

# Basic Education Alignment for Industrial Economy in Tanzania

Focus on Curriculum, Pedagogy and  
Assessment

Edited by

Wilberforce Meena and John Kalage





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## Preface

Rwekaza S. Mukandala

### Professor of Mwalimu J.K. Nyerere Pan-African Studies

#### University of Dar es Salaam

The 11th Mwalimu Julius K. Nyerere Intellectual Festival, May 20-24, 2019 was organised around the theme *“Pan-Africanism and the Quest for Unity Democratisation and Development: The State, Markets, and Knowledge Society.”* Regarding knowledge society, the festival was enriched by rigorous presentations and conversations on two broad issues.

First, attention was drawn to the criticality of curriculum, learning, pedagogy, methods of assessment and their underlying assumptions.

Secondly, the festival grappled with the core issue of the desired African higher education, and the role of African Universities in generating an African knowledge society. This very welcome publication by our partners, HakiElimu, addresses the first set of issues. The rest of the preface will concentrate on higher education and the role of universities as midwives of Africa’s knowledge society.

Like elsewhere, societies in Africa are undergoing rapid changes, especially in terms of their economic and social architecture and modes of political dispensation. In a nutshell, Africa is experiencing a high rate of population expansion; rapid urbanisation; enduring rural poverty and urban inequality; continued trade imbalance with global partners; emerging pockets of new mineral resource endowments and attendant economic opportunities; and growing difficulties in creating and maintaining stable political systems.

Meanwhile, the global economic and geopolitical context for the development of African societies is changing too, mainly in terms of intensification of global configuration. This situation of rapid changes in Africa’s reality and its global context, calls for constant probing of the kind of future that Africa should aspire for, how to achieve it and the role of tertiary and university education in pursuit of that future.

Past and ongoing conversations on Africa’s development agenda have yielded a fairly clear vision for the Africa of tomorrow. The issue of Africa’s future is well addressed in the continent’s vision for the next 50 years, as adopted by the 2013 African Union (AU) Golden Jubilee Summit meeting held in Addis Ababa. **The Africa We Want**, as subsequently branded by the AU and stakeholders, is an agenda that envisions a continent that is integrated, prosperous and peaceful, and one that is driven by its citizens while representing a dynamic force in the international arena.

Again, as is well known, this broad vision has subsequently been translated into seven main aspirations collectively known as **Agenda 2063**. It includes prosperity based on inclusive growth; economic and political integration; justice and good governance; peace and security; a strong cultural identity and shared values; a sustainable and people-driven development; and a strong and resilient global position.

That higher education plays a critical role in societal transformation is a long-established idea. As Stiglitz and his colleagues note, “central to creating a modern economy is creating a learning economy and society (2012:9). The question that was addressed at the Festival was: What higher education for Africa of the future? Relatedly indeed, what kind of universities does Africa need to realise its vision as mapped in Agenda 2063? By extension, what policy options do African countries have for the development of higher education that would steer societal change in the generation of a knowledge society?

It was clear from the discussions that there was no short answer to these questions, and any idea put forward in response was subject to further conversations and scrutiny at the theoretical level and subject to practical experimentation on the ground. Yet, efforts to address these questions cannot take a course that is profoundly different from past debates on these issues. The long-debated policy options regarding the future of Universities in Africa as it relates to the continent’s development needs will remain central to our discussion. In brief, even as we try to figure out the kinds of universities that would be meaningful in the context of our pursuit of Agenda 2063, we still need to grapple with the age-long issues regarding the direction of higher education development in the continent. These include:

- i. Proper balancing between enrolment expansion and quality improvement;
- ii. Educating for basic knowledge and values, and training for practical and relevant skills,
- iii. Emphasis on scholarly disciplines versus cross disciplinary packaging of programmes;
- iv. Classroom contact versus online learning;
- v. Delivery of knowledge versus social and ideological grooming of students and
- vi. Public versus private investment in universities education;

Proper balancing between enrolment expansion and quality improvement is essential for a prosperous and self-driven continent, as envisioned in Agenda 2063. Africa needs to be a knowledge society, one in which the majority of people have high-quality general and specialised knowledge. Enrolments in higher education institutions in African countries are by far lower than those in other continents. Future Africa will therefore need more universities and more young men and women enrolled in tertiary education institutions. This idea can however only be implemented meaningfully if the requisite inputs in terms of staff, equipment and finances are available. Expansion without due consideration of the costs involved would certainly lead to a drastic drop in the quality of outputs, particularly

in the levels of graduants knowledge and skills and in staff and graduate students' research outputs. It would be far better not to attempt enrolment expansion if the requisite inputs are not assured, than hazarding the negative consequences. Yet there is no gainsaying the fact that much more can be achieved with the same resources available to a particular university at any given moment by improving efficiency in strategic planning and implementation of programmes. This entails optimum utilisation of available human and financial resources, through effective management. It is also a well-known fact that the proper use of digital technology can do a lot in expanding the accessibility of quality higher education at a comparatively lower cost. Yet the question remains of what to do to address the challenges that come with the use of digital technology, the point to which I will shortly return.

Balancing basic knowledge and values and training for practical and relevant skills is another challenge: In the current context, where higher education is globally seen mostly as a development tool, the relevance of African universities is judged primarily in terms of their ability to train young people for requisite practical skills in terms of their ability to train in important economic and services sectors within the respective societies. Universities need to be highly sensitive to the human resources needs in their respective countries as they review their programmes or introduce new ones. They need to remain abreast with important economic and service sectors. Programmes also need to be so designed as to allow reasonable contact between managers in these sectors on one hand and students and university staff on the other.

This is obviously a difficult task, partly because in most African countries these sectors are still at an infant stage, and the managers are still grappling with challenges relating to weak organisational structures and financial limitations. In addition, it is impossible for the currently available attachment positions in Africa's economic and service sectors to absorb students from all universities given the rapidly expanding enrolments.

Yet universities need to do balancing skill development and learning for basic knowledge. This is important because the latter cannot be a substitute for the former. The search for and articulation of basic knowledge has always been central to any university worth the name. African governments and universities should therefore avoid denying staff and students the opportunity to engage meaningfully in knowledge creation, and critical evaluation of existing knowledge. Thus, universities need to maintain a good blend of theoretical engagements and practical training in each programme they offer.

In the field of research, deliberate efforts must always be made to ensure that staff and graduate students are sufficiently involved in both basic and applied research. By so doing, the vision of a society that is driven by its citizens while representing a dynamic force in the international arena will hopefully be realised. The challenge that African universities will have to grapple with in seeking this balance is the limitation of financial and human resources. Like elsewhere, strategic planning and dedication of time and effort will make a difference.

The challenge of balancing traditional disciplines versus inter multidisciplinary and transdisciplinarity needs to be addressed. Teaching programmes in most African universities



are still largely organised along the lines of traditional disciplines in the social sciences; humanities; the basic sciences; and in the professional fields of medicine, law and engineering

The question we may ask is whether there is a need to reconsider the merits of this approach. I would suggest that such reconsideration is now necessary, and this is based on the fact that the challenges facing Africa are multifaceted and therefore, cannot be addressed using knowledge from a single traditional discipline. I understand that the concept of a multi-disciplinary approach is not completely new to African universities.

Many have experimented with a strategy involving designation of one or several courses as compulsory to all undergraduate students. The University of Dar es Salaam has for many years offered a set of compulsory courses in Development Studies for undergraduate studies. For students admitted into social sciences programmes, we have designated a philosophy course on logical argumentation as compulsory for all undergraduate students. Yet I can say in the certainty that the current development and social emancipation needs in the continent demand more creative efforts at packaging teaching programmes for greater relevance and service to society. This is not to suggest that the traditional disciplines be left to die off in favour of newly blended combinations. This would not be sustainable because the traditional disciplines are the basic arena for intellectual inquiry. What I would like to suggest, instead, is that within universities there be programmes that bring together various disciplines for the purpose of creating or articulating bodies of knowledge that are necessary for understanding particularly important sociopolitical phenomena or addressing particular development challenges. The programmes should not confine themselves to research only, but should also give sufficient weight to theoretical articulations through teaching and coursework.

Turning to: Classroom contact and online learning, the use of digital technology in university education and learning has gradually expanded in Africa over the last 20 years. It involves the provision of electronic reading materials such as books and journal articles, as well as online course delivery. While digital technology will continue to influence learning whether we like it or not, education policymakers in Africa have an opportunity to determine the extent to which online learning replaces the traditional classroom contact.

This is important because both delivery modes have advantages and disadvantages. Classroom contact, as we all know, sets serious limitations to the accessibility of higher education because it requires classroom space for every learner and physical presence of academic staff at every contact. Yet it provides excellent opportunities for face to face contact between staff and students, social interactions among students and experience real, as opposed to virtual human relations in communities and at workplaces.

Online learning, on the other hand, is highly dependent on technology and is therefore prone to technological obsolescence; it requires dependable infrastructures such as the supply of electrical energy and up to date computing devices; is prone to the vagaries of the disruptive elements of digital communication; is subject to managerial efficiency in administering; and as pointed out earlier, online learning provides for rapid expansion of student enrolment opportunities for virtual interaction with people and ideas that matter in their studies. Above

all, online learning benefits students through access to the most current learning materials and perspectives pertinent to their respective areas of study.

Given these advantages and challenges, I would argue for a balanced combination of delivery methods. Future African universities should have well designed and administered online learning programmes, on a scale that corresponds to the economic and other requisite resources available to them. It is probably not advisable to venture into adopting a large-scale online delivery mode. This should only happen when sustainable sources of funding for running the mode are secured and assured. Meanwhile, I believe that class contact will remain the main delivery mode for most African universities. However, universities need not retain the old practices associated with this delivery mode, such as the ‘talk and chalk’ method and the use of outdated lecture notes. I think it is now absolutely necessary to diversify students’ learning experiences through the use of multimedia devices in presentations and giving students the opportunity to access digital resources stored at the university or on the internet.

University education traditionally targeted the intellectual faculties and social disposition of learners. With the rise of the industrial society, the development of practical skills has come to the fore as a core objective.

With time, universities’ concern with social and cultural grooming of the younger generations has increasingly diminished. The situation in Africa with regard to cultural and social grooming of students may be said to be worse; partly because of the continent’s colonial heritage and foreign cultural influences emanating from globalisation. As mentioned above, the African Agenda 2063 has meanwhile clearly articulated a strong aspiration for a strong cultural identity and shared values among Africans. African universities cannot pretend to have anything to do with this aspiration. As they contribute to the nurturing of a society that is self-driven and well-positioned in the global arena, African universities must cherish a policy and related strategies that allow them to groom the younger generations socially, culturally and ideologically. They must provide an opportunity for young people in Africa to grow up as responsible women and men, and as people who are fully aware of their identity, their historical roots, and their destiny.

In the last 20 years, there has been a tremendous increase in the number of private universities in Africa and in many instances private universities have outnumbered public universities in quantity. This is a positive move towards the expansion of student enrolment in higher education. Since the development of the higher education sub-sector is a national agenda for all African countries, the increase in private investments is a good example of a positive response to the public-private partnership initiative. However, a glance at the programmes that most private universities tend to offer creates a sense of pessimism regarding the role of these universities.

Except for a few isolated cases, private universities have tended to avoid being comprehensive, preferring instead of putting up a few programmes targeting areas of professional practice with high employability indices at the moment. They have also tended to avoid establishing

study programmes that require high initial capital investment, such as engineering, medicine and basic sciences. This predatory side of many private universities calls for policy initiatives that provide the basic principles for potential investors in higher education to follow, which should at least include the establishment of the basic criteria for the accreditation of universities, both private and public. The noted 'behaviour' of private universities is also a wake-up call for African governments not to depend on private investment in higher education, at least in the short run. They should not relegate their responsibility to strategically plan and establish comprehensive universities that have a high potential to contribute to the respective society's development needs. Governments may also seek meaningful collaborations with the private sector in planning and carrying out strategic measures in improving higher education.

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## Preface

John Kalage

**HakiElimu Executive Director**

### **Knowledge Society: Reflection on Critical Issue of the Relevance of Education for Tanzania's Efforts to become an Industrial Economy**

**HakiElimu**

It was a privilege and honour for HakiElimu to host the second day of the 11th Mwalimu Nyerere Intellectuals Festival where different speakers and participants continued the discussion on **Pan-Africanism and the Quest for Unity, Democratization and Development: The State, Markets and Knowledge Society**.

Having been inspired by the first day remarks, presentations and discussions and in particular, the distinguished Mwalimu Nyerere lecture that was delivered by H.E.Dr. Jakaya Mrisho Kikwete the fourth President of the United Republic of Tanzania, it was a great opportunity to continue the discussion with a specific focus on the **Knowledge Society** and an in-depth reflection and discussion on the critical issue of the relevance of education for Tanzania's efforts to become an industrial economy.

Whilst Tanzania has experienced impressive GDP growth of between 6-7% since the year 2000, this has not translated to a proportionate reduction in the poverty rate for the country's citizens. Still, a staggering 47% of the population live below the poverty line and approximately 12 million people are living in extreme poverty (World Bank, 2016).

The government has been able to deliver positive results in education, including tremendous progress in improving enrollment, largely driven by the implementation of fee-free education. However, several challenges still exist, such as poor learning outcomes, poor quality teaching and gender inequalities. Tanzanian employers are concerned about the quality of education in the country. They argue that a poorly qualified labour force is one of the factors making Tanzania unattractive for business despite its immense economic opportunities. According to the Association of Tanzania Employers (ATE), there is a mismatch between the supply of skills and the demands: vocational training institutes, technical colleges and universities supply graduates whose skills often do not match with the skills often needed by the employers. It is obvious that schools will have to change in order to produce youths who have employable skills.

According to Mwalimu Nyerere, “education should enable the learner to explore his /her environment and enable him/her to cope with the challenges of today.” Reflecting on this statement, we need to ask ourselves “is our education preparing learners for this?”

Many people appear to be sceptical about this. That is why there is an increasing demand for serious reflection on the state of education today. More so on the kind of education and the delivery systems that are required to realise a vibrant and sustainable industrial economy that our nation aspires to be by the year 2025. In fact, there is rising overt and sometimes not so overt discontent with the overall performance of formal education at all levels as many challenges continue to face our education system.

The **Pan-Africanism and the Quest for Unity, Democratization and Development: The State, Markets and Knowledge Society** discussion comes at the right time as it is expected to help the participant to reflect on these challenges and share ideas on how to address them.

As we continued to reflect on the Knowledge Society and in particular on ‘**The Relevance of Education in Tanzania’s Efforts to Become an Industrial Economy**’, there are a few fascinating questions that I feel should engage the discussion:

- Can the current education system realistically deliver our aspiration to build a strong economy through industrialization and achieve the SDG 2030 and Agenda 2063?
- Do the current curricula meet the needs of the individual learners and society at large?
- Are our graduates getting the right skills required by the labour market?
- Furthermore, how valid, relevant and reliable is the current assessment practice at all levels of our education system? In other words, to what extent is the current assessment reflecting actual pupil/student performance?
- Are our teachers technically well-equipped, motivated and committed to fulfil their professional obligations?
- A knowledge society is emerging across the globe. What kind of support is currently provided to enable teachers to support students to develop essential competences?

According to Mwalimu Nyerere, ‘Productive work should become an integral part of the school curriculum and provide a meaningful learning experience through the integration of theory and practice. The importance of examinations should be downgraded’

As the country continues to grapple with so many challenges in our education sector and system, a deliberate plan and strategy need to be in place on how our nation harness the capacity of ICT to ensure Inclusion, Quality and Impact in Education and Training in Tanzania. Many countries across the African continent have started intertwining their education system with the deployment of effective and learner-friendly ICT capabilities.

In the era of Artificial Intelligence, our national plans, interventions and strategies in the education sector should be well informed with the changing global advancement in Technology fitting our context.

The education systems have to develop new and innovative approaches at all levels from government policies to classroom teaching methods and informal learning, with the aim of empowering learners and teachers to adapt to their changing environments. This must be done urgently to achieve the goals set out in Agenda 2063 and SDGs 2030, as well as the Continental Education Strategy for Africa (CESA).

It is my feeling that the Tanzania education system needs to undergo a paradigm shift in order to be able to prepare the younger generation for the industrialized economy and future jobs. What and how we to teach our children today will determine their attitude, values, social awareness as well as skills of tomorrow's citizens. Perhaps, it is the right time to rethink the goal of the education system as a nation.

So many issues to consider, so many questions to ask. The compendium of articles presented and discussed during the 11<sup>th</sup> Mwalimu Nyerere Intellectuals Festival help to re-assess and rethink whether we have the appropriate education system to deliver our ambitious plan to build a strong economy through industrialisation and achieve the SDGs by 2030 and Agenda 2063. The articles included herein i.e. The Road to Industrialization: Relevance of Pre-primary and Primary Curricula in Tanzania.; A reflection on the curriculum issues facing Tanzania as it moves towards becoming an industrial economy; Promoting the use of 21st Century Learner Pedagogy in developing key competencies and Transformative Assessment: A quest to improve learning in Tanzania secondary and higher education contributes to this discussion. It's through education every other SDG finds its premises.

We are grateful for articles contributors. I also appreciate the strength of collaboration of all partners involved in organising the festival. In particular, the University of Dar es Salaam and Mwalimu Julius Nyerere Chair for Pan-African Studies. To these and those unnamed, we express our thanks.

Let's all work together to improve the quality of our education system and sector.

Thank You.

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## Introduction

# Creating a Dialogue: Promoting Relevant Education for Industrial Economy

Wilberforce Meena and Florige Lyelu

### HakiElimu

There have been ongoing discussions on education for the industrial economy in Tanzania since early 2016. The concern is about the relevance of education in preparing students to cope with the social and realities of the industrial economy after school life. However, the issue can be traced back to the reforms in education since 1961 and especially in 1967 when Education for self-reliance (ESR) policy was adopted. The reforms movement intended to connect learning in schools with actual learner's experience out-of-school. In this period efforts were made to align education with national socio-economic vision. The achievement of ESR was noted in some aspects and short-lived for example the link between schools learning and community (Mosha, 1990). Although ESR insisted on downgrading the importance of examination, Mukandala (2019) reminds us that, the general trend shows that learners' success in education emanates from passing examinations and not from their competence and experience upon graduation.

Education can be relevant if it is meaningful and has positive consequences for the learner –be it today or in the future (Stuckeya, Hofsteinb, Mamlok-Naamanb & Eilksa, 2013). According to HakiElimu (2008), the central goal of basic education should be to develop among children a wide range of capabilities that will be of value to them regardless of the particular work and life paths they follow. Literacy and numeracy skills are key to this goal as they are the foundation for learning across all subject areas. Cognitive, personal, and ethical capabilities are critical, as well as, they support the development of one's full potential and the potential of the community.

