliefs and social standards. It is something like a school personality; which is conducive to learning or which impedes learning.

DELIMITATIONS

The present study will be delimited to 200 secondary school students, and 100 teachers working in 20 secondary schools in different regions in Tanzania.

CHAPTER TWO

METHOD OF PROCEDURE

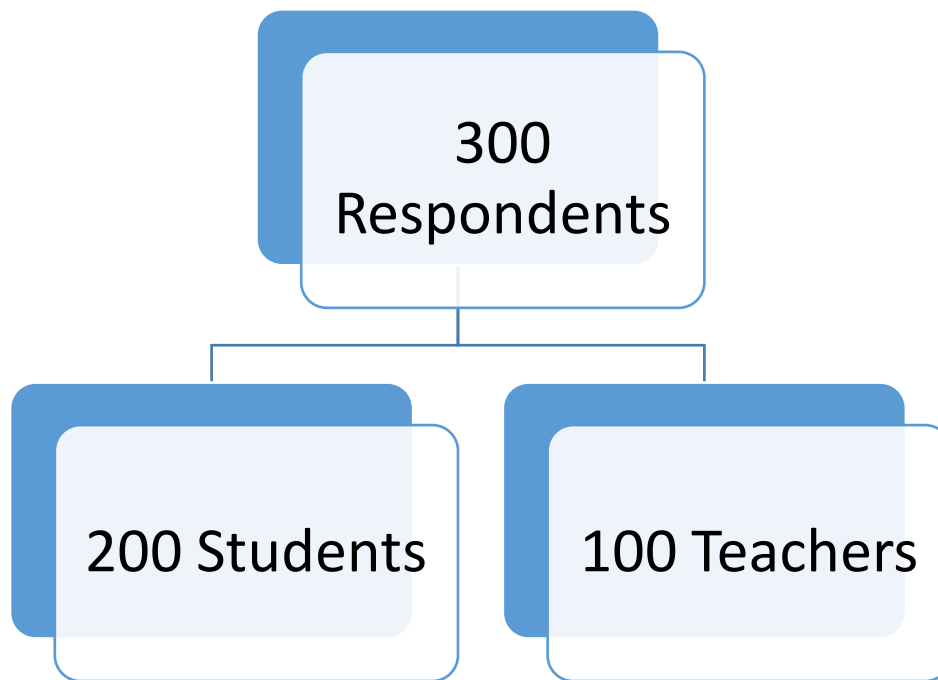
The study is going to employ both qualitative and quantitative or Mixed approach complimenting each other and in the filling of the gaps and social limitations in order to bring up meaning outcomes. The method is focussing on the structure of the problem being studied, the whole plan and the arrangement for collection, measurement, analysis and the purpose of the study. (Merriam 1988).

METHODS OF RESEARCH

It is a descriptive study and survey method will be used by the investigator, because survey method will be helpful for collecting information from existing conditions, situations, and phenomena etc.

SAMPLING TECHNIQUES

All secondary school teachers and students studying in different schools in Tanzania constitute the population for the present study. For the present study, the investigator will select 200 students and 100 teachers from 20 secondary schools by using simple random sampling technique. The classification of the teachers and students as samples are given below:



Sampling of schools

To select the schools for this study, all the schools that data has been collected from different regions of Tanzania will be listed according to the ownership category; that is the Government schools, Private schools, Schools owned by religious faith, mainly(Christian and Islamic). From each of these categories; schools will be selected randomly in turns until the number of schools required is completed. If among the selected, there are no either urban schools or rural schools; the selection of schools will be repeated, to make sure that the sample is representative.

The data of all the teachers from the selected schools will automatically be included in the sample. The sample is expected to include 20 secondary schools; 200 students; and 100 teachers. The students will be required to fill in the students' questionnaires only; and the teachers the questionnaires for teachers only. Students doing science subjects (Physics, Chemistry and Biology) will fill the questionnaire for science students; while those doing mathematics alone will fill in the questionnaires for mathematics students alone. In case a student is doing both subjects he/she is supposed to fill in both. The questionnaire for school climate for students is for all students. The same thing applies for the teachers teaching among the science subjects, will fill in the questionnaire for science teachers including the questionnaire for school climate for the teachers.

TOOLS FOR DATA COLLECTION

For collection of data the investigator has prepared three self made questionnaires separately for teachers, for students. The questionnaire for the school climate for teachers is a special format known as 'The eight dimensions of school climate' questionnaire. The questionnaire is designed to depict the openness of the school organisational climate or the closeness

1. Questionnaires for students

- a. Questionnaires for science students
- b. Questionnaires for mathematics students
- c. Questionnaire for school climate for students

2. Questionnaires for teachers

- a. Questionnaire for science teachers
- b. Questionnaires for mathematics teachers
- c. Questionnaires for school climate for teachers

PROCEDURES OF DATA COLLECTION

Description of work done and plan of action.

A framework for data collection in Tanzania has been laid down online. (By E-mail). After making sure that the questionnaires have been received in Tanzania at all the regions in Tanzania which have been prepared for the job, the work of collecting data will start by early April and is expected to take at least for three weeks. The fourth week is expected to be for the data to be sent to us, so that in the month of May the work of data analysis and the writing of the report commences until the date of submission.

STATISTICAL TECHNIQUES AND DESIGNS

Statistical technique will be employed to find out the representativeness of the sample and the factor which is having the most significant relationship with academic performance of the students in science and mathematics.

For analysis and interpretation of data the investigator will use percentage and their frequencies will be counted. There are some open ended data that will be analysed qualitatively.