Following the adoption of liberal market policies in the mid-1980s, national developmental orientation shifted from 'Ujamaa' and commitment to collective responsibilities, to individualism. Educational focus also shifted from preparing learners for life to observable and quantifiable outcomes (Ahmad, Krogh & Gjøtterud, 2014). Therefore, since 1980 ESR is not discussed at the political level despite the fact that it is mentioned in the Education and Training Policy of 1995 and 2014. ESR is considered a great attempt to reconstruct traditional learning and develop locally appropriate education. Efforts to revitalize ESR has become popular among researchers due to the deterioration of the quality of education (Ahmad, Krogh & Gjøtterud, 2014; Mukandala 2019; Samoff, 2019), and therefore it constitutes to the dialogue. In 2017 the University of Dar es Salaam in Collaboration with HakiElimu organized symposiums on ESR. The main objective was to come up with resolutions on how to revise the policy on Education for Self-Reliance.



In this volume, the relevance of education is associated with meaningfulness and consequences that can arise from individual interests and needs, or created at the societal level (Stuckeya, Hofstein, Mamlok-Naamanb & Eilks, 2013). In dealing with relevance of education two questions are central in setting the dialogue ‘Who decides what is relevant?’ or ‘Who decides what our children learn?’ In the other words, who should decide what is a relevant education for Tanzania industrial economy. Different categories of stakeholders are proposed in deciding what is a relevant education, for example, students, parents, teachers, academician, curriculum experts and researchers, policymakers, experts in the area of cultural aspects and economics. The concern is the extent of involvement of these key stakeholders in making decisions on education practice in a centralized system. However, Meena (2009) reveals that most of the decisions about education have been based on political investigation and prescriptions.

In the first article, Subilaga Kejo ( is examining the relevance of pre-primary and primary education curricula as a foundation for learning in higher classes. The main point of departure is the development of essential competencies for human capital in building an industrial economy. Kejo is discussing the relevance of the curriculum in terms of aims and competences. The analysis of curriculum for pre-primary, standard I- II and Standard III-VII indicate that objective statements tend to differ in number and mode in which they are stated. As emphasise is on the development of key/important skills and competences from the early years, these numbers might imply that some of the competencies are not addressed in the lower levels. This confusion of objective statements is likely attributed by the absence of a clear link between the national aims of education and the objectives in the curriculum documents.

In many circumstances, aims, goals, objectives and competencies are set by the state, and therefore as already discussed Kejo calls for the formulation of relevant aims and goals in accordance to the country development vision. In other words, Kejo is questioning the source of objectives and competence found in 2015 and 2016 Curricula. The challenge is that Education and Training Policy 2014 does not provide a statement of aims of education. And this absence raises questions from different stakeholders on ‘What is the focusing of education? On competences, Kejo insists that the curricula have to provide a clear description of the key knowledge, skills and attitudes that are intended. Furthermore, Kejo suggests implementation and involvement of key stakeholders in curriculum issues as areas to be looked critically with regard to relevance.

In the second article Kalafunja Osaki begins with one question. Does industrialization drive curriculum change, or does curriculum change drive industrialization? In answering this question Osaki argues that this is a tricky one because industrialization may happen without government announcement. This is possible once there is increased primary commodity production, there are well trained, creative and educated people (knowledge society), and there are conducive policies for innovation, trade and commerce. However, Osaki argues that for any that nation chooses to industrialize must address the two curriculum issues, first, there is a need to reach consensus on curriculum approach for preparing a nation to industrialize, secondly, there is a need to examine education in a holistic way for deciding the role of formal, informal and non-formal learning. Osaki recalls of several experiences that add value in developing secondary education curriculum for industrialization. Unfortunately, not much is done in utilizing experience gained from various research projects. Osaki calls for more national forums to share findings from such projects.

Curriculum implementation at the classroom level is addressed by Evaristo Mtitu. In his article, Mtitu is proposing ideal learner pedagogy for developing required competencies in industrialised Tanzania. According to Mtitu 21stCentury learner pedagogy requires the teacher and an academic to use pedagogical approaches which promote learner's ability to: acquire rich and comprehensive education; critique the socio-economic, political and cultural practices; communicate clearly and correctly; demonstrate confidence; build the culture of respect and appreciation; make reasoned decisions; think logically and critically; solve problems independently and strategically; critically comprehend and analyse issues across spheres of life and be able to adapt to different living contexts. However, the language of instruction and assessment are considered to have a negative effect in supporting learner to be active in their learning.

In order to build vital and transferable learners' competences Honoratha Mushi proposed the use transformative assessment. According to Mushi the current assessment practice has made students in secondary schools and universities to be groomed on what is to be assessed and how they can most effectively meet the assessment requirements, or criteria that are set by institutions and examination governing boards. Especially, Mushi argues to shift from assessment of learning to assessment for Learning in building learner competences. She says:

Transformative Assessment (TA) in education involves assigning course tasks, activities, tools and strategies that assist learners to acquire requisite competencies (knowledge, skills and values) needed to positively accomplish socioeconomic, cultural and political responsibilities in a manner that enables the achievement of development targets.

Furthermore, Mushi sees a need to transform Tanzania's education practices in a manner that the practices encourage, promote, and support a transformative education assessment agenda or plan at all levels of the system. The transformation agenda considers engagement of different stakeholders who have some stake in the education system. The question of the participatory approach in addressing education issues is covered through this volume.

Finally, this volume provides us an opportunity to reflect on education practice in Tanzania. All articles have revealed a need to rethink about curriculum, assessment and pedagogy. Authors have attempted to suggest practical solutions in promoting education for the industrial economy. We hope the dialogue will continue as our commitment to address pertinent issues in education. To make the dialogue fruitful, we have to be aware of the studies and public concerns that confirm a need to make some changes in all levels of education as argued by John Kalage in his preface.

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# **The Road to Industrialization: Relevance of Pre-Primary and Primary Curricula in Tanzania**

Subilaga M. Kejo

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## **Abstract**

The importance of education in realizing development goals in any country, cannot be overemphasized. At the heart of education is the curriculum that guides the provision of teaching and learning experiences to achieve the stated goals. Of significant importance is the curriculum for education in the early years as a foundation for learning in higher classes. This paper is aimed at contributing to a discussion on the relevance of early years' curriculum in realizing Tanzania's vision of becoming a semi-industrialized middle-income country by the year 2025. In the discussion, five main areas are examined, namely; the curriculum overview, the aims and objectives, the curriculum content, the implementation of the curriculum and the involvement of key stakeholders. Generally, it has been observed, to realize the goals of education, the curriculum approach has shifted from a focus on content to a competence-based approach which is likely to better prepare learners to work in the industrial economy. However, the implementation of the reviewed curriculum is facing challenges due to among other issues, inadequate consideration of other elements of the delivery system like teacher preparation, and adequate provision of resources. Recommendations are provided with emphasis on the appropriate allocation of time and other resources in curriculum development and implementation for successful outcomes in early years and higher levels of education.

## **Introduction**

Tanzania envisions to become a middle-income country with a semi-industrialized economy by the year 2025. As stated in the vision document, the country aspires to become “a diversified and semi-industrialized economy with a substantial industrial sector comparable to typical middle-income countries” (Vision 2025 p. 13). It envisions increased productivity led by modernized and highly productive agricultural activities. The Vision 2025 gives high priority to education as a driving force to realizing the target. It is anticipated that several skills and attitudes along with knowledge should be effectively developed through education in order to prepare Tanzanian citizens in realizing the Vision. The Vision highlights key issues to be addressed in education as follows:

- i. Improve quality of science-based education and enhance ICT skills and capabilities by instilling science and technology culture (as well as Mathematics) from the lowest level of education

- ii. Promote creativity and problem solving
- iii. Promote culture of saving and investment
- iv. Promote culture of hardworking, entrepreneurship and self-development, responsibility, discipline, respect for life. Self-confidence, self-esteem, professionalism, and innovation.

In line with the Vision 2025, the Education and Training Policy (ETP) of 2014 highlights the importance of better education for all Tanzanians. As stated in the Policy's vision, the aim is to have a Tanzanian who is educated and who has acquired positive attitudes that will enable him/her to contribute to the development of the Nation (the United Republic of Tanzania, 2014). The policy further highlights its mission to enhance the quality education provided, at the centre of it being the curricula at all levels of education including the early years.

Education in the early years is essential in promoting the development of foundational skills and hence it has a strong effect in the development of the key skills in human life (Center on the Developing Child at Harvard University, 2011). In efforts to build an industrial economy, therefore, it is crucial that we analyze the relevance of curriculum for pre-primary and primary education. The relevant curriculum at pre and primary levels is of utmost importance as it is further argued that, "All aspects of adult human capital, from work force skills to cooperative and lawful behaviour, build on capacities that are developed during childhood." (The Science of Early Development, 2007, p. 5). This paper is aimed at analyzing the relevance of the curriculum at pre-primary and primary level in relation to developing essential competencies for the human capital in building an industrial economy. It is mainly aimed at contributing to a discussion on the relevance of early years' curriculum in realizing the country's vision. In analyzing the relevance of the curriculum, I will focus on five main areas: The curriculum overview; the aims and objectives, the curriculum content, and the implementation of the curriculum (pedagogy). The paper will also examine the involvement of key stakeholders, which is a necessary element in the curriculum development process. In the following section, I present an overview of the pre-primary and primary curriculum in Tanzania.

### **The pre-primary and primary curriculum: An overview**

The curriculum can be simply described as the total of all the experiences that a pupil undergoes within the guidance of the school. Although curriculum can be described differently by different scholars, this paper takes the definition by Print (1993) that curriculum is "all planned learning opportunities offered to learners by the educational institution and the experiences learners encounter when the curriculum is implemented" (p. 9). The emphasis here is on curriculum as both a prescription (or planned experiences) as elaborated in the written documents and an actual activity (or real classroom experiences) as guided by the teachers.

The curricula for pre-primary and primary level have been undergoing minor and major reviews. The recent reviews of 2016 were aimed at incorporating the directives as stipulated in the 2014 ETP and the outcome for primary level are three curriculum documents: Pre-

primary curriculum, Basic Education Curriculum for Standard I and II, and Basic Education Curriculum for Standard III-VII (Ministry of Education, Science and Technology - MoEST, 2016). These curricular frameworks are expressions of the intended curriculum and which guide the development of other curriculum documents such as syllabus. The focus of the curriculum as provided in the three documents is as follows:

*Pre-primary*: competences in early literacy and numeracy skills in preparation for primary school. Additionally, the emphasis is on other areas including self-awareness, personal care, imagination, arts, communication, logical thinking, health and environment.

*Standard I – II*: reading writing and arithmetic and competences in academic subjects as preparation for higher levels

*Standard III – VII*: competences in academic subjects

In addition to stated competencies for each level, the curriculum highlights cross-cutting issues that are integrated into the subjects at different levels. As the country follows a centralized system of curriculum development, designing of the curriculum is done centrally by the Ministry responsible for education, through its institution, the Tanzania Institute of Education. School from all parts of the country are obliged to use the same curriculum documents and materials developed and approved by the Ministry.

Although in this centralized system of curriculum it might seem easy to determine if the national aims and objectives of education are attained across the country, this system of education can be disadvantageous. The curriculum content might not be similarly relevant to all contextual situations in a large country with a dispersed population, like Tanzania. As the academic subjects in the primary curriculum are centrally formulated, the schools are required to teach all the subjects as directed by the curriculum. However, subjects or some content in the subjects might be relevant in some geographical areas but not in others due to differences in the socio-cultural as well as geographical features. Therefore, instead of leading to effective attainment of the aims and objectives, this similarity may be a hindrance. It is for this reason, some countries have adopted a mixed or blended mode of both centralized and decentralized approaches. In Finland for example, while the national curriculum framework is developed centrally, schools are given authority to develop their localized curriculum while guided by the national framework (Parsons & Beauchamp, 2012). This way the attainment of the goals is ensured through the provision of learning experiences that are relevant to the learners' context.

Unfortunately, no such example can be cited from any country in the African Region. Although decentralization in education sector seems to progress in some countries, the focus is mainly at the transfer of administrative authority from the national to the local authority (Naidoo, 2002). Teachers in these countries are given limited opportunity to participate in curriculum designing mainly due to their low expertise (Abudu & Mensah, 2016). In analyzing the curriculum, it is also important to examine the approach in which the curriculum is designed, and that is the focus of the next section.

## **Curriculum approach**

The Tanzanian curriculum has undergone major reviews, which have involved a paradigm shift from a focus on the content of the subject matter to learners' competences. The change was demonstrated in the 2005 syllabi in which the emphasis is on competencies that students gain after going through educational experiences. Concerning lower levels of school, the focus on competence-based approach is emphasized in the 2014 ETP aiming to enable pre-primary and primary school learners to demonstrate the attained knowledge through the performance of tasks. As emphasized by the UNESCO-IBE (2013), competence-based approach implies not only acquisition but also application of knowledge and skills in daily life.

Now, one may ask, what was the motivation for the shift to competence-based curriculum in Tanzania? As described in the curriculum frameworks, the change in pre-primary and standard I and II in 2015 is a response to research findings that revealed very low competences in literacy and numeracy skills for learners. The aim was therefore to enhance learners' development of competences in reading, writing and arithmetic. Additionally, a curriculum for primary school Standard III to VII was also reviewed accordingly. It is important to effectively develop these skills to achieve the competencies necessary to attain the vision 2025. Generally, the anticipation in curriculum change was that the quality of the attained curriculum would be enhanced and that there will be an improvement in learning outcomes.

As the curriculum takes a competence-based approach with a focus on building competences (knowledge, skills and attitudes), emphasis on all key components should be shown. Within the competence-based approach, a curriculum is expected to clearly outline/provide a learning framework of the knowledge, skills, and attitudes that are to be developed. However, in the curricular for pre-primary and primary education, there is no clear description of the key knowledge, skills and attitudes that are intended. The list of competencies for each level seems to focus mainly on the discipline knowledge and cognitive skills. For the relevance of the curriculum, the content elements should be identified as focused on each of the components: Knowledge, Skills, and Attitudes. An example of a model is provided in the recommendations.

## **Curriculum aims and objectives**

As we envision a country with an industrialized economy, and with the understanding that education is the key driving force to reach the target, we need to have clearly stated objectives in line with the competencies we need to develop in the children. Together with the general aims of education, there are competencies or statements of outcome which are aimed at for each level. In the three curriculum frameworks analyzed, there seems to be a variation with regard to the intended competences which may bring ambiguity on what the education aims to achieve. To get an overall idea of what the Tanzanian curriculum is aimed at, one has to go through the statements in all the three documents. The intended competences as outlined in the curriculum documents are as follows:

### *Pre-primary Curriculum*

This Pre-Primary Education Curriculum intends to develop the following competences: (MoEST1, 2016, p.4)

- Ability to relate to each other;
- Ability to communicate;
- Ability to care for his/her health;
- Ability to care for the environment;
- Mastering artistic skills; and
- Applying mathematical concepts

### *Basic Education – Standard I – II.*

The curriculum is intended to help the pupil to: (MoEST2, 2016, p.2)

- Develop Reading, Writing and Arithmetic skills.
- Practice simple communication.
- Maintain health and hygiene.
- Build physical fitness and cooperation with others.
- Adopt a positive attitude towards learning.
- Care for the environment.
- Have self-awareness and develop talents.
- Acquire social conduct and behavior.
- Grow spiritually according to the pupil's faith.

### *Basic Education – Standard III – VII*

Competences in Basic Education aim at preparing the pupil in Standard III to VI to do the following: (TIE, 2015; MoEST3, 2016, p. 6)

- Communicate correctly in Kiswahili and English orally and in writing.
- Read confidently and understand specified texts.
- Use theoretical and mathematical principles in daily life situations.



- Apply scientific, technological and vocational skills in real life situations.
- Appreciate his/her culture and that of other communities.
- Respect the diverse beliefs and ideologies of the community in which he/she lives.
- Participate in games and sports and artistic activities.
- Respect oneself and others.
- Perform patriotic activities.
- Participate in different activities which are in line with his/her age.
- Participate in activities which enhance his logical and analytical thinking, and
- Collaborate with other people when performing acceptable activities in the community.

It is evident from the statements of intentions as stated here, that there is a discrepancy in number and modality of how the statements are made. For example, while the curriculum for pre-primary has six intended competencies, the curriculum for standard I – II has eight, and that of Standard III-VII has twelve. Now, why can this be an issue? As we emphasize on the development of key/important skills and competences from the early years, these numbers might imply that some of the competencies are not addressed in the lower levels. In addition to that, the objectives are observed to be stated differently, some of them in a more detailed form. For example, one objective of the pre-primary curriculum (Number vi: *applying mathematical concepts*, which possibly involves logical thinking) can be related to two objectives of the Standard III-VII curriculum (Number iii: *using theoretical and mathematical principles*, and number xi: *participating in activities that enhance logical and analytical thinking*).

The challenge discussed here in relation to objective statements could be resolved by having a list of curriculum objectives that are directly linked to the aims of education. The aims, which are purposes stated in general form, should reflect the vision of the country. These were supposed to be derived from the policy of education, and translated to the goals and objectives for particular levels as well as be utilized in selecting and organizing the content. However, the ETP (2014) does not provide a statement of the aims of education. And this absence raises questions from different stakeholders on what generally our education aims at producing. With a clear development vision of the country, we need stated aims that are relevant as well as relevant goals as a translation of the aims, which are later, translated into instructional objectives. However, as (Noddings, 2007) cautions, translation of these aims should not be confined to specific subject disciplines, but rather all teachers should be aware of, so they can translate them not only in teaching but also in their other responsibilities like classroom management. With statements of aims, goals and objectives, there should also be curriculum content that is relevantly organized, and that is what is discussed in the following section.

## Curriculum content

How do we determine relevant content for learners? While traditional curriculum models have shown an emphasis on the inputs (academic subject, content knowledge), the current trend shows a shift towards outputs or learning outcomes (UNESCO-IBE, 2013). The main difference between the two categories is the emphasis on content and development of competencies, respectively. Given the trend, three ways that curriculum content can be determined are outlined below (UNESCO-IBE, 2013):

**Learning Content-Based Approach** – Content organized into disciplines (subjects) within which topics are taught in sequence in order of difficulty. It can also be organized in themes through an interdisciplinary approach

**Learning Objectives-Based Approach** – The emphasis is on behavioural objectives and learning is determined by learners' change in behaviour.

**Competence-Based Approach** – educational discourse has increasingly featured competencies due to concerns on the relevance of education and the need to address social demands. The focus on this approach is not on subject content but rather developing knowledge and skills that are required to accomplish a particular task. Competence can be defined as the ability of the learner to mobilize both cognitive (knowledge, skills) and non-cognitive (attitudes, values) to complete a task or resolve a problem linked to a particular subject.

Although the current trend shows the shift towards a focus on competence, the content-based approach is still prevalent. The curricula for pre-primary to standard II, have adequately framed the content in competencies to be developed by learners. The curriculum content for standard III to VII is organized into subjects but for each subject, s to be developed are outlined. The effort in reviewing the curriculum documents is highly commended. However, concerning adequate implementation of the curricula, that is a question to be researched. A discussion on implementation is forms part of this paper in the later sections. Further discussion on curriculum content for pre-primary, primary I – II and primary III-VII follows.

### *Curriculum for Pre-primary Education*

In the pre-primary curriculum, six learning areas are outlined with a coverage of intended knowledge, skills and attitudes in preparation for primary education. The areas are:

- Personality, Social and Emotional development.
- Language, Communication and Literacy development
- Creative, Expressive and Aesthetic development
- Mathematical and Logical thinking development
- Health and Physical Development

- Development of Environmental awareness

The curriculum has successfully highlighted the key areas of competences which are to be developed in the first year of schooling. A good number of aspects highlighted in Tanzania's vision document are addressed for example mathematical thinking, problem-solving, creativity, responsibility, discipline, and confidence. The curriculum is organized into competences with a specific focus on developing early literacy skills. I find the content appropriate for the level of education and it relates to the goals of education for pre-primary level as stated in the curriculum. The activities and assessment criteria portray how competence would be developed and assessed. Furthermore, the pre-primary syllabus puts the learner at the centre of the teaching and learning in a way that the activities that are recommended for developing the competencies are performed by the learner.

On the other hand, observing our curriculum, one might notice that the list of skills and attitudes to be developed is not exhaustive enough. And here, I don't mean to imply that all skills can or need to be covered at this level, rather, I think that there is a need for a thorough exploration and basing on the country's vision, to come up with a more exhaustive list of required skills, attitudes and values to be developed in the early years. Areas that need to be emphasized in relation to the country's vision, is Science, Technology, Engineering and Mathematics (STEM). As with the other areas, the curriculum needed to emphasize the nurturing of children's STEM capabilities as preparation for later development in the higher levels of learning. Although creativity is emphasized in one of the learning areas in the curriculum, there is also a need for a focus on the development of inquisitiveness and innovativeness as key aspects of STEM. Creativity, innovativeness and inquisitiveness are the three main ideals that promote STEM (Nadelson et al. 2013). It is recommended that curriculum reviews incorporate these and other identified key skills.

Concerning the target group, the age range that the pre-primary curriculum is aimed at is an issue of concern. The curriculum is targeted for children aged 5 years, and it is to be offered for not less than one year as stipulated in the ETP of 2014. However, as the policy stipulates, 3 and 4-year-old children who demonstrate readiness upon early assessment might also be enrolled in the pre-primary class. The curriculum states the criteria that will guide the assessment as: being independent, ability to express him/herself and following simple instructions. Two issues might raise concern on enrollment age. Firstly, it is not certain as to whether the allowance of 3 and 4-year-old into the school is informed by research. This is not an ideal age for enrollment in a formal school. Children of this age might be still in need of more care (at home or daycare centres) rather than being enrolled in school. At age 3 to 4 years, children need to learn from the environment they live, through parents and other caregivers in a non-structured routine mode. They need more time to experience the environment before they are enrolled in a classroom context. The leading activity that guides children learning at this age is free to play (Bodrova & Leong, 2006), and this is not likely to be effectively provided in the school context. Secondly, although the criteria for the assessment of the child's readiness are provided, it is not clear as to what will be the indicators for each criterion. The three criteria as provided in the curriculum are:

- i. Ability to be independent;
- ii. Ability to express him/herself; and
- iii. Ability to follow simple instructions.

These criteria are not adequately provided but need a further description to facilitate the implementation. Not including indicators for the criteria, gives the liberty for the schools/teachers to set their own. However, liberty may lead to discrepancies due to contextual variations in the definition of some concepts. As an example, the definition of ‘independence’ might vary from one individual to another, or from one societal area to another. This lack of clear statement might lead to inconsistencies in policy implementation leading to challenges in achieving the aims of education. It is recommended that policy review should consider 5 years as a fixed age to be the only entry requirement for children joining the pre-primary school. Having children with a similar age in class will also facilitate the provision of teaching and learning activities.

#### *Curriculum for Basic Education Standard I and II*

The curriculum for standard I and II is a continuation of the focus in literacy and numeracy skills, as introduced at the pre-primary level. This reviewed curriculum adopted a different approach from the previous one which introduced subjects from standard I. The competences for Standard I and II curriculum are divided into two major areas: 3R’s competences (Literacy and numeracy skills: reading writing, and arithmetic) and supportive skills (aimed at the child development in other areas). The emphasis on literacy and numeracy skills in the first two years is vital for children’s development and hence facilitating their learning in higher classes. It is important to give children enough time to practice and master these essential skills. Although developing a strong foundation for literacy demands time and exposure to literacy culture at home and at pre-school, the first two years of primary school are crucial in enhancing the skills. It is at this time when compensation can be made for any possible gaps in exposure to literacy learning due to children’s background especially because some of the pupils do not get the opportunity for pre-primary education.

The focus on literacy and numeracy skills has also addressed the challenge on the previous curriculum with regard to content overload. The previous curriculum required the teaching of seven subjects at Standard I and II and this was observed to be a burden to both the learner and the teacher (Mmasa & Anney, 2016). According to the authors, the content load in the subjects led to challenges in the teaching of literacy skills and hence students’ failure in mastering the essential skills. The 2016 curriculum has successfully shifted the focus from the emphasis of the subject content to the literacy and numeracy skills. The curriculum does not demand teachers to teach content areas subjects but rather concentrate on the development of literacy and numeracy skills.

Learning areas addressed in the pre-primary curriculum are the foundation for higher classes and so one would expect to see the essential areas of learning developed through different levels. However, some areas for example personality, social and emotional development

are not included in the Standard I and II curriculum. Excluding these areas from a list of learning areas shows that they are given less emphasis and so they might not be addressed in the teaching and learning process. The learning areas focus on several skills and attitudes that are relevant to the country's vision and so they must be developed across all stages of schooling.

### *Basic Education Curriculum Standard III - VII*

For primary education (Std III to VI), the curriculum content is organized in competences within academic subjects with an intention to coverage of key content areas namely: language, social science, health, science and technology, mathematics, arts and religion. The learning areas are used to make seven subjects for standard III – IV and eight subjects for Standard V -VII. It should be noted that at the time this paper was being written, changes had been made to include Standard VII which was not included when the curriculum document was released in 2016. Besides, there are optional language subjects and co-curricular activities outlined. Also, there are 14 items of cross-cutting issues which are either integrated into the subjects directly in the syllabus or are to be addressed during the teaching and learning process. The cross-cutting issues include HIV and AIDS, road safety, environmental education, child's rights, life skills, gender education and financial management. Others are issues on globalization, peace education, drug abuse, corruption and reproductive health.

Although the curriculum frameworks highlight competences to be developed, the curriculum at this level demonstrates content organization through traditional subject boundaries. To shift to development of competences on problem-solving, Deng (2015) recommends a more integrated approach that suspends subject matter organization. In the integrated approach, issues or problems drawn from are drawn from different academic disciplines and other sources with aim of capacitating learners in solving real-life problems. As Loepp (1999) asserts, an integrated curriculum is likely to improve the relevance of education, which can be a problem in the subject focused curriculum.

In Tanzania, the integrated curriculum has been developed but it does not seem to be positively taken. Some of the integrated subjects met criticism and had to be separated during different phases of curriculum review in Tanzania. Science, for example, used to be an integrated "General Science" subject in secondary school curriculum until 1976 when it was broken to Physics, Chemistry and Biology. Later on, two science subjects (Physics and Chemistry) were combined to form Physics with Chemistry, but these were separated again in 2006. Likewise, in the primary school curriculum, Social Studies subject was separated to History, Geography and Civics, in 2006 curriculum review. However, in 2016 curriculum Social Studies subject forms integration of History and Geography while Civic and Moral education stands alone. These changes were made following government directives and stakeholders' views. Although the reasons for the changes might vary, I find it important for subject curriculum specialists to conduct more research on the integration in relation to our context, to inform the decisions made.

Furthermore, the emphasis demonstrated on the curriculum for previous levels: on the development of literacy and numeracy, is not seen in the curriculum for Standard III and VII. Literacy and numeracy are addressed in only two subjects: language and Mathematics subjects but it is not stated how it can be emphasized in other subjects. For more effective learning in all areas, the emphasis has for a long time has been that literacy should be taught across the curriculum (Bruce & Wasser, 1996). The authors argue that continued efforts in developing literacy in the different disciplines will facilitate a deeper understanding of the content taught hence attaining the goals. Different approaches can be used to integrate the teaching of literacy and numeracy into the curriculum for a better outcome. The curriculum should therefore highlight the importance of this integration by emphasizing them as among the key s in subject objectives of the syllabus.

### **Participation of key stakeholders**

Another area that should be critically analyzed with regard to relevance of the curriculum, is the involvement of key stakeholders in education. Studies have shown parents involvement in education of their children is beneficial in realizing the goals of education (e.g. Morrisson, 2009). However, the extent of parental involvement is questionable. Although, the current practice in Tanzania involves selection of a sample of parents, among other stakeholders, as participants during research to collect stakeholders' views, parents feel that they are not adequately involved as very few get that opportunity (Kihumbe, 2015). It therefore questionable as to how many (in terms of percentage) parents get opportunity to participate during the designing/review process? It should be noted that not all parents have expertise in education issues and so cannot be fully involved at the designing stage. However, it is important that they are sensitized about the contents of the curriculum so they can fully participate in its implementation. Consequently, most of these parents are not likely to be familiar with the syllabus used in their children's classes. If the parents are not familiar with the curriculum, they are not likely to participate effectively in enhancing learning and development of their children.

Although parents are not the only stakeholders to be involved, my reason for the emphasis is their significant contribution to children's learning. As study conducted by Dowd, Pisani, Dusabe, & Howell (2018) reveal that parents and caregivers are influential in shaping the children's learning opportunities when children are not at school). They further identify that pre-primary children spend 76% of their daily time out of school and hence parents are instrumental in creating appropriate learning opportunities during that time. With regard to this central role of the parents, it is crucial that they are knowledgeable of the curriculum content. Dowd and colleagues further assert that, regardless of their education level, parents can contribute in enhancing meaningful learning and hence curriculum relevance through engaging them in activities as in given examples:

“Simple additions to daily tasks can transform children's chores into teaching moments: helping with cooking can apply maths by counting vegetables or measuring ingredients; or expand vocabulary with a discussion of where each vegetable comes from or how and where it grows”. (p. 2)

Although the examples given are focused on pre-primary children, the important role of parents applies similarly at primary level. The foundational and other skills as well as competences emphasized in the curriculum, can be effectively developed in children through cooperative efforts, by providing relevant experiences both at school and at home. Recommendations on effective parental involvement as well as on other issues discussed in this paper are given in the following section.

## **Conclusion and recommendations**

This paper is aimed at contributing to a discussion on the relevance of curriculum in addressing Tanzania's vision of building and industrial economy. The paper has highlighted some few aspects about curriculum objectives and the content of the curriculum. Besides, implementation of the curriculum and participation of parents have also been discussed. The following are conclusions and recommendations that can be made from the discussion.

Three curriculum frameworks have been discussed and the main feature observed is the shift from content-based to competence-based curriculum, to improve meaningful learning and enhance learning outcomes. The reform has led to emphasis, in the curriculum for pre-primary and standard I and II, on development of literacy and numeracy skills. However, the curriculum does not seem to provide for flexibility and responsiveness to different types of learners including those with special needs. Appropriate support for in literacy and numeracy for learners falling behind curricular expectations are beneficial (Rose & Alcott, 2015). It is also important to provide appropriate support for other groups of learners like fast learners, slow learners and those with disabilities. To ensure learning for all, it should be stated in the curriculum on how it responds to varied learners' abilities. If well addressed in the curriculum, appropriate interventions can be featured and used in the classroom context.

Due to the centralized system of curriculum development that Tanzania follows, curriculum relevance may be affected. As the same curriculum is implemented in the varied locations of the whole country, some aspects of the curriculum might not be applicable in some contexts. A proposed solution strategy for this is to have a mixture of both centralized and decentralized system whereby the curriculum framework and the syllabus are developed centrally that is by the Tanzania Institute of Education under the Ministry of Education. With all the materials developed, the schools should be given the authority to draw from the curriculum and select and prepare learning experiences and use instructional methods that are more localized in nature while addressing the purposes outlined in the curriculum. The schools can also be given authority to select textbooks that are relevant to their context. It is important to remember that the books will differ in the presentation of the content and learning activities but the preparation will focus on the competencies outlined in the curriculum. It is therefore not likely that this system will affect the administration of the assessment of learning at the national level.

The freedom in the selection of books in Tanzania has been previously practised from 1992 but it was stopped in 2014. However, the practice did not mean the books differed according to the context, but rather, the choice of the book was based on availability. This

system (a mixture of both centralized and decentralized) has been effectively implemented in countries like Finland where schools have authority to develop their own curriculum from the national curriculum frameworks (Parsons & Beauchamp, 2012). Models from different countries like Canada and Australia may be studied, to come up with a model that will be applicable to our country.

The curriculum documents for pre-primary, Standard I and II, and Standard III – VI, each has a set of curriculum objectives and competencies to be attained. The competences and objectives have addressed some of the aspects that are outlined in Tanzania's Development Vision 2025 as key in realizing the targets. However, some of the general curriculum objectives are not clearly stated and hence one may fail to understand what kind of citizens the curriculum is aimed to prepare. It has also been observed that in some objectives there is lack of continuity of what is aimed at in one level to another. Lack of clearly stated objectives, continuity in the current curriculum is an indication that there is need for reviewing the curriculum. It is recommended that in reviewing the curriculum, a set of curriculum objectives that cut across all levels be clearly stated, to portray the kind of outcomes expected.

Concerning the content, it has been noticed that the curriculum takes a -based approach. However, within a competence-based approach, it is crucial to delineate the core competences, as well as required content which is a focus of the curriculum. The key elements may be described in the following aspects:

Core competencies: these can be all cross-curricular abilities that the curriculum aims at developing at all levels of education can be divided into three categories the intellectual, personal and social-emotional proficiencies. This will ensure that all the competencies required to attain the country's vision are addressed.

Learning areas: these are subject areas that cut across all the levels. They are broad areas under which for every level of schooling there will be curricular competencies and relevant content.

It is anticipated that these two components will comprise a comprehensive list of all competencies to be achieved across the curriculum and in each level of education.

Implementation of the curriculum is another key area discussed in this paper. As it has been observed, the intentions may be well stipulated in the curriculum documents but for efficiency in the attainment of the objectives, appropriate implementation is crucial. Teachers as key implementers have a major role to play on the implementation. As it has been pointed out, one of the main challenges in implementation of the curriculum is teachers' competence. To address this issue, teachers need to be well trained on child development, and the curriculum content and pedagogy. It is also important to enhance teachers' lifelong learning skills. curriculum for teacher education both in teachers' colleges and in Universities, need to have adequate coverage of content relevant to the particular level and the pedagogy involved with the school curriculum as the main document of focus. For the teachers who



are in service, various in-service professional development programs are being conducted by different non-governmental organizations education partners in the country like Right to Play, Equip-T, and UNICEF. These programs are found to be beneficial in enhancing teaching skills for the teachers who participated. However, if the Ministry of Education would coordinate the various partners and cooperate with them in providing the training, and scale up to reach the whole country to provide in-service training, and/or orientation to curriculum, the competence of many teachers will be enhanced. In addition to the provision of continuous professional development, the wellbeing of teachers is of utmost importance in supporting curriculum implementation. Enhancing incentives and conducive working environment for teachers should be a priority to improve the quality of education provision in the country.

To enhance the relevance of the curriculum, there is a need for a mechanism to involve parents more during the designing of the curriculum, if more parents get an opportunity to give their inputs, they will feel ownership and will effectively participate in achieving the goals. This could be done by disseminating the curriculum draft to schools and then on parents' meetings where the draft could be presented for parents to give their comments. Ward Education Coordinators are the right people to conduct and coordinate the dissemination. With assistance from the Heads of Schools. At the Ministry responsible for education, an appointment should be made for someone responsible for coordination curriculum dissemination to all stakeholders. Also, different strategies should be put in place to sensitize the public on the importance of participating in the education of their children. Sensitization should involve familiarization of the curriculum to the public and creating awareness to the parents about different ways they can collaborate with the teachers and the schools in general. This can be done through organized training in different areas, and/or the use of public media. These plans should educate parents and caregivers on how they can support children's learning at home. On the other hand, parents should be encouraged to participate fully in the teaching and learning of their children. One of the ways that teachers may encourage the parents' participation, is through engaging them in various ways including preparing teaching aids. Effective involvement of the parents has significant contribution towards effective implementation of the curriculum and hence realization of the goals.

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# A Reflection on The Curriculum Issues Facing Tanzania As It Moves Towards Becoming an Industrial Economy

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## Abstract

In this paper, we reflect on the concepts of curriculum *relevance*, in an era of industrialization, with a look at labour market needs, quality of curriculum provision and standards of implementation and performance with a focus on Tanzania. It will examine the research available on knowledge, skills and values that can be offered at the secondary education level in an industrializing nation, and what has been offered in Tanzania up to now. Finally, we will address the challenges we face as we move from the transition to take off towards industrialization and what secondary education curriculum designers and implementers can do to address them. The paper proposes a review of key curriculum policies to support the diversity of curriculum options, including provisions for basic science for all while specialized science is offered for those with interest and ability, use ICT to build capacity for analytical and reasoning ability, strengthen knowledge of local and international history as well as creative arts, drama, and music, provide options for technical, vocational education, and strengthen moral education and teacher education for all these areas. We also propose the need to encourage active learning, critical thinking and creativity among school leavers instead of being obsessed with banking of knowledge. We propose to reduce the emphasis on the ranking of learners and institutions and adoration of certificates, and instead encourage competency and honesty. Since industrialization is changing drastically and there is increased link of production to Information technology and automation, educators must reflect to design and test new approaches and materials that promote a change to these emerging paradigms.