REFERENCES

- Adedeji (2007). Impact of Motivation and interest; Students' self-confidence; Students' personality and self-concept; Students' orientation and skill acquisition; Students' feelings of inadequacy; Shortage of qualified mathematic teachers; Students anxiety; Poor facilities, equipment and instructional materials for effective teaching; and the use of traditional chalk and talk methods are some adducing factors on students' academic achievement and learning outcomes in mathematics among secondary school students in Nigeria (as cited in Aiken,1976 More,1973 Callahan,1971 Ohuche, 1978 and Ale,1989 Aiken, 1970 Oshibodu, 1984 Akpan,1987 and Odugwu, 1994 Oshibodu, 1988, Edwards and Knight, 1994) provide a glimpse of the factors having an impact in the teaching – learning of mathematics.
- African Organisation of English-speaking Supreme Audit Institutions, A., 2009. Schoolinspection programme for secondary schools in Tanzania. Available from <http://www.performanceaudit.afrosai-e.org.za/reports/school-inspectionprogramme-secondary-schools-tanzania>.

- Ake, C., (1996). Democracy and development in africa. Washington: Brookings Institution.
- learning and education in Africa – the language factor: A stock-taking research on mother tongue and bilingual education in sub-saharanafrica. Paris: ADEA.
- Aremu (1988). Factors affecting the teaching learning of mathematics: The teacher who discourage, who resort to traditional methods of teaching, students develop a negative attitudes towards the subject and loose interest in the subject. As a result of this, pupils fail in mathematics.
- Artzt, E.L., (1992). The total quality forum: Forging strategic links with higher education. Report of the proceedings. Ohio: Proctor and Gamble.
- Babu, A.M.,1981. African socialism or socialist Africa? . Harare: Zimbabwe Publishing House.
- Best, J. W. (1970). Research and Education: Influence of past events in the data analysis and interpretation.
- Bloom, (1976). Human characteristics and school learning; Belief of being unsuccessful past experience, the approach to a new task will bring discomfort. McGraw Hill, New York.
- Chapman, D. and D. Adams, (2002). The quality of education: Dimensions and strategies. Education in Developing Asia. Manila: Asian Development Bank.
- Cliff, A., M. Nuttal and J. McCormick, (1987). Cited in total quality management in education. London: Kogan Page.
- Cloke, K. and J. Goldsmith, (2002). The end of management and the rise of organisational democracy. San Francisco: Jossey-Bass.
- Cossa, J., 2011. System transfer education and development in mozambique. Journal of Education Policy and Leadership, 6(2). Available from <http://www.ijepl.orgs>.
- Daft, R.L., M. Kendrick and N. Vershinina, (2010). Management. Mason. CENGAGE.
- Dahl, R.A., (1989). Democracy and its critics. New Haven: Yale University Press.
- Daily News Online., (2012). Invigilators cause exam leak. Available from <http://dailynews.co.tz/index.php/local-news/752-invigilators-cause-exams-leak>.
- Fall (1987). Review of Educational Research: What school factors raise achievement in the third world? Vol. 57 No3 p.225-292.

- Gal and Ginsburg (1994). The role of belief and attitudes in learning statistics Towards an assessment framework: The trouble with non-cognitive factors such as negative attitudes or beliefs towards statistics. *Journal of Statistics ducation*.2.(2)
- Harris, A., (2008). *Distributed school leadership: Developing tomorrow's leaders*. London: Routledge.
- Huitt, W. (2001). *Humanism and open education*. Educational psychology interactive. Valdosta, GA: Valdosta State University.
- Legotlo, M. and P.C. Westhuizen, (1996). Coming on board; problems facing principals in developing countries. *Educational Management and Administration*, 24(4): 401 – 410.
- Mbah, S. and I.E. Igariwey, (2001). *African anarchism: The history of a movement*. Tucson: Sharp Press.
- Mbah, S. and I.E. Igariwey, (2001). *African anarchism: The history of a movement*. Tucson: Sharp Press.
- Peale V.N (1988); *The power of Positive thinking: Attitudes are more important than facts*. P. 14&16. Vermilion, London.
- Potter, D., D. Goldplatt, M. Kiloh and P. Lewis, (1997). *Democracy: From classical times to the present*. Abingdon: Polity Press.
- Rajecki D.W,(1990) *Attitudes: shaped partly by parents*. Sinauer Associates Pub. P.4-9
- Rodney, W.,(1981). *How europe underdeveloped Africa*. New York, Howard University Press.
- Salih, M.M.A., (2001). *African democracies and African poli*
- Stronach, I., 2000. *Quality is the key but is education the lock? Turning education around through quality procedures*. New York: Open Society Institute.
- Stronach, I., N.T. Sirca and N. Dimc, 2000. *Ways towards quality in education*. New York: Open Society Institute.
- Tanzania Ministry of Education and Culture., 2010. *Basic education statistics in Tanzania national 2010*. Available from <http://moe.go.tz/statistics.html>.
- Tanzania Ministry of Education and Culture., 2011. *Vision and mission*. Available from <http://www.tanzania.go.tz/education.htm>.
- Tshabangu, I., 2010. *Democratic citizenship education: A qualitative research journey in zimbabwe*. London: Lambert Academic Publishing.

UNDP., 2010. The real wealth of nations: Pathways to human development. Human development report. 20th Edn

UNESCO, 2011. The hidden crisis: Armed conflict and education. Education for all (efa) global monitoring. Available from <http://www.efareport.unesco.org>.

UNESCO., 2005. Human rights education at the heart of quality education. Education –human rights. Available from http://portal.unesco.org/education/en/ev.phpURL_ID=4731andURL_DO=DO_TOPICandURL_SECTION=201.html.

UNESCO., 2007. Executive summary: Education for all (efa) global monitoring report.

UNICEF., 2000. Defining quality in education. A paper presented at the meeting of the international working group on education florence, Italy. Available from <http://www.unicef.org/education/files/QualityEducation.PDF>.