## Context and purpose

In this paper, we will briefly address the concepts of curriculum relevance, industrialization quality, and standards as applied to Tanzania today and also the issue of the *market* and its nature in relation to education. Any discussion on curriculum issues must address three levels: First is the *Intentions of providers* namely ideal political visions and goals, and written or mandated curricula and syllabuses, second is the *Implementation arrangements*, namely curriculum perceived and designed and experiences offered such as textbooks and other learning resources including trained teachers and managers and their operations, and thirdly *Attainments of curriculum* including experiences received by learners, and the outcomes in

terms of capabilities of those completing the curriculum (Van den Akker, 2003). In an article published in 2012, Osaki (2012) defines relevance, quality and standards. *Relevance* depends on how well the system serves existing national visions and helps learners acquire basic knowledge and skills they need to function in the society. *Industrialization* is a process of moving from agrarian and commodity-based economy that produces and sells primary (or raw) commodities, to one that depends on manufacturing and selling finished products. An education system based on primary commodity production is usually based on training people to engage in primary productivity such as agriculture, mining, logging, hunting, fishing and such activities which produces semi-finished goods for sale to the global market where they are processed for re-sale elsewhere after adding value. School curricula teach about soil fertility, farming, mining, hunting, fishing or woodworking and also cooking, sewing, carpentry and so forth. In an industrializing economy, learner is prepared to process goods and sell services. They are trained to be technically competent, creative, efficient, and critical thinkers and decision-makers. This is because they are not expected to be employed by the government and also not to have fixed skills but instead flexible thinking and ability to learn new skills in a changing world. The *quality* of education depends on the available inputs including capitation (funding), a rich learning environment and infrastructure, as well as an efficient implementation of existing philosophies and policies through effective teaching and training, promoting meaningful learning, management of institutions and resources, effective use of time, and observing assessment and evaluation practices that promote tangible outcomes. The *standards of implementation* will determine the standards of outputs of learners and learning outcomes (knowledge, skills, values) and this will in turn feed the labour market. The needs of the labour market (through employers or civil society organizations) may feedback to the education system and re-define standards such that a revision of the vision and policy of education, and require a change in the manner of delivery of education. This is what happens in all advanced societies.

#### *Industrializing and industrialization: What triggers it?*

Industrialization is a process whereby an economy moves from a subsistence mode of production, aimed at primary commodity production to specialized manufacturing of finished products that add value to the commodities. It may have several stages, including pre-industrialization, early industrialization, late industrialization and post-industrialization.

During the 1960s, Rostow (1960, 1962) described five stages of economic development as a country moves towards industrialization. These include:

- i. Traditional society-characterized by subsistence economy, barter trading and agriculture-producing mainly for local consumption
- ii. Transition: characterized by specialization, surpluses, and growing infrastructure;
- iii. Take off: focusing on industrialization, investment, regional growth, political change.
- iv. Drive to maturity: characterized by diversification, innovation, less importation, increased investment high mass production: has high consumer orientation, durable goods, service sector improvement.

- v. High Mass production: has high consumer orientation, durable goods, service sector improvement

Box 1: Singapore: Area: 433 Square kilometers Population: 3 million people (Ping Zhou, 2018).

1950s: Exporter of raw materials & distributor of manufactured goods from industrialised countries etc. High population growth, unemployment.
1961-4: Peoples Action Plan, supported by World Bank and UK, after analysis of national situation.
1965: Separates from Malaysia; develops political stability under Li Kuan Yu
1972: 30% foreign owned industry and joint ventures with Japan, US
Human resource development by revising secondary education curriculum, creation of technical institutions to train workers in: ICT, petrochemicals, electronics, run by multinational corporations and employed by them.
Rest of the graduates: enrolled in labour intensive untradeable services e.g. tourism, transport. . . etc.
Exports in the 1970s: textiles, garments, electronics
Exports in 1990s: water fabrication, logistics, biotech research, pharmaceuticals, aerospace engineering. . . etc.
Today 2015: ultra-industrial society, export trade, trans-shipment, tourism. . . GDP 300 Billion, life expect. 84

Critics of this model have argued that it is based on the glorification of western capitalism (hence the label: noncommunist manifesto) and tends to assume that all industrializing countries can follow these stages, which is false. Nyerere (1970) argued that development required four main things, namely: land, people, good policies and good leadership. He did not specify which one comes first but it was assumed they are important in the order they were stated. He did not state stages they would follow. It also focuses on injection of foreign capital; hence it will be criticized by the Dependency School (Gunder Frank, 1969) as encouraging a negative transfer of technology aimed at the exploitation of small economies by larger ones. The only place some analysts feel it has worked is Singapore (See box 1). A look at that country can see enormous socio-economic inequalities in it, but, where are there no inequalities these days? Besides, there is so much global competition now to the extent that this model may not work for new emerging economies due to shrinking markets, changing lifestyles, and the fact that not all societies wish to move to consumerism.

However, one thing is clear, a country needs well-educated, skilled and motivated workforce; things which start to be built in schools. The Peoples' Republic of China decided to modernize using the Four Modernizations Policy designed by the leader Den Xiao Ping in 1977 after the death of Mao Tse Tung. They focused on modernization of agriculture, industry, defense, and science and technology. They have made great strides using this policy, which was fueled by strengthening its secondary school system and sending its best people for postgraduate education abroad. There are key secondary schools allocated more funding and used to train people for China's modernization and with international standards. Some include full-time technical schools which, at senior level, after Form 3, train teachers for technical and agricultural courses offered in primary and secondary schools. Then there are ordinary secondary schools for all, which offer vocational or agricultural curriculum and

whose graduates can enter the workforce directly and qualify for higher education from the workplace. China has been sending large numbers of students to study abroad especially the USA. China raised its science & technology output by 18.7%, raising % of funds allocation to R & D by 87% and increasing GNP allocation to science & technology from 2.2% (1975) to 4.5% (1990). The Chinese economy now grows by 8.5% overtaking that of the USA and is now viewed as a threat to US trade balance. In 2019, China has 10 million applicants to higher education, and it is now a big competitor with advanced industrial countries such as Europe and USA, making great progress in agricultural mechanization, iron and steel industry, electronics and telecommunication.

### **Knowledge, skills, values needed for industrialization**

One intriguing question has always been: does industrialization drive curriculum change, or does curriculum change drive industrialization? This is a tricky one because industrialization may happen without government announcement once there is increased primary commodity production, there are well trained, creative and educated people (knowledge society), and there are conducive policies for innovation, trade and commerce. In Europe it started by small scale cottage industries such as textile weaving, based on the demands and skills available, later growing into large scale factories hiring larger numbers of people, and then moved to automation. Where a government announcement is made, a nation needs to be prepared to support the process. In any case, any nation that chooses to industrialize must address the big curriculum questions, which include the following:

- i. What meaning of curriculum is embraced by the national leadership that is preparing its nation to industrialize? Is the focus of curriculum to transmit cultural wisdom and values alone, the old knowledge (farming with the hoe, home brewing, fishing by the small canoe and drying the surplus in the sun.) or values (barter trade, sharing, subsistence. . .)? If the focus is to develop cognitive processes (how to learn) at the expense of content (what) for what purpose, there is the trap of producing debaters and demagogues who cannot put a thing into practice. A debate initiated by Eliot Eisner in the 1970s is still valid when decisions are being made on the form and content of the curriculum. If curriculum focuses only on planned and formal learning, there is a danger that schools get bogged down to teaching everything, an impossible task now given the enormous growth of knowledge. The meaning of curriculum emerges from the direction of society. A society designed to move towards egalitarianism has its curriculum intents different from one focusing on liberalism or old -fashioned capitalism.
- ii. In designing learning, one may focus on developing *individual learner* characteristics and competencies for them to work in areas of their interest. These include improved literacy and numeracy, followed by specialized interest into science, arts, commerce, agriculture, technical skills, and others such as interpersonal, artistic, spatial or musical skills. However, one may also emphasize *social transformation* qualities including a concern on knowledge, skills and values that all learners should have and share. For industrial capacity one needs a literate, numerate, skilled, disciplined and creative

population with people who can discover things, debate and produce working ideas, create employment, work effectively and efficiently to their satisfaction. The other focus may be *developing new knowledge* such as literature, scientific discoveries, arts, music and craft, political and economic thoughts and debates, laws, and so forth. The curriculum becomes the vehicle through which these traits will develop from the various activities that learners and scholars are using in the expanding economy.

- iii. There is also a need to decide the role of formal and informal/non-formal learning and how to organize learning at various levels. For secondary education there is need to decide on levels, junior and senior, disciplines and choices for various learner categories. Of specific importance is to decide whether students will be taught didactically, or they will be trained on how to learn effectively on their own and choose a career or role to play in the economy.

What secondary education can offer: the reasoning and research evidence.

In Table 1 we show the structure of secondary education in selected countries and below it a few reflections on the structure in Tanzania relative to other countries.

Table 1: Secondary Education curriculum in selected countries

Age at entry	UK	US	Singapore	South Africa	Tanzania
4	Recep.				
5	Year 1	K	Kind.		
6	Year 2	Grade 1	P1	Grade 1	Std 1
7	Year 3	Grade 2	P2	Grade 2	Std 2
8	Year 4	Grade 3	P3	Grade 3	Std 3
9	Year 5	Grade 4	P4	Grade 4	Std 4
10	Year 6	Grade 5	P5	Grade 5	Std 5
11	Year 7	Grade 6	P6 PSLE	Grade 6	Std 6
12	Year 8	Grade 7	S1	Grade 7	Std 7 PSLE
13	Year 9	Grade 8	S2	Grade 8	Form 1
14	Year 10	Grade 9	S3	Grade 9 JSE	Form 2
15	Year 11 GCSE	Grade 10	S4 O level	Grade 10	Form 3
16	Year 12	Grade 11	S5	Grade 11	Form 4 CSEE
17	Year 13 A level	Grade 12	S6 A level	Grade 12 Matric	Form 5
18	Year 1	Year 1	Year 1	Year 1	Form 6 ACSEE
19	Year 2	Year 2	Year 2	Year 2	Year 1
20	Year 3 Degree	Year 3	Year Degree 2	Year 3	Year 2
21		Year 4 Degree	Year 3	Year 4 Degree	Year 3 Degree
22					

Source: Clegg, 2005

Table 1 raises a number of issues of relevance to the curriculum review exercise

1. It illustrates two distinctly different kinds of system, one which is characterised by



a broad curriculum throughout school, followed by a four-year degree programme. South Africa and USA are typical of this group; although the South African curriculum is narrower than the US curriculum at the Senior Secondary level. The second system involves a narrowing of the curriculum in the last two years of schooling, usually to 3 subjects. Tanzania, Singapore and the UK typify this. A number of countries in Africa, such as Nigeria and Kenya, have recently moved from an A-level curriculum to the broader one.

2. African countries that have adopted the broader school system such as South Africa appear to have introduced an examination at the end of 9 or 10 years of this Basic Education which is rapidly becoming the leaving examination for the great majority of pupils and is used to select entry into senior secondary. This is the route that Tanzania has moved into since 2014. Unfortunately, the curriculum typically involves little choice; all learners study the same subjects, whatever their ability or interest. It represents a relatively cheap option of introducing 10 years basic education, but without the versatility to support modern industrial human resource requirements. In Namibia, for example, the per capita per year cost of grades 8-10 in 2005 was only a third greater than the per capita costs of primary education.
3. The close similarities between the UK and Tanzanian systems are evident and the Tanzanian A-level curricula have evolved from their UK counterparts. Given that Tanzanian children study in a second language, for which an extra year is usually added, this implies that the current Tanzanian O and A-level examination here must be regarded as relatively difficult and, in consequence, not well suited to an expanded intake. This issue was discussed during the 1996 review and it was proposed to diversify and moderate the examination to meet the needs of all categories of learners. However, it was not implemented. Neither was teacher training revised to prepare them for a more diverse group or a planned streaming according to ability and interests. This has lowered quality of secondary school leavers significantly and must be addressed.
4. There is a serious problem with the process of identification, selection, education and training of teachers, which needs to be addressed so that they can handle the growing diversity and support strong and weak learners. Taking in weak students into teaching and running a weak teacher education program means that most teachers are narrow in content and weak in pedagogy; this is not healthy for industrialization.

## **Organization of Economic Co-operation Development [OECD] Countries Curriculum Structure**

OECD countries have a long history and experience of industrialization. Their secondary education is organized to cater for the needs of their industry and economy.

Key competencies emphasized in these countries include:

- linguistic communication

- mathematical competence and basic skills in science and technology
- digital competence
- learning to learn
- social and civic competence
- sense of initiative and entrepreneurship
- cultural awareness and expression.

It will be noted that the secondary education system in OECD countries is geared to create a labour force that can meet diverse needs while giving every learner an opportunity to go where they feel most attracted.

#### Box 2: Secondary education options in OECD countries

OECD countries sec options after primary grade 6

1. Basic Education continues for all up to grade 10- junior high school.
2. 90% move to upper sec school. [overall 70% of age cohort have completed upper sec education]
3. 50% of upper sec in vocational stream leading to professional qualification and tertiary education. In the tertiary education, 53% are type A (straight from academic and 16% Type B –vocational).
4. On average 42% have upper sec education, less than 30% basic education, 25% tertiary education –variations exist based on historical reasons.
5. Upper secondary education is of three types of curricula:
  - General and vocational education;
  - Unified offering different programs; or
  - Parallel, running school based general education and work based vocational education.
6. Policy makers try to address the following issues:
  - What is the best sec education system to meet the needs of employers and lifelong learning?
  - All students to learn in a school of their choice
  - Avoid linking sec education experience to poor quality jobs
  - Create pathways for vocational and tertiary education for all
  - Strengthen student counselling and career guidance services in all schools

It must be noted that the system is greatly supported by an effective teacher education and training program that caters for the needs of general, academic and vocational education

and also one that prepares counsellors and advisers who can help both students and parents make decisions and who are linked to the opportunities available in the labour market.

The Program of International Student Assessment [PISA] and Third International Maths and Science Study [TIMSS] assessments administered since the last five years show that students from OECD countries performance is superior in areas of reading, science and maths- especially in algebra, calculus and geometry. The best performers in these assessments (internationally) have often included, among others, Singapore, Japan, Korea, Hongkong, China, and some European countries such as Finland, Sweden, Belgium, and Germany. PISA tests reading, science and maths ability while TIMSS focuses on algebra, calculus and geometry and also scientific knowledge, application and reasoning.

**Singapore:** Secondary Education options are linked to the economic activities in the country and have also evolved with the growth of the economy and paths taken in Industrialization. Note that in early years they focus on mastery of mother tongue to consolidate the link between home and school learning.

Box 3: Singapore: Secondary Education options: after passing Primary School exam at grade 6

1. Express: Four years leading to Singapore Cambridge GCE-O level: special stream studies Higher Mother tongue {Chinese, Malay, Tamil} and can proceed to A level. Ordinary stream takes an extra year to study mother tongue. Foreign language: French, German, Japanese
2. Integrated Schools-International Baccalaureate or Singapore 'O' and 'A' level
3. Ordinary Secondary schools, streamed into variety of subjects for O level learning.
4. Compulsory: English, Mother Tongue, Higher Mother Tongue, Maths, one science and one humanity subject. Others: Computing, Theatre, Drama.
5. Co-curricular activities options: Uniformed group, performing arts, clubs and societies, sports & games

Special Assistance Plan-since 1979

6. English and Chinese [language] specialization to train culturally strong majors
7. Gifted Education- both primary & secondary schools-selected by an Entrance Exam and able to study intensively depending on their interests
8. Integrated program-2007: for top performers. Most able children get into these special schools and can skip some years of O level and go to A level.
9. Specialised Independent Schools-SIS
  - High School of Math & science- maths, science, technology & engineering school
  - School of science & Technology: science, technology, aesthetics, Maths
  - School of Arts: Visual, Literary, Performing Arts

What is on offer now: the facts Structure of Education in Tanzania

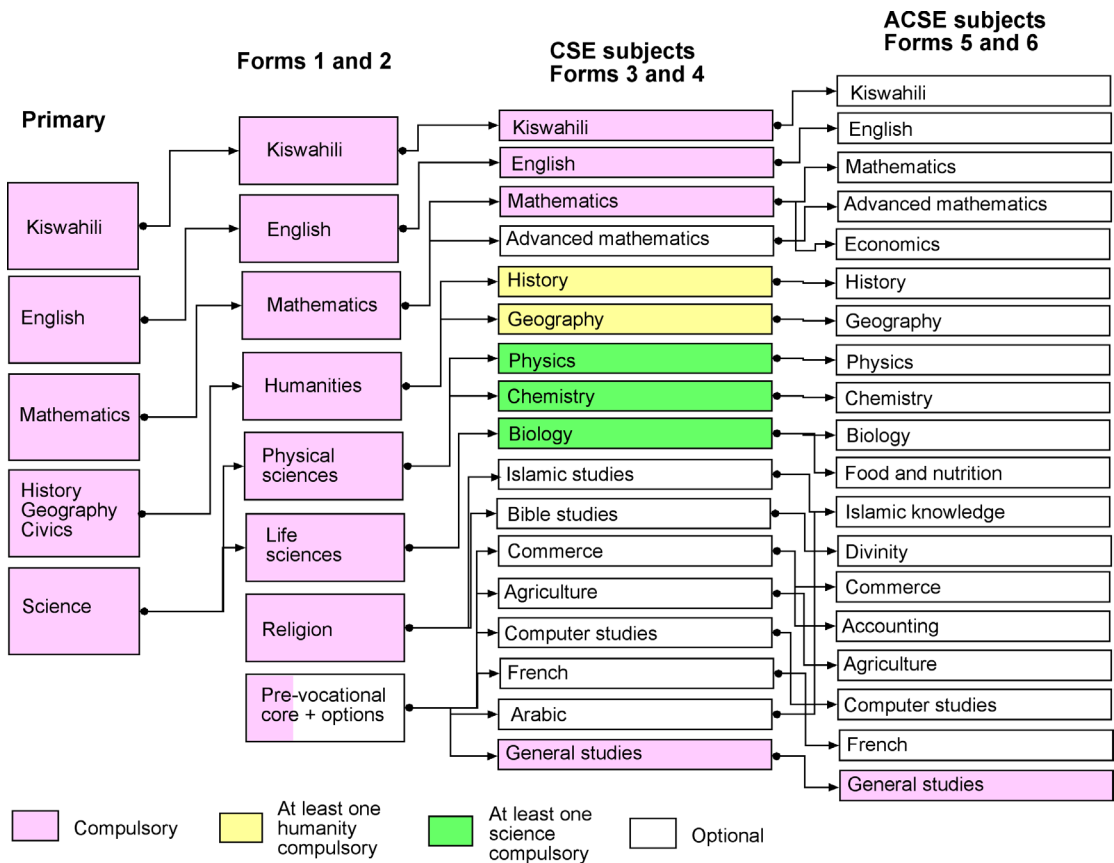


Fig 1: The structure of Tanzanian education system [Clegg, 2005].

The structure shown above was proposed by a World Bank review team in 2005 when the government of Tanzania was planning the expansion of secondary education to raise enrollment to over 50%. There was a review done to show that given the increase in learner diversity the academic curriculum shown above would not suit the group as there would be those who prefer the vocational route and the hence there was a need to make adjustment in the pre-vocational curriculum, the counseling process of learners and choice available from junior to senior secondary level, and to address the issue of teacher orientation.

#### Box 4: State of Tanzania Secondary Education Sector: 2016

Transition rate from Primary to Secondary Education: 70.6%
Primary school Drop outs: 80,574
Net Enrolment ratio: Form 1-4:33%
Cohort completing F1-4: 38.6%. Secondary school dropout rate: 3.4%
Net Enrolment Ratio Form 5-6: 3.2%
Secondary teacher: student ratio: 1:20
Division 1-3 Pass rate O level: 25.4% Pass rate Form 6: 89.4%
Technical Education teachers: 117067 [Male 57875; Female, 59, 172]

#### Challenges we face: the evidence

In 1967 Tanzania introduced Education for Self Reliance to encourage schools to prepare citizens who were literate and numerate but also able to have inquiry mind, learn from others and think critically. It also aimed to develop respect manual jobs and farm work and this was built in the curriculum. By 1977 secondary schools had been diversified to agricultural, commercial, technical and home economics schools such that every learner was expected to come out with a vocational orientation. There were practical curricula such as School Science and School Maths programs which promoted inquiry and experimental approach, but the cost of running them was too high. Expatriate teachers who were skilled left the system and by mid-1970s implementation quality has deteriorated badly. One weakness was lack of serious curriculum planning in which learners would select what they preferred and hence move in a career of their interest. The other was that ESR, though emphasized by the government, was hated by parents and teachers did not give manual work status. By 1985 when education was liberalized, most rich and educated parents had taken their children to academic schools where they would not do manual work and education returned to the old bookish and liberal form. Together with a poor approach to teacher education and development, and an unplanned expansion of UPE (1977) and Secondary Education (2005) which established numerous hastily-built community based secondary schools, quality has suffered seriously. The state of the secondary education system is shown in Box 4.

According to ESDP review (MOEST, 2017) the state of the secondary education sector as at 2016 was as follows

Projected technical Education: Non-tertiary category is shown in Tables 2-3. It is obvious we cannot have sufficient technical people to man a large industrial development if we continue with this model. Most people in the system have studied general subjects: Kiswahili, history, geography, English the quality of learning is such that they may not have the knowledge and adaptive skills to work in an industry where we need creativity, mathematical and scientific reasoning and efficiency.

**Table2: Enrolment projections in non-tertiary, technical & vocational education**

<b>Enrolment</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Folk education	42,999	50,000	54,000	58,320	62,986	68,024	73,466
Certificate	24,827	50,537	54,755	56,348	71,005	98,050	120,902
VET							
Ordinary Diploma	36,856	27,862	41,430	43,804	45,078	56,804	78,440
<b>Total</b>	<b>104,682</b>	<b>128,399</b>	<b>150,184</b>	<b>158,472</b>	<b>179,068</b>	<b>222,878</b>	<b>272,808</b>
<b>Enrolment in Non-Gov. Institutions</b>							
Certificate	5,938	12,087	13,095	13,476	16,982	23,450	28,916
Ordinary Diploma	6,576	4,971	7,392	7,816	8,043	10,135	13,996
<b>Total Enrolment in Non-Gov.</b>	<b>12,514</b>	<b>17,058</b>	<b>20,488</b>	<b>21,292</b>	<b>25,025</b>	<b>33,585</b>	<b>42,911</b>
<b>Enrolment in Gov. Institutions</b>							
Folk education	42,999	50,000	54,000	58,320	62,986	68,024	73,466
Certificate	18,889	38,450	41,659	42,871	54,023	74,600	91,986
VET							
Ordinary Diploma	30,280	22,890	34,038	35,988	37,035	46,669	64,444
<b>Total Enrolment in Gov.</b>	<b>92,168</b>	<b>111,341</b>	<b>129,697</b>	<b>137,180</b>	<b>154,044</b>	<b>189,293</b>	<b>229,897</b>
<b>Total Enrolment</b>	<b>104,682</b>	<b>128,399</b>	<b>150,184</b>	<b>158,472</b>	<b>179,068</b>	<b>222,878</b>	<b>272,808</b>

**Source: EDP projections: 2017-2021.**

Table 4 shows that the government has projected more degree graduates than certificate and diploma people. This is a growing imbalance, which will be seen during hiring, unless private institutions take up the challenge and produce more middle level technicians and artisans. Degree holders may not have the skills to do technician jobs, which most industry requires. There is need, therefore, to adjust so that we produce more doers than thinkers in the education system.

**Table3: Enrolment projections in tertiary technical education**

Enrolment	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<b>DEGREE COURSES</b>						
<b>Advanced Diploma</b>						
Year 1	1,484	2,043	3,366	2,986	4,810	5,495
Year 2	1,197	1,335	1,838	3,029	2,687	4,329
<b>Total Advanced Diploma</b>	<b>2,681</b>	<b>3,378</b>	<b>5,204</b>	<b>6,015</b>	<b>7,497</b>	<b>9,824</b>
<b>Bachelor Degree</b>						
Year 1	2,632	3,044	4,323	4,152	6,427	6,848
Year 2	2,117	2,237	2,588	3,674	3,530	5,463
Year 3	1,958	1,799	1,902	2,199	3,123	3,000
<b>Total Bachelor</b>	<b>6,706</b>	<b>7,080</b>	<b>8,812</b>	<b>10,026</b>	<b>13,080</b>	<b>15,310</b>
Postgraduate courses						
Year 1	518	489	450	475	550	781
Year 2	329	311	294	270	285	330
<b>Total Postgraduate courses</b>	<b>848</b>	<b>800</b>	<b>743</b>	<b>745</b>	<b>835</b>	<b>1,111</b>
<b>TOTAL Technical Education</b>	<b>10,235</b>	<b>11,259</b>	<b>14,760</b>	<b>16,787</b>	<b>21,412</b>	<b>26,245</b>

**Table4: Enrolment projections in higher education**

Enrolment	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<b>DEGREE COURSES</b>						
<b>Bachelor</b>						
Year 1	58,750	62,946	70,909	66,627	74,048	75,438
Year 2	48,474	52,925	56,694	63,854	59,986	66,656
Year 3	41,207	40,032	42,376	43,967	47,912	43,500
<b>Total Bachelor</b>	<b>148,432</b>	<b>155,903</b>	<b>169,979</b>	<b>174,447</b>	<b>181,946</b>	<b>185,594</b>
<b>Master and PhD</b>						
Year 1	13,164	13,073	12,962	13,999	14,812	16,455
Year 2	7,280	7,130	6,972	6,805	7,233	7,530
<b>Total Master and PhD</b>	<b>20,444</b>	<b>20,203</b>	<b>19,934</b>	<b>20,804</b>	<b>22,045</b>	<b>23,985</b>
<b>Total degree courses</b>	<b>168,876</b>	<b>176,107</b>	<b>189,913</b>	<b>195,251</b>	<b>203,991</b>	<b>209,579</b>
<b>NON-DEGREE COURSES</b>						
<b>Certificate</b>	<b>24,821</b>	<b>24,458</b>	<b>28,709</b>	<b>25,890</b>	<b>30,561</b>	<b>31,036</b>
<b>Diploma</b>						
Year 1	22,081	21,695	23,629	22,031	24,279	24,398
Year 2	20,702	20,925	20,353	21,942	20,247	22,083
<b>Total Diploma</b>	<b>42,783</b>	<b>42,620</b>	<b>43,982</b>	<b>43,972</b>	<b>44,527</b>	<b>46,481</b>
<b>Total non-degree courses</b>	<b>67,603</b>	<b>67,077</b>	<b>72,691</b>	<b>69,863</b>	<b>75,088</b>	<b>77,517</b>
<b>TOTAL UNIVERSITY</b>	<b>236,479</b>	<b>243,184</b>	<b>262,604</b>	<b>265,114</b>	<b>279,079</b>	<b>287,096</b>

There are serious challenges of language competency to Form One learner as well. The English medium of instruction in secondary school is most challenging to Form One student. The Language of Instruction in Tanzania and South Africa [LOITASA] research group has shown this problem and suggested that we should move to teach in Kiswahili. Recognizing the challenge of producing learning materials, a research team at the University of Dodoma, the Language Supportive Teaching and Textbooks [LSTT] has been working for the last 5 years on a baseline study of language competency for Form One and later developed and tested LSTT materials and a Language Supportive Pedagogy for training teachers on how to use a bilingual approach [Kiswahili and English] in textbooks and the classroom (Barret et al. 2014). At Advanced secondary school level, several ICT based practical learning materials have been tried in a few schools and we have learned a lot from their effectiveness (William et al, 2012). ACSEE examination performance in several trial schools has been very impressive so far.

### **What to be done, and the questions to address**

Industrialization as a process of economic development has taken place in several countries in the past and Tanzania can learn from their experience and history. There are countries which industrialized in the 18<sup>th</sup> Century, mainly European countries, and those which came later including Americas and the Far East Asia tigers such as Japan, Malaysia, Indonesia, Singapore, Korea, and China. One common characteristic of industrialized countries is the quality of education offered at all levels beginning with primary education that develops literacy, numeracy and motivation for learning. The secondary education level is crucial because learners are then maturing fast and deciding their future role in society. Their brain development is at its peak and they have varying talents and capabilities. Making each learner select the most interesting route and getting the best training is a very important issue. In the countries that are successful, such as OECD and far east Asian countries, education systems have offered opportunities for learners to select the stream they wish to take, giving more learners a choice to join the technical and vocational education stream where they take a variety of courses at school, or as apprentices attached to the workplace in industry or elsewhere. A training program for effective teachers exists and a supervisory mechanism for schools ensures that time and learning managed efficiently.

With a move from industrial-based to a knowledge-based economy, several ideas now exist on best practices at this point in time. As Dumont et al (2010) argue, there is a need to address the nature of learning, including through the cognitive, emotional and biological perspectives. There are various designs and approaches and evidence for different types of application: formative assessment, co-operative and inquiry-based forms of learning, technology-based applications – as well as learning beyond classroom environments in communities and families.

For Tanzania and most developing countries, industrialization is only one aspect of the economic challenges we now face. There are various advantages we have as a nation, including a large territory with rich natural resources, such as forests, mineral deposits, livestock, and game reserves and national parks which are attracting a larger number of tourists now than



ever before. We also have a peaceful country, and our leaders have worked very hard to maintain the peace. To prepare our young people to benefit from these opportunities, we need to adapt the curriculum, especially the secondary education curriculum, to the growing demands in mining, tourism, transportation and logistics agriculture and related industrial activities. In terms of content, we already have too much in the secondary curriculum and some people continue to wish we could add more. There is a need to learn from the history of successful education systems such as Scandinavia and South Asia that increased theoretical knowledge does not constitute quality education in the modern industrial era. It also important to learn that diversity to cater for doers and thinkers is the key to speedy human resource development.

### **Curriculum research projects focusing on secondary education**

A large amount of research has been done in schools during the last 20 years. Among recent curriculum research projects touching secondary education, apart from the School Science Project and Learning Through Language include the following:

- *Science Education in Secondary Schools* - SESS-1995-2004 at Ministry of Education
- *Science Teacher Improvement* - STIP-1995-2005-CSSE
- *Teacher Education Assistance in Maths and Science*-TEAMS: 1995-2066-UDSM
- *Baseline English-communication, not just rules*-2000-Ministry of Education and UDSM
- *ENSCIENCE-Integrated A level modules-Chemistry-UDOM*
- *Language Supportive Teaching and Textbooks*-LSTT-UDOM
- *Language Supportive Pedagogy: Language and empowerment*-UDOM
- *Teacher Led School Development-Lesson –Learning study*-UDOM!
- *Strategy for Civic Education [REDET-Research and Education for Democracy in Tanzania.*

These project teams have produced a lot of material and other curriculum based research projects. This material is rarely used when new textbooks are written by the Tanzania Institute of Education teams. There needs to be a linkage with key members of these research projects to decide which lessons from them can be incorporated in curriculum revisions. Moreover, there is need for more national forums to share findings from such projects.

### **Specific needs for curriculum review and discussions**

Following the above analysis, we need to review, among others, the following:

- i. Language learning: There is nothing wrong with having Kiswahili as a medium of instruction in secondary education and beyond. However, we cannot help young

people by de-emphasizing the teaching of English and preparation of readable textbooks and readers of Kiswahili and English. A lot of work has been done by the Language of Instruction in Tanzania and South Africa [LOITASA] project and we can learn from the role of both Kiswahili and mother tongue education (see example Desai et al. 2012, Osaki, 2015). Singapore has maintained its teaching on Malay, Tamil and Chinese in secondary schools as options, while also offering English, French, Japanese to prepare their tourist guides. However, as Mtana (2016) shows, parents invest a lot in English as the 'goddess of success' and for tourism development this is still important. In India, Mohanty (2009, 2016) has described English as a 'killer language' since it creates a 'craze' for its learning and undermines indigenous languages and knowledge. In a recent baseline review done at UDOM in collaboration with Bristol and AKU, we found that one serious problem in schools is that the English language in most textbooks is too difficult for our form learners and this is one reason that makes classroom discourse so difficult in secondary schools. The LSTT project has designed and tried language supportive textbook materials that carry a Kiswahili glossary and encourages form one students to discuss in Kiswahili while presenting in English. This has worked very well in Biology, Maths and English in a trial in Lindi, Morogoro and Dodoma (see Mtana and Osaki, 2017).

- ii. Science and maths: There are basic science concepts that all students need to know and hence these should be put together in one compulsory subject for all form one and two students, together with maths. At form 3 and 4, students should be allowed to choose to major in science or humanities/arts or combine, based on their ability. Teacher education has been producing various qualities of teachers, who are insufficiently trained and from programs that have varied extensively in quality and length; all of these are currently in the system (Osaki, 2007). There is need to be reoriented to teach in such a way as to encourage co-operative learning and motivate and support learners. It is better to teach less content but build adaptive competencies more.
- iii. ICT: Use of ICT must be beyond having computer labs but for building capacity for scientific analysis and reasoning (Francis et al 2012, Gabrieli et al 2012). ICT is useful only if it improves the quality of learning rather than distracting learners. Since mobile phones are addictive, their use in secondary school must be done with caution.
- iv. Humanities and arts: There is need to develop a reasonable understanding of local and international history at secondary school level but also an appreciation of literature and the arts, and improve reading and interpretation skills in all learners. It is useful to create a strong team of students trained in creative arts, drama and literature to preserve and liven up national cultural values. Currently we lack well trained teachers in this area due to poor language education tradition of the past.
- v. Technical and vocational education and training [TVET]. This part of the curriculum is currently strongly under-represented in secondary schools and pre-vocational

education teachers and materials are scarce. This route feeds industrial skills and for it to be functional it requires trained teachers and equipped schools. The government and private institutions should invest more in TVET.

- vi. Moral education should continue to be taught but there is need to ensure that teachers for this subject are well trained and that religious education teachers do not use the subject to instil elements of discrimination and hatred among young people. A national dialogue on this aspect needs to continue.
- vii. In the area of teacher education and professional development, there have been some curriculum reviews recently both in Pre-service and In-Service Education. Some Trial programs that are working well need to be improved and scaled up. This requires a collaborative effort between Ministry of Education, TIE and teacher education institutions and researchers.

The lessons from Singapore, OECD and emerging industrialising countries are useful for Tanzania which is trying to industrialise when there are several and very experienced players in the world. Available research shows that there are many trials of language improvement, science, ICT and humanities learning strategies that can be adapted for the current and future needs while further research and development work continues. Secondary schools need to continue to focus on developing 21st CCentury competencies where the quality and quantity of learning is most important. Moreover, we need to develop materials that encourage co-operative and deeper learning, use ICT to improve learning rather than to promote rote methods, and use research evidence to formulate working curriculum policies that develop adaptive competencies for applying knowledge and skills flexibly and be creative. Learners must be core participants, actively engaged in learning and not spectators or copiers of information. Teachers need more professional training to act as guides but must be responsible for monitoring and supporting learners. Too often researchers report teacher absence from school and classroom and lack of support to learners. We need to encourage more co-operative learning to supplement self -study and personal discovery, and finally train teachers to acquire motivational and emotional characteristics, which can make learning more effective and enjoyable. Above all, we need a more coordinated policy and management of curriculum design, in which the Institute responsible for curriculum development works closely with other players and uses research evidence in making major curriculum decisions.

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# Promoting Use of 21<sup>st</sup> Century Learner Pedagogy in Developing Key Competences

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Pedagogical approaches need to change or rather be modified in accordance with the learners' changing characteristics and general societal needs. It is evident of the many 21<sup>st</sup> Century learners being well informed on societal issues, information searching, exercise freedom and autonomy, demands respect, need to discuss issues and not to be told or instructed. Today's learners are effective users of social media in search for information and communicate their life experience with teachers and their fellow learners. This means one would expect teachers and academics to use relevant, context-based learner-centred instructional pedagogies since they promote effective learner's engagement in the learning process and more importantly, the approaches empower the learner with different but related abilities including critical thinking and argumentation, problem-solving, analysis, communication, decision making and build confidence and adaptive skills to different living contexts. Thus, the paper shares some practical experiences of what constitutes the appropriate 21<sup>st</sup> Century learner pedagogy from practitioner's-based evidence, relevant literature and demands of the knowledge society. It commences with the conceptual understanding of pedagogy followed by subtopics on the changing in pedagogic approaches in African education delivery context, the 21<sup>st</sup> Century learner pedagogy against the actual practice, the difference between the current pedagogical practice and 21<sup>st</sup> Century pedagogical orientation, critical pedagogical challenges facing teachers and students in Tanzania and conclusion. The discussion of the paper is based on the review of relevant literature from academics, teacher educators, researchers and author's own extensive experience and professional practice on teacher education in general and pedagogical approaches in particular.

### The concept of Pedagogy

The concept of pedagogy has been explained variously by different people working in the education sector. Each group defines the concept based on its routine activities (Kitta, 2004). This reflection of the concept seems to include numerous educational plans and activities geared to achieve certain educational goals. The conception of pedagogy from multidisciplinary perspectives could also mean considerations and application of different techniques, methods and strategies in education to arrive at the set educational objectives. Teacher educators including Starkey, (2010) and Kuchah and Smith (2011) define the concept of pedagogy focusing on instructional approaches, strategies, methods and instructional technologies used to facilitate curriculum content for learners to achieve the

planned instructional objectives consequently developing multiple learning competencies. Pedagogy is the act of making learning happen and discourse in which learning takes place (Alexander, 2001). It is what teachers think, do and say in the classroom (Westbrook et al. 2013). Pedagogy comprises teachers' ideas, beliefs, attitude, knowledge and understanding about the curriculum, the teaching and learning process and their students which in turn impact on their *teaching strategies and teaching practices*. By *teaching practices*, it means the specific actions and discourse that take place within a lesson and that physically enact the approach and strategy, for example; visual representations, variety of social interactions, the act of setting or providing a task for learners to engage cognitively with new content or develop physical skills through experimentation, reading and problem solving (Alexander, 2001). It also includes teacher's spoken discourse including instruction, metaphor, questioning, responding and managing talk. *Teacher's strategies* according to Alexander (Ibid), are dispositions towards teaching and learning that are more concrete expression of teacher's approaches and wanting. For example, making students feel safe, or encouraging their participation or cultivating a cheerful teacher personally or being seen as a knowledgeable and authoritative figure. Teacher's beliefs, strategies and practices are contextually based and encompass social, cultural and political aspects (Alexander, 2001). A teacher is exposed to pedagogy first as a student at the college and then develops it in the classroom as he/she teaches students (Westbrook *et al.*, 2013).

Thus, making learning happen, a teacher should correctly translate the context in which learning takes place. Since the learning context is not uniform across time and space, learners' needs are not static either but dynamic. The dynamism of learning context and learners' needs makes it imperative to align teaching and learning practices and strategies with appropriate pedagogic approaches as dictated by the needs of the time and theories of learning (Alexander, 2001; Mushi, 2004).

### **Changing in pedagogic approaches in African education delivery context**

Tracing the provision of education in Africa, one notices the fact that the teaching and learning process had been changing in terms of beliefs, practices and strategies among communities to accommodate the needs of the time. For instance, the periods of African pre-colonial, during colonial, after independence and currently the digital era, i.e. the 21<sup>st</sup> Century learner pedagogy which is the focus of this paper saw the change in pedagogy to address what the society or an individual learner needed by the time.

For example, the provision of education during pre-colonial African societies aimed at keeping the (values/affairs) status quo of the community (Ngara, 2007). Teaching and therefore learning was practically oriented. Nurturing skills, developing good character and promoting attitude necessary for an individual to take a distinctive role based on age and sex in the community was the main focus of African traditional education. According to Mushi (2004), while boys were prepared to become warriors, farmers, blacksmiths, rulers, house and bridge builders, girls in the other hand were to engage in family care education to become good wives and mothers, health care, cookery, and nursing). These roles helped them develop the sense of serving the community as they grew to learn its history (Adeyemi

and Adeyinka 2003 also Owour, 2007). Ngara (2007) emphasise that learning during pre-colonial time focused on the enhancement of knowledge and skills acquisition. Values were inherited through education to the younger generation. Teachers of the time included any adult, grandparents and storytellers (Mushi, 2004). The learning was through observation, initiation rites, apprenticeships, poems, songs proverbs and plays as demonstrated by experts from the community. Taboos and myths from people's tacit knowledge were used to maintain the status of culture across generations. There was a connection between the community and the kind of education offered which seem to align with what Nyerere insists that "*the curriculum should reflect the environment, with members of the community becoming part of the teaching force*" (Nyerere in Lema et al. (2004: xi).

The pre-colonial African education was intervened by missionary and colonial education which made education more structured/standardised to suit the colonialism agenda of justifying the occupation and subjugation of the Africans. Colonial education introduced almost all values of western education including the pedagogic approaches (Ngara, 2007). However, the introduction of colonial education, geared at establishing social, cultural, economic and political control by western forces. Such mission was done at the expenses of the destruction of African values, experiences, history, knowledge and skills to meet African colonization enterprise by imperial forces (Goduka 1999 in Ngara 2007). A teacher was a source of knowledge whereas learners were just *tabula-rasa* i.e. possessing no knowledge in their mind. It is what Freire (1970) refers to as a banking model of education. In terms of attitude, learners were to shy away from African ways of life and embrace western ways of life. To exhibit African values was barbaric while western values were regarded as a civilization. Classroom activities revolved around memorising content disconnected from the learner's community.

During the post-independence period, African states opted for education in which a learner could be able to do away with the legacies of colonialism while creating a united society for individual and the society's development agenda. The teaching and learning process was to reflect those needs. In Tanzania, education had to link learning, living and working, where schools were to become working communities. Merging of theory and practice was the focus of pedagogical practices in schools. Those principles advocated democratic (as opposed to individualistic) learning environment and transformative teaching pedagogies (Lema et al. 2004). Students educated through the philosophy known as Education for Self Reliance (ESR) were expected to make their own decisions, be allowed to learn from their mistakes and control the resources emanating from their work. Using this philosophical orientation in teaching and learning, ESR aimed at advocating issues of equity and justice in education provision, the relevance of education, transformative pedagogy, lifelong learning, and resource support in education (Lema et al. 2004). Teaching and learning of this kind do in many ways reflect the needs of the 21<sup>st</sup> Century learner pedagogical practices whose practical implementation is yet to be realised. Despite periodical innovation in syllabus calling stakeholders to emphasise learners' acquisition of learning competencies, it is frustrating to see that teaching and learning is still teacher-centred at the learners' expenses i.e. learners are poured with knowledge as if they do not possess any learning experience. Learners are not actively and democratically engaged in teaching and learning processes but rather neglected,



despised, isolated and more seriously forced to learn the content which does not relate and/or applicable to their localities in particular and support learner adaptation to a different environment.

### **The 21<sup>st</sup> Century learner pedagogy against the actual practice**

The world today is changing so fast. The changes are seen in such aspects as rapid exchange of information in a rate which has made a world look like just a village. There is a high rate of technological innovations, free movement of capital, exchange of technology and above all, the individual's access to knowledge, skills and information through the digital platforms; the internet and social networks. The above scenario forms the context in which the current learner is found. A learner who through digital gadgets (computers, smartphones, smartwatches, smart boards) can at any time anywhere and at very limited cost access the digital platforms such as Twitter, YouTube, WhatsApp and Instagram just to mention a few, to get knowledge, skills and information. Education which is both, an essence and director of change is expected to reflect the stated reality, especially, on how teaching and learning are realized. The extent the classroom and teachers have changed in terms of pedagogical approaches, to accommodate the needs and characteristics of the current learner. It is thus hypothetically expected teachers' teaching attitudes, beliefs and strategies to respond to the 21<sup>st</sup> Century learner's pedagogical and contents' needs.

The 21<sup>st</sup> Century learners exhibit some characteristics different from that of their past two decades, Eaton (2014) postulates some characteristics of the 21<sup>st</sup> Century learner that: they are media-driven in such a way that their digital literacy is even higher than their teachers and parents; the aim of education to them is to make a difference and not for job; Eager to be connected and collaborate with others through various technologies such as social media including awareness of the world and the multicultural differences; they are easily adaptable to new environment; they are better educated than any generation before them and they are data rich, thus whenever they need any information would know where to find; they are creators as well as consumers, they would use others' stuffs, but would create and share their stuffs with others; they are not only practical in their learning but also they have a "can do" attitude as well as "trial and error" learning approach; they want to have a say in their classroom processes, that means a learner-centred approach and they are transparent on what they do; they exhibit multi-tasking though creative and they are indeed lifelong learners. Thus, the 21<sup>st</sup> Century learner has diverse needs, is creative and technology-driven.

The implication to teachers and academics is that, the 21<sup>st</sup> Century learner requires a pedagogy which will correctly address the needs of such a learner through, to be reflected in teachers' beliefs, teaching practices, teaching strategies and assessment practices such pedagogy is, in this paper, termed as the 21<sup>st</sup> Century pedagogy. As per this pedagogy, learning should be geared towards outcomes rather than content, the learning environment should be simplified rather than being complex, the learner should be at the centre stage of learning not at the receiving end of knowledge from the teacher who is assumed to know everything.

However, today's teachers' pedagogical practice is still informed by mainly their long-rooted cultural belief that they are the source of knowledge whereas learners are receptors of knowledge. Teachers' practices in classrooms seem to suggest that still not believe in the learners' rich background of experience as an integral part of teaching and learning. They seem to maintain their status as a fountain of knowledge thus continue to use teacher-centred teaching and learning approaches. Unfortunately, in many schools and educational institutions today, a large number of teachers and academics disqualify learners' potentials they bring with them in the class. Teachers and university academics continue to apply the so-called '*old fashioned pedagogy*' where learner's voice is silenced by the teacher's classroom domination. A few of teachers and academics use participatory methods such as group discussion, real objects, some outdoor instructional activities, and individualized assignments. In Tanzania, for example, this is mainly evidenced in public teachers' colleges, private schools and very rare in higher education institutions where take home and group assignments are predominantly used. Implied is that, there is a need for all teachers and academics to have a common understanding of the potential of learners' prior knowledge and experience and thus expected appropriate pedagogies for learners' empowerment. The concept of pedagogy can be redefined in mapping it up with the changes emerging in the education processes about the teaching and learning approaches and learners' demands in the 21st Century. The Century needing learners to acquire comprehensive and rich knowledge geared to enhance them with problem-solving, critical thinking, innovation, creativity, collaboration, analysis, global competencies, information literacy, written and oral communication skills and abilities (Andrade, 2016). Critical theorists suggest that developing critical thoughts amongst students, teachers need to cultivate a fluid relationship with their students such that students democratically and critically use their prior knowledge and experiences to build new conceptions of the topics (Dewey, 1916; Freire, 1970; Kincheloe, 2004). According to Freire, in a democratic instructional environment, the learner is at some point a teacher who facilitates teaching to fellow learners including the teacher. There is a sharp contrast between current pedagogical practices and the practices which could suit the needs of the learner of the 21<sup>st</sup> Century. The table below shows those differences.

The table is informed by the author's extensive teaching experience in different levels and scholars and researchers' evidence including Dewey (1966), Nyerere (1967), Freire (1971) and Mushi (2004). Others include Eaton (2014), Andrade (2016), Brun and Hinostroza (2014), Kajoro, et al (2013) and Mavhunga & Rollnick (2016) as also reflected by the 21<sup>st</sup> Century knowledge society.

### **The difference between the current pedagogical practice and 21st century pedagogical orientation**

S/N	Current Pedagogical Practice	21 <sup>st</sup> Century Pedagogical Orientation
1	Silencing /Banking model instructional philosophy	Critical Theory/Pedagogy instructional philosophy
2	Teacher-centred teaching and learning approaches	Collaborative and student-centred teaching and learning approaches

3	Normally teaches learners what to learn	Usually teach learners how to learn
4	Less connection to life	Direct linkage to learners everyday life
5	Reliance on didactic instructional approaches	Reliance on facilitative instructional approaches
6	More theoretical oriented classroom practices	Bridge theory and practicals-linkage to students' life
7	Less provision of learner support services	Adequate provision of learner support services especially learners with special needs
8	Teacher and learners relationship is hostile	Teacher and learners teach and learn together
9	Mainly reliance on summative assessments for performance judgement in terms of grades i.e. teachers drills for examinations	Maximum use of formative assessment for improved teaching and learning
10	Less use of teaching and learning resources	Extensive use of teaching and learning resources
11	Non-discovery teaching and learning methods	Discovery teaching and learning methods
12	Books, teacher's notes and theoretical examination-marking scheme centred	Learners' context based activity classroom practice.
13	Minimal teachers teaching and learning using locally available resources (TALULAR)	Predominant teachers teaching and learning using locally available resources (TALULAR)
14	Learner exploited by the teacher (teacher dominance)	Learner autonomy or self-regulated learning with increased learner responsibility
15	Less use of real objects	Extensive use of real objects
16	4 walls class – in class teaching without outdoor classroom practices	Beyond the 4 walls classroom practices
17	Learners' use of ICT in teaching and learning is strictly prohibited	Emphasis on the use of ICT in teaching and learning

Therefore, the appropriate 21<sup>st</sup> Century learner pedagogy requires the teacher and an academic to use pedagogical approaches which promote learner's ability to: acquire rich and comprehensive education; critique the socio-economic, political and cultural practices; communicate clearly and correctly; demonstrate confidence; build the culture of respect and appreciation; make reasoned decisions; think logically and critically; solve problems independently and strategically; critically comprehend and analyse issues across spheres of life and be able to adapt to different living contexts.

Implied is that making teaching and learning effective, meaningful and learner-centred, the 21<sup>st</sup> Century teachers and academics should consider some important factors regarding the needs of the 21<sup>st</sup> Century learners so that their practices, attitude, and beliefs in teaching and learning do not frustrate but support learning.

They should be aware about, students' learning potentials including their access to any information possible, thus avoid spoon-feeding them or teaching one-size-fits-all content. Learners have different personalities, goals and needs, and offering personalized instruction is not just possible but desirable. When learners are allowed to make their own choices, they own their learning, increase intrinsic motivation, and put in more effort. Thus a teacher should create a learner-centered classroom and personalize the instructions.

It should also be emphasized that students are also knowledge producers. Today's learners have the latest and greatest technological tools, yet the usage in many cases barely goes beyond communicating with family and friends via chat, text, or calls. Even though students are now viewed as digital natives, many are far from producing any digital content. They own expensive devices with capabilities to produce blogs, info graphics, books, how-to videos, and tutorials, just to name a few, but in many classes, they are still asked to turn those devices off and work with handouts and worksheets. Sadly, often these papers are simply thrown away once graded. Many learners do not even want to do them. When given a chance and especially properly guided, learners can use the technology wisely to learning different instructional topics including production of beautiful and creative blogs, movies, or digital stories that they feel proud of and share with others. Therefore, proper approaches for effective and full integration, technology must be integrated as a whole across all courses and not as a practice for most of the institutions who integrate technology on specific subjects or courses (Brun and Hinostroza, 2014).

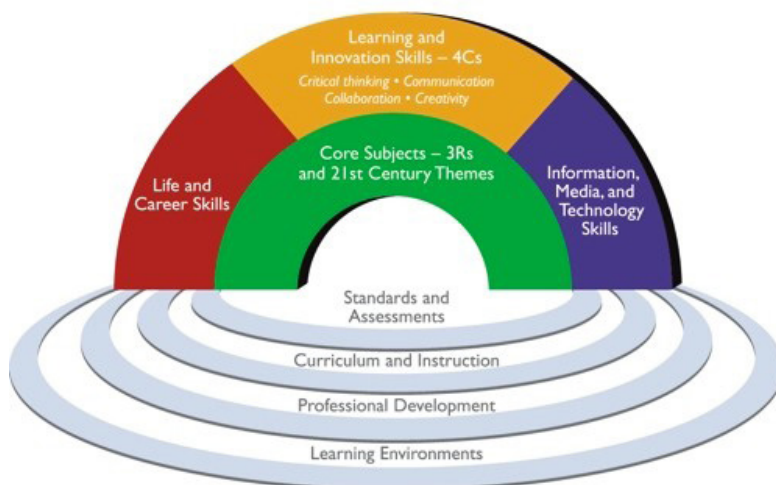
Teaching and learning should be critical and empowering. In response to the 21<sup>st</sup> Century learner, teachers must reconsider the instructional methods and strategies towards the need-based response to the contemporary problems in which the body of knowledge could be applicable; this implies that the mono-methodological approach is no longer applicable in the 21<sup>st</sup> Century learner's world. We should therefore emphasis to the problem-focused, critical thinking and practical oriented pedagogical approaches (McLaren, 2013). Teaching and learning should generate awareness on the part of the learner. In response to the 21<sup>st</sup> Century learner's needs, teaching and learning should reflect problem solving, critical inquiry and foster education research, giving teachers avenue to learn what learners want to learn and at their own time. This will enable learners challenge teaching and learning approaches and thereafter suggest what should be done (Kajoro, 2013).

Regarding the teacher-learner relationship, the relationship between a teacher and a learner according to Freire (1971) should be fluid whereas at some point the teacher becomes the learner and the learner becomes the teacher. The teacher and the learner teach and learn together. With the demands of the 21<sup>st</sup> Century such a relationship is to be created. The teacher-student dynamics in relationship will create conducive environment for students' classroom learning which will result to the promotion of student-centred learning, cooperation and interdependence (Dole *et al.*, 2016).

On instructional approaches and models, teaching approaches where the teacher assumes full control of the teaching and learning processes have to change to equip the 21<sup>st</sup> Century learner with new skills and knowledge (Dole *et al.* 2016). Mushi (2004) recommends teachers and academics pedagogical practices to change from didactic to the facilitative approaches. There is a need to encourage research and innovations as important components for effective teaching and learning in the 21<sup>st</sup> Century. This is not because of the rapid social dynamism

taking place but also the fact that the 21<sup>st</sup> Century learners are increasingly becoming curious, information searchers, autonomous learners and regular users of social media for communication and other many purposes. Implied is that teachers need to work hard do research on appropriate pedagogies to meet the changing learners’ needs. Unfortunately, research component seems to be lacking in teachers’ education as (Meena 2009, p78) points out that, *‘lack of research culture in Tanzania’s teachers’ colleges and numerous decisions about the curriculum from external authorities without careful research undermine the role of research in developing teachers’ pedagogical thinking’* (Meena, 2009, p. 78). This practice has in many ways adversely affected teachers’ development of learners’ contextually based and relevant pedagogical approaches and models but also has resulted in teachers limited/lack of linkage between pedagogical approaches and models and the implemented curriculum. The result of which, being the proliferation of the traditional teacher-centred instructional pedagogies at the learners’ expenses.

### **An appropriate pedagogical model for Tanzanian education context**



Pedagogical model adopted from Farisi (2016)

In applying the 21<sup>st</sup> Century learners’ pedagogy in the classroom, Faris model may be adopted Farisi’s model (Ibid) presents teachers and academics’ important aspects to consider during classroom processes according to the needs of the learner of the 21<sup>st</sup> Century. The model focuses on the availability and use of technology and other media in the teaching and learning. It emphasizes on innovative learning and teaching focusing on creativity. It encourages communication, collaboration and critical thinking. The aspect it considers makes the model an ideal for learner-centred approaches which align with critical instructional philosophy/theory or pedagogy. In so doing the model makes it possible for teachers and academics to translate 21<sup>st</sup> Century pedagogy in the classroom situation.

The model considers effective communication as one of the important aspects for meaningful learning. In Tanzanian, the use of English as the medium of instruction in post- primary

level has been challenged as the cause of the failure of students to effectively acquire relevant knowledge since they are not proficient in English language (Tibategeza and Du Plessis 2012). As Lupogo (2014) observes, if the language of instruction is not well familiar to the learners and/or teachers, teaching and learning cannot be effective. Therefore, the challenge of language of instruction has significant adverse effect on the teaching and learning processes consequently compromising the ability to provide quality education to learners. It has been suggested that Kiswahili should be used as a medium of instruction instead of English language for meaningful learning. Swahili language has been well mastered by many students (Lupogo 2014). In this case, the use of Kiswahili as a medium of instruction in post- primary level of education will enable effective communication in learning as Faris model suggests. The use of Kiswahili language as medium of instruction in teaching and learning will link learners' real socio-economic and cultural practices with the classroom content. With Kiswahili as a medium of instruction, learners will be prepared to solve or manage their surrounding environment or problems and general life. Learning environment should encourage self and lifelong learning, extensive use of real objects, learner autonomy or self-regulated learning which increase learner responsibility, more interactive learning with competitive examinations and more based on practical; teachers should be encouraged to participate in the professional development to enhance their capacity so as to effectively respond to the current and emerging technological demands of the 21<sup>st</sup> Century learner.

### **Critical pedagogical challenges facing teachers and students in Tanzania**

Effective implementation of the 21<sup>st</sup> Century learner pedagogical approaches in Tanzania is faced by numerous challenges including the following;

**Language challenge:** Psychologists have presented clearly the influence of language on learner's construction of knowledge. According to psychologists, learners build conception of instructional phenomenon /content using language that he/she masters. This means that for a multilingual Tanzania's learner, construction of knowledge begins with a learner using Kiswahili as a medium of instruction in primary school. At the post- primary level, English language is used as the medium of instruction. The switch, by learners, from Kiswahili to English language as a medium of instruction, according to researchers (Tibategeza and Du Plessis 2012), has resulted into failure to acquire relevant knowledge by learners. Moreover, it has been reported through various studies that neither the teacher nor the learner is conversant with English language. This means, teaching and learning cannot be effective since learning requires that learners learn through the language in which they are competent. The solution to this challenge would be, as it has been advocated by several studies, to use Kiswahili as a medium of instruction from primary to post-primary level. Since the 21<sup>st</sup> Century learner is required to be creative, communicate effectively, innovative and think critically in addressing the problems and challenges, the use of Kiswahili, is expected to facilitate realization of 21<sup>st</sup> Century learner instructional objectives.

**Assessment challenge:** As the adage goes, '*there is no teaching without assessment*' (Meyer, 1992). Emphasis of the 21<sup>st</sup> Century pedagogy among others is the effective use of assessments in order to promote learners' learning. Assessments require to be integrated in teacher's

teaching and learning process and not be provided in discrete form. This understanding of the nature of instructional assessments implies the need for learners' effective engagement in the assessment process right from teacher's pedagogical preparation to lesson conclusion. Unlike the most applied teacher-centred instructional assessments where many of the assessments are summative and paper-pen based the 21st learner assessments (McFarlane, 2013) are mainly activity/problem solving based, individualized and more important their results are used to inform teacher's pedagogical practice consequently positively affecting students learning. These types of assessments are called authentic since they are continuous and engage learners in life based activities (Meyer, 1992).

However, in practice, learners are still subjected to or enslaved by competitive theoretical examinations geared to provide judgment on students' performance in terms of their ability to regurgitate or reproduce what he/she was taught. Assessment in many schools and higher learning institutions are too theoretical to enhance learners' acquisition of multiple skills including critical thinking, communication, meaningful and rational decision making, problem solving and analytical skills (Maaka, 1999). According to Maaka, assessment needs to focus on the learning process and not the end results (product) of the process. It is believed that assessing the product of instruction neglects the integration of students' diverse meta cognitive needs, interests and prior knowledge. Limited instructional resources and large has been the everyday teachers' cry. Nevertheless, those who have taught in such teaching and learning environment (Kuchah & Smith 2011) are optimistic that depending on the teacher's creativity and innovativeness, effective teaching can take place in whichever classroom condition. Examination-centred assessment system has resulted into increased examinations leakage and students' sexual abuse in the struggle for attainment of high grades and not learning competencies.

These cited challenges should be addressed only if all education stakeholders will change their mindset against the traditional practices of teaching and learning, getting rid of technophobia; improving learning environment by providing adequate infrastructure, informed educational policies, learner support services; integrate technology in teaching and learning and being readily adoptive to the changing instructional approaches. There is also a need for teachers to be innovative and creative; provide strategic in-service teachers' training, building their capacity so as to meet the current learning needs and emerging technological demands including global educational aspects such as: global citizenship education, human rights, education for sustainable development and global cultures for them not to be isolated in other education systems and living contexts. Education stakeholders may promote creativity and make learning contextually relevant by applying such strategies as TALULAR i.e. Teaching and Learning Using Locally Available Resources that are recyclable and this would enhance students understanding of the subject matter as well as managing their own environment. Emphasis should focus on provision of education which is relevant to learners' life and that which combine theory and practice producing the so called a self-reliant society (Nyerere, 1967). The 21<sup>st</sup> Century pedagogic practices, beliefs and strategies by teachers, should be in harmony with the Tanzanian culture, training and classroom context. Teachers should be positive toward new practices. They should shy away from being authoritative thus prevent understanding of interactive practices. They should promote interactive learning

between them and students. Students should also be encouraged to study on their own through formal and informal peer support clinics (in clusters/schools) to allow teachers conduct joint observations, share resources, lesson plans and assessment practices. Learning environment should be technologically enriched where possible and never be discouraged.

## Conclusion

In conclusion, one can state that informed by social constructivism and critical theories, the transformative pedagogy would be appropriate for our country to provide learners with skills and knowledge to benefit from the formal and informal learning environment. Learners will have the opportunity to learn issues as they experience in their day-to-day life. This is because the present national curriculum emphasizes the formal arrangement of learning based job knowledge/skills development than informal ones. This is evidenced by disparities in learning needs amongst learners equally the same with while the mandated curriculum which offers irrelevant knowledge to some learners and relevant knowledge to others. The informal learning part suffers from cultural and technological interference, hence not well monitored by the community. It is logically to state the need to establish a model of curriculum informed by Tanzanian communities or contextualizing the western models forming a blended pedagogy. Against tendencies of many African governments to design curricula for the learners without their involvement, a top-down-top curriculum development approach is proposed to bring the most relevant curriculum for Tanzania school children

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# **Transformative Assessment: A Quest to Improve Learning in Tanzania Secondary and Higher Education**

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## **Abstract**

The author argues for the essence and need of engaging transformative assessment using assessment for learning (AfL) practices in Tanzania secondary schools and universities in order to build vital and transferable learners' competences. Citing a variety of scholars, she notes, that secondary schools and university assessment has remained traditional where pen and pencil written assessment practices are used. Traditional assessment guides learners to pass tests and examinations for the sake of attaining certifications and employment. Yet, learning at secondary schools and universities ought to equip learners with competences for which they can use to perform well not only in their tests and examinations but also in performing successfully as human resources in society. Arguing that there is a close link among education assessment, policies, declarations and all aspects of curriculum implementation practices, the author realizes the need for assessment practices that address social needs. While there have been several advocates of formative assessment and transformative assessment, the author recommends extensive use of AfL as formative assessment in secondary and universities because when effectively engaged AfL is consistently applied in day-to-day classroom assessment tasks and activities. Other assessment types leave space for ad-hoc implementation of assessment while AfL clearly guides teachers to daily observe fundamental targets that transform assessment and learners through assessment tasks, activities, tools, and techniques which are relevant and meaningful as well as fitting targeted educational goals, outputs and the quality of citizen developed. Within contemporary 21st Century global knowledge economy, Tanzania needs citizens with capacity to create and innovate requisite ideas and practices which are relevant for creating an industrial nation and building quality human resources required for the nations' desire to leapfrog into a middle income economy through industrialization.

## **Introduction**

Assessment is one component of curriculum implementation in Tanzania secondary schools and universities. Assessment involves all tasks, activities, techniques and processes used to determine the extent to which curricula content, teaching, and learning are progressively evaluated to determine expected educational outputs at different stages of curriculum implementation. Prior to the 1990's education systems generally focused on "education inputs [i.e.] physical facilities, curriculum materials, books, [and] teacher training" (Kellaghan,

2004, pp. 2-3; OXFARM GB & TEN/MET, 2008-2010). According to Kellaghan, from the 1990's, questions regarding what learners achieve as a result of schooling in terms of useful knowledge, reasoning ability, skills and values began to surface. People were increasingly getting influenced by cooperate and managerial approaches in organizations. Government administration was being urged to emulate cooperate and business management practices which not only focused on inputs but also in the outputs of their organizations. Since then, these considerations have been made and spread to most education systems including the system of education in Tanzania. It is important to realize that one cannot make reference to education outputs without consideration of assessment.

Assessment enables learners, teachers, educational institutions, governments and the public to determine students' performance as an output of learners' learning. Ideally, students' level of performance should be an indicator of how well intended learning outcomes (ILOs) have been attained (Kellaghan, 2004, pp. 2-3; OXFARM GB & TEN/MET, 2008-2010). ILOs emphasizes the attainment of competences that are transferable to learners' lived contexts and not only on students' scores based on paper and pencil assessment. This implies that when learners' performance is solely determined through classroom quizzes, tests and national/final examinations scores (Kellaghan & Greaney, 2009, cited in Hakielimu, 2012, Salema, 2017) its validity becomes questionable. Paper and pencil assessment, centered on tests/examination overlooks the importance of competences that learners ought to gain from their learnings to transfer and use in life. On this ground, high reliance on external examinations, including national examinations to judge learners' performance capacities is a misconstrued perception of assessment when development of learners competences is considered the core element of education provision.

As can be deduced from the preceding narrative, assessment is one of the major aspects of education systems. It is an integral element of curriculum implementation leading to education outcomes that could be intended or unintended. According to scholars Kellaghan & Greaney, 2009, cited in Hakielimu, 2012, Salema, 2017, there is evidence indicating that assessment as a pivotal aspect of Tanzania's education system has so far functioned less effectively not only because learners have not performed highly in their national examinations but also because those who have graduated through the system have not satisfied intended community, national and employers' expectations (Hakielimu, 2012; Salema, 2017; Mengi, 2018; Sumra, 2018). Further, a good number of graduates from the country's education system cannot initiate successful and competitive self-employment schemes (Mukandala, 2018; Babyegeya & Mushi, 2008).

It is upon the background above that considerations of assessment practices in Tanzania have been considered deficient despite the significance of assessment in improving learners' learning (Graduates' performance and employers' perception about assessment in the country have been rated low. Sumra's (2018) perception of the Tanzania education system and its assessment practices can be comprehended through his expression that Tanzania's students "are not learning [enough] despite current governments' effort to allocate more resources to the [education] sector" (p. 8) than it did in the past. Adding to this kind of perception, a study cited by the same scholar indicates that employers' perceptions about the quality of Tanzania university graduates is the least satisfying for employment when compared to university graduates from other East African countries.

The condition highlighted above, indicates a need to transform the Tanzanian education system by addressing its various constituents, among which is the assessment component. Transformations in education assessment (Tolgfors, 2018) can best be attained if Tanzanians have a common understanding of the concept of assessment and its functions, particularly, those functions underlining the significant roles that assessment plays in strengthening learning effectiveness and fulfilling an outcome-based education system (Salema, 2017). A good number of Tanzanians still consider short written paper and pen/pencil assessment which include assessment tools such as ‘multiple choice’, ‘yes and no’ or ‘true and false’ questions to be ‘the’ reliable techniques to assess learners’ learning and teaching effectiveness (Sanga, 2014; Salema, 2017).

Preference to traditional techniques mentioned above has generally been justified on the belief that their cost is low and they are easy to process and apply resulting data. Other techniques of assessment such as portfolio, site visits accompanied with written reports, course journals and project work are generally considered more time consuming, expensive, difficult to mark and grade as well as most likely to engender unfairness and inequity (Salema, 2017). The fear expressed in the latter idea remains challenging given consistent lamentations that Tanzania, like other low developed counties, has remained poor for too long a time now and transformation of the condition needs to take place. What is considered a challenge in this case, fits under an old proverbial expression carrying the message that if we ‘fear to invest in education, then, we should invest in ignorance’! This proverbial expression constitutes an important caution suggesting that fear of heavy investments in our education system can potentially lead to negative consequences to our development, including continuing to reproduce an ignorant society. An ignorant Tanzania would contravene the nation’s 2025 Vision of creating a learning society with capacity to transform the country from an agrarian economy into an industrial one. An industrialized society is impossible without heavy investment in education through which qualified human resources are generated. Investment in education by transforming its assessment constituent is a requisite potential to make the country leapfrog from its current poor economy into a middle economy as is the intention of today’s Tanzania under the 5<sup>th</sup> Government under His Excellency, President Dr. John Pombe Magufuli.

### **Placing Assessment in Context**

When contemplating assessment in Tanzania’s education, it is important to understand education as a system spearheading and encouraging processes leading to developments which directly or indirectly impact social, political and economic growth in society. Such development ought to be sustainable and consistently transforming in relation to evolving local and global needs and interests. This being the case, education systems and their practices including, among others, assessment should be deliberately designed for purposes of transformation. Transformation is a broad phenomenon, and has been perceived and implemented diversely. Satisfactory transformation enshrines practical systems aiming at attaining desired outputs and outcomes that trigger changes laden with potential to enhance peoples’ development and livelihoods. The outcomes need to reflect perceived benefits of investments, in this case education, as perceived by target investors and beneficiaries of the system. If any education system does not satisfy its investors and beneficiaries, it doesn’t meet its perceived quality (fit for purpose), hence, will need to be thoroughly reviewed to open up for transformations across each aspect of the system, assessment included.

Therefore, there is need to transform Tanzania's education practices in a manner that the practices encourage, promote, and support a transformative education assessment agenda or plan at all levels of the system. The transformation agenda considers engagement of different stakeholders who have some stake in the education system. This process poses both personal and institutional challenges since it calls education leadership, teachers and learners to have clearly focused vision of target educational goals and outcomes. The goals and outcomes ought to be developed in a way that guides the implementation of assessment plans and practices on the basis of the role of assessment as a major part that enhances learning processes. Relevant assessment programmes, tasks, activities, tools and strategies ought to reflect high potentials that trigger transformations in identifiable, realistic and practical ways. According to Tanzania's Vision 2025 the competition we face in the 21<sup>st</sup> Century requires highly skilled manpower capable of development focused initiatives. Appropriately designed transformative classroom and out of class assessment has the power to ignite the development of such skills as it is imbued with situational or contextually relevant practices enabling practical transferability of what is learnt through education settings to real life environments.

Tanzania scholars and researchers have expressed their dissatisfaction on current assessment practices that have led into learners' poor performance in final national examinations as well as in the job market for those who graduate and secure jobs (Sumra, 2018; Mukandala, 2018). Therefore to attain the suggested educational related development in the preceding paragraphs, ministries responsible for education in Tanzanian should collaborate in developing workable plans and mechanisms that assist the analysis of current assessment practices in the country through inclusion of broad spectrum stakeholders fora (e.g., members from the Tanzania Institute of Education-TIE, the National Examination Council of Tanzania-NECTA, Universities, students, parents, potential employers, etc.) as an imperative ensuring involving stakeholders' voice with positive impact on major decisions about assessment. Stakeholders' voice is necessary; they directly or indirectly contribute and benefit from an education system whose intended learning outcomes (ILOs) are well reflected along its assessment programmes. Processes and outcomes of such analysis open avenues from which education stakeholders get to understand the concept and practice of assessment as an essential element in the education system and assessment constitutes a critical input in enhancing learning and building transferable competences to lived environments. According to Harris & Cullen (2010), the outcomes of the suggested analysis would enable a clear 'understanding' of where currently Tanzania stands in terms of its assessment practices and propose steps to be taken to progress towards contemporarily relevant national education system both at secondary and universities in terms of assessment systems.

Analysis of the Tanzania's secondary and higher education assessment systems ought to bring together institutions directly or indirectly involved with academic assessment matters at the two education levels. The Tanzania Institute of Education (TIE) responsible for developing curricula for basic and teacher education, the National Examination Council of Tanzania (NECTA) responsible for basic and teacher education examinations, universities that offer teacher education programmes and other key stakeholders; including public and private employers, parents, communities and students. These should work collaboratively at

various stages, collaboration among these groups and institutions has capacity to critically scan the nation's education system and man power requirements for which they contribute in developing working guidelines for assessment programmes. Effectiveness of the suggested collaboration can be possible only if the curricula offered have been designed to match targeted competences for which learners are expected to gain through educative processes in secondary and Universities.

Members engaged in the collaborative link suggested above need to be exposed to assessment practices in other parts of the world since Tanzania and its education system is in many ways connected to the current 'global village'. Awareness of international declarations and conventions which influence education provision is an imperative because they impact majority of national policies and plans (e.g., UNESCO, 2000a, 2000b, 2016) which ultimately influence the nature of assessment targets, types and implementation approaches. Linkages with external policies/declarations have been highlighted under the Tanzania Secondary Education Development Programme II (SEDP II) which was informed by SEDP I as well as international reforms of previous 15 years (SEDP II, 2010). Hence, as assessment experts consider curricula content, teaching, learning and assessment; they should as well consider internal and international education policies and declarations which directly or indirectly impact the taught curricula content, how the content is taught (pedagogy), how learners learn, how they are assessed and how all these elements are intertwined (Biggs & Tang, 2017). Simply stated, commonly approved policies and declarations influence international and national policies and these determine the nature and type of intended learning outcomes (ILOs) which inform the curricula developed and implemented through the various components among which is the assessment component.

The relationship between elements likely to enhance effective assessment and attainment of intended learning outcomes (ILOs) is demonstrated in Figure 1. The figure shows that national and international policies/declarations inform the type of ILOs developed; likewise, ILOs inform the curricula content developed, teaching pedagogy, learning and assessment programmes. The arrow in the diagram which indicates the re(learning) part of the process implies that if graduates' competences at work are evaluated and judged as not meeting originally intended ILOs targets, the components of the educative process including assessment ought to be revisited for improvement or changes. However, if the graduates' competences at work are evaluated and judged as meeting intended learning outcomes there would be no need to revisit the education circle unless new ILOs emerge as a result of current and future national development needs.

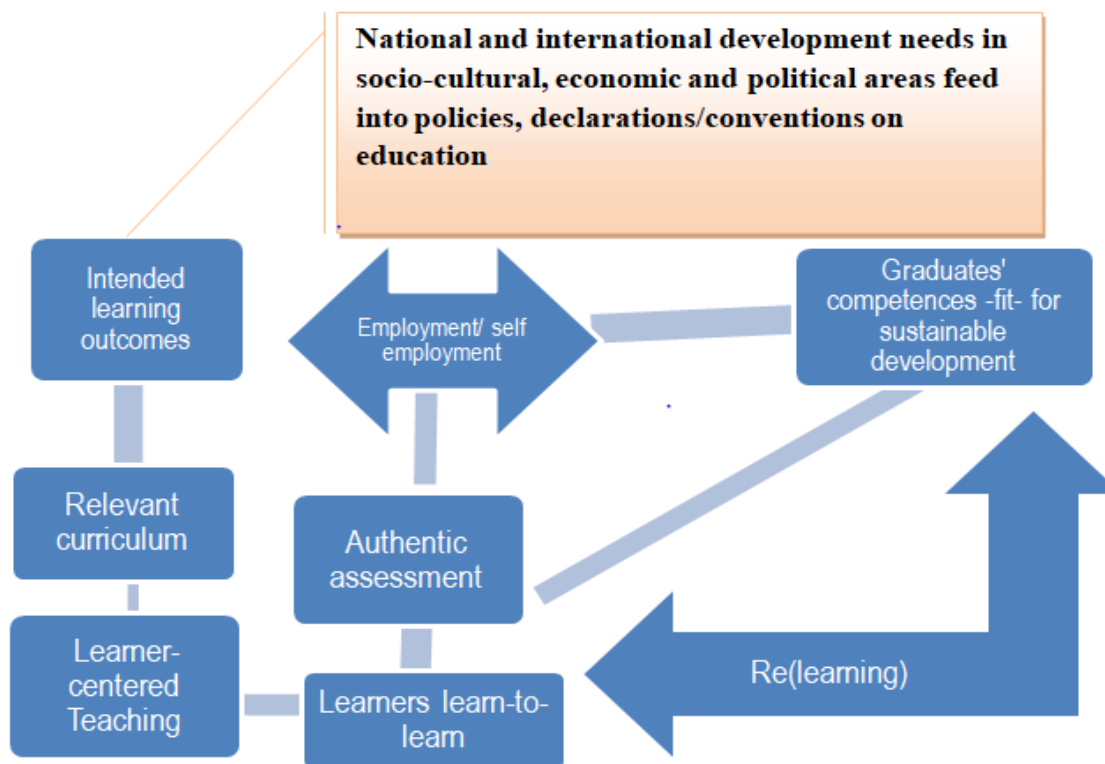


Figure 1: Systematic Education Processes – Societal needs and Declarations/policies influence ILOs, curriculum, teaching and assessment

### Learners' Engagement in Assessment

The curriculum content and how learners are assessed have a lot of contribution to learners' engagement during teaching and learning processes. Currently, most successful learners have been groomed to focus on what is to be assessed and how they can most effectively meet the assessment requirements or criteria that are set by institutions and examination governing boards (Kincheloe, 2008; Goldsmiths, 2010, Salema, 2018). When this focus becomes the major demand for learning, it contradicts the essence of learning for developing learners' competence which they need for effective engagement in actual life experiences during the length of their study, but specifically so after they graduate. The focus on learners' competences makes it important to determine assessment content, methods, tools, techniques and duration of assessment implementation in advance of designing and starting courses or programmes. Assessment should not be an afterthought or ad hoc event. Major assessment demands should be embedded or highlighted in curricula as well as along the length of teaching and learning processes since learners ought to contribute to assessment along the entire continuum of teaching and learning. Hence, assessment ought to be planned to enable teaching and learning partnerships which encourage learners' autonomy and freedom to participate as they bring into assessment their voices as suggested by Bain (2010).



The curriculum content and how learners are assessed have a lot of contribution to learners' engagement during teaching and learning processes. Currently, most successful learners have been groomed to focus on what is to be assessed and how they can most effectively meet the assessment requirements or criteria that are set by institutions and examination governing boards (Kincheloe, 2008; Goldsmiths, 2010, Salema, 2018). When this focus becomes the major demand for learning, it contradicts the essence of learning for developing learners' competence which they need for effective engagement in actual life experiences during the length of their study, but specifically so after they graduate. The focus on learners' competences makes it important to determine assessment content, methods, tools, techniques and duration of assessment implementation in advance of designing and starting courses or programmes. Assessment should not be an afterthought or ad hoc event. Major assessment demands should be embedded or highlighted in curricula as well as along the length of teaching and learning processes since learners ought to contribute to assessment along the entire continuum of teaching and learning. Hence, assessment ought to be planned to enable teaching and learning partnerships which encourage learners' autonomy and freedom to participate as they bring into assessment their voices as suggested by Bain (2010).

### **Transformative Assessment (TA)**

Transformative assessment (TA) in education involves assigning course tasks, activities, tools and strategies that assist learners to acquire requisite competence (knowledge, skills and values) needed to positively accomplish socioeconomic, cultural and political responsibilities in a manner that enables achievement of development targets. This way of conceiving TA has implications on authentic / realistic assessment designed to focus on actual students' lived environments and the peoples' needs in such environments. Under this perspective assessment does not solely focus on guiding learners to pass internal and external examinations and gaining entrance into higher education levels but also focuses on guiding students, through assessment practices aimed at attaining practical competences which relevantly play part in improving their own, and other peoples' livelihoods. This is especially so after learners' graduation. TA always ensures that assessment tasks, activities, tools and strategies are aligned with development goals and outcomes. Therefore, TA ought to be designed to mirror societal needs and learners' requisite competences for their effective performance in society (Black and Wiliam's, 2018; cited in Tolgfors, 2018).

TA has the potential to develop learners' capacity when preparing for accomplishing their current responsibilities as, as well as when projecting future experiences or practices. This way of perceiving TA resonates with Nielsen's (u.d.), concept of 'assessment [as being] greater than testing/examinations and evaluation; it is thus a large puzzle that when put together guide an understanding 'of what learners do and do not understand and what they do and do not know' as they go through a study unit, a course or a programme until they complete. All things that take place along a study process may be assessed at any time (Tolgfors, 2018) depending on learners' extent of understanding (or misunderstanding), teacher's professional expert decisions, and at other times according to prescribed principles from institutions, nations, or international organizations such as the United Nation Organization (UN) and its allied constituents including UNESCO and UNICEF. In all cases, learners' concerns ought

to be considered since learners are among major beneficiaries of the education enterprise. It is upon these considerations that Tolgfor's (Ibid) concludes that

*“Transformative assessment implies an assessment culture that is divergent, rather than convergent. Through critical engagement and students influence, the assessment practice can be adapted to the different needs and circumstances of students in heterogeneous groups. Learning is [considered] as something more elusive than individual criteria compliance and could involve collective understanding that is collaboratively produced through educational experiences (p. 4).”*

## **Transformative Processes**

TA processes engage critical thinking, problem solving, and other life skills such as collaboration, negotiation, moral conduct, and professional specific skills. All qualities can improve learners' capacity to inform development plans and development strategies that are relevant, practical, current and futuristic focused in nature. Under TA, learners' capacity to transcendently nurture their gained competences for changing their own and societal mundane practices is enhanced through reflection, critical analysis, negotiation, and validation of practices that are necessary in bringing about desired changes in society. When learners attain sufficient competence as reflected above they become competitive practitioners within the contemporary local and global developments.

TA is thus considered the kind of assessment that captures learners' needs and serve multiple functions. The functions are improving and extending students' current levels of learning; determining and building students' requisite competences; providing teachers, learners, educational institutions and other educational stakeholders feedback on effectiveness(or ineffectiveness) of teaching and learning; informing potential employers about learners' competences and their potential to perform at job markets, determining institutional accountability to their establishment mandates and enhancing learners' motivation to learn as well as learners' effective participation in their actual lived environments (Kitta, 2014; citing Koyalik, 2002; Eggen & Kauchak, 2004; Salema, 2017; Tolgfor, 2018).

## **Possibilities and challenges: TA Practices in Tanzania Secondary Schools and Universities**

The listed functions to be accomplished when transformative assessment is employed, are common across most education systems across nations, including Tanzania. However, given national contextual variations, not all functions have been comprehensively accomplished due to reasons which include limited teachers' competences to implement TA. Other educational limitations experienced in Tanzania contexts exacerbates the limited teachers' competences challenge; inappropriate and inadequate secondary schools/higher institutions' infrastructure, facilities, and large classes, see Figures 2 and 3 which represent a university study room with fixed working tables and a large class (overcrowded) pictured in one secondary. The names of the university and secondary school from which the pictures were obtained have been purposely given a pseudo names of Havo University and Lughenjo secondary school respectively. The depicted conditions limit compliance to guiding principles for

implementing TA. They constrain teachers' involvement, learners' democratic participation and a number of TA assessment processes (Sallema, 2017, Sanga, 2016).

Where teachers have TA competences, the practice of TA could be implemented in secondary schools and universities in Tanzania, but learning environments differ across institutions. Some secondary schools and universities are financially affluent while others are less affluent /or poor. Affluent institutions', learners and families are capable of accessing and affording competent and experienced teachers, learning and assessment facilities, complex functional learning infrastructure, effective remedial programmes, high opportunities to access and surf Internet sites with rich educational materials such as Open Education Resources (OERs), Mass Open and online Courses (MOOCs), online educational reference resources among which are e-books, journals and other forms of texts at online sources some of which demand high subscription fees for which less affluent /poor institutions cannot afford. Under these circumstances, less-affluent and poor institutions or families are involuntarily denied opportunities to afford and access requisite resources and services which are necessary for effective learner assessment performance through engaging TA. Affluent institutions can as well afford and access financial resources to deploy real life transformative pedagogical strategies and tools that simulate practical learning tasks and activities. For such institutions, learners are most likely to attain satisfactory pass rates, link and relate assessment to real life situations. Unfortunately, this situation is opposite for the less affluent and poor institutions. Currently, less and poor conditions is typical of a significant number of secondary schools and universities in the country, hence limited TA practices.

To address the challenges constraining TA practices, all teachers in Tanzania secondary schools and universities need to be thoroughly trained using pre-service and in-service training platforms. Such training need be designed and developed in ways that ensure teachers gain awareness of TA and associated competences to apply teaching, learning and assessment strategies and materials from online and offline texts and reference books recommended in their study programmes as well as those they can access on their own initiatives. At the end of the suggested training, teacher trainees should have gain competences that assist them to contextually improvise TA resources that are not available at their working institutions. Consideration of improvising TA suitable condition suit local teaching and learning contexts within Tanzania education institutions should guide thoughts and plans in deliberating how best to address fairness and equity along the development of teaching, learning and assessment programmes. Decisions for judging (evaluate/measure) learners' assessment performance and accompanying rewards or punishment/corrective systems for learners, their teachers and institutions should also be thought through.

Currently, challenges facing schools and universities' infrastructure and facilities have started to be addressed through a variety of actions depending on each particular challenge. For example, the Tanzania government, through the Ministry of Education, Science and Technology (MEST) has set apart a good amount of funds to address educational concerns including the infrastructure and teachers' difficulties (Minister- MEST, 2019). In contexts where current secondary schools and universities' facilities are arranged / organized unsuitably for effective TA practices, the facilities could be rearranged (see

Figure 2) to suit TA approaches that recommend extensive use of collaborative activities varying from negotiations, group discussions about real or imagined issues to other tasks and activities that demand collaborative initiatives. Tables and chairs fixed to the floor can hardly be used for TA competent based tasks and activities which require sufficient space and learner/teachers' movements. Due to the fixture represented in the picture, learners cannot easily and comfortably turn round or move to work with peers as they work to accomplish group work or perform extensive psychomotor activities. Secondary schools and universities can utilize the 2019 funding opportunities currently pronounced by the Tanzania government through the Minister of Education, Science and Technology to address infrastructural challenges. Generally, TA recommends engaging cognitive, psychomotor, and affective domains in assessment tasks. For this purposes assessment working area size, organization, ventilation, light and other imperatives of TA teaching and learning activities ought to be considered. For long term solutions effective teacher training programmes can be part of the solutions to infrastructural deficiencies through inclusion to teacher education curriculum topics with reference to improvisation when teachers encounter various challenges that inhibit effective learning and assessment.



*Fig. 2: Fixed tables and chairs at one of the Havo in Tanzania (Havo is a pseudo name for the university)*



*Fig. 3: A picture of an overcrowded secondary school classroom at Mkede Secondary school (Lughenjo is a pseudo named for the school).*

## Engaging Assessment for Learning (AfL) in Building Learner Competence

Teachers in both secondary schools and universities in Tanzania are generally aware of “assessment as a process of determining the extent to which teaching and learning objectives [have been met]” (Salema, 2017, p. 1). They are also aware of three common forms of assessment namely diagnostic, formative, and summative assessments (Kitta, 2014; Sanga, 2016). Sanga informs that diagnostic assessment is appropriately used by teachers to gain an understanding of students’ strengths and weaknesses so as to help the teachers plan better for subsequent teaching. This form of assessment, enables analyses of learners’ capabilities to display their competences at certain levels of their study. Results from diagnostic assessment inform teachers in making decisions about each learner (or a group of learners) regarding how best to assist them understand what they originally misunderstood. Diagnostic assessment can be conducted using either formal or informal tools. Teachers employ a variety of such tools among which are aptitude tests, examinations, interviews, self-assessment tasks, observations (Sanga, 2016; citing Darling Hammond & Snyder, 2000; Omari, 2011; Stiggins, 2007) and tracking students’ background education experiences and performance. Much as this type of assessment may be useful, it not a common practice in majority Tanzania secondary and universities.

Summative assessment is commonly used to evaluate student’s performance at the end of a course, a unit of a course or programme. Information from summative assessment assists in judging learning achievement in terms of learning outputs and institutional fulfilment of its mandate or accountability (Kitta, 2014). On the basis of using summative assessment for judging learners’ performance at completion of specified chunks of taught content, it has deserved its classification as an ‘assessment of learning’. The functions of diagnostic and summative assessments are important, however, given that the core aim of schooling at all levels of education is developing learners’ competences for their successful engagement throughout their lives; there is need to give more attention to formative assessment especially when formative is implemented systematically and frequently.

Formative assessment (FA) practices have shown potential to open more opportunities for learners to improve their learning by providing opportunities for learners to build self-esteem, confidence, self-criticism, in-depth-reflections, cultivating willingness to learn, personalizing and developing ownership of learning. They also motivate learners and their teachers as they freely negotiate, personalize learning, and develop learners’ independence (OECD, 2005). When these conditions are met, learners enjoy learning processes and are most likely to develop the desire for engaging in lifelong learning (LLL) which constitutes an imperative for Tanzania citizens’ effective and continued participation in education endeavours within the 21st Century’s knowledge economy (Sumra, 2018).

FA assists learners to effectively improve their learning, on this basis, FA has been referred to as ‘assessment for learning (AfL) in the Northern Ireland Assessment for Learning: A Practical Guide text (u.d). *The guide provides an extensive analysis and discussion of AfL as the consistent or frequent use of formative assessment (FA) along day-to-day teaching and learning processes* (Sanga, 2016; Harris and Cullen, 2010; Northern Ireland AfL Guide, u.d). This implies that

formative assessment that is unsystematic and ad hoc does not fall under the AfL category. AfL is considered the most effective in attaining transformative assessment targets because it systematically, continuously frequent, and engages learners and teachers in reviewing the quality and quantity of teaching and learning (OECD, 2005; Harris and Cullen; 2010; Sanga, 2016). Because of its day-to-day consistence practice in classrooms Sanga (Ibid) has given AfL an alternative nomenclature; '*classroom assessment*'

Sanga's investigation of Tanzania teacher-educators' perception of assessment revealed that assessment in the country is generally practiced as a one-short activity taking the form of tests and examinations, this way of assessing learners disconnects teaching, learning and assessment. Sangas position resonates with Mkimbi & Kitta, (2019) argument that instead of developing learners' competences through assessment practices learning is concentrated in ensuring that learners cover curriculum content and review past national examination questions so as to ensure learners attain high scores at national examinations. The practice implies that assessment in the country is generally not systematic and consistent, it contravenes AfL principles. Effective AfL ought to be systematically consistent and not an ad hoc activity. Further, Tanzania scholars Jidamva (2012), Nzilano (2013) and other East African scholars Najjumba & Marshall (2013) and Otaala, Maani & Bakaira (2013) have lamented that teachers in East Africa are taught to measure learners' learning abstractly through paper and pencil tests and examinations lacking engagement of learners in relevant assessment practices which provide learners with opportunities to gain competences that may positively transform learners' ways of thinking, being and doing things. As alluded to earlier, transforming learners encompasses their experiences in cognitive, psychomotor and affective domains. Sanga (2016, citing Huba & Freed, 2000). The Northern Ireland AfL Practical Guide, point out that consistent engagement of the three domains in assessment practices guided by AfL ensures developmental changes in the way learners internalize and practice what they learn at secondary schools and other learning institutions.

AfL assessment provides opportunities that enhance learning through tasks and activities organized formally or informally, to measure learners' extent of conceptualizing thoughts and practical experiences and then acting upon them. Learners' conceptualization and actions upon what they learn is considered a norm where curriculum is implemented in classes, but the practices of ALL make these particularly relevant 'for after learners graduate' and get engaged in their life-worlds. Learners who are taught using AfL gain capacity to transfer their learning from schools to their environments because AfL requires practical oriented teaching and learning. In-class practices built along taught curriculum content attract assessment tasks, activities, feedback and discussions which inform both teachers and learners about competences (knowledge, skills and values) gained from the taught curricula. By its essence, AfL tasks and activities are designed to encourage and motivate learners' to learn in collaboration with peers, teachers and at convenient stages with their parents and community members (see, the *Northern Ireland AfL Practical Guide*). Learners can use knowledge gained from AfL practices to plan, make decisions, innovate future learning strategies as well as community engagements. Accordingly, AfL is closely embedded into all that takes place in a learning environment and practitioners may use a variety of techniques. In order to make effective use of AfL in Tanzania, teachers in secondary schools and

universities have to be made aware of fundamental AfL guidelines, which oblige teachers to design assessment that have potentials for:

- Encouraging the development of learners' independent learning skills through generating structures of scaffolding learners' self-management skills, independence in accessing learning resources, engaging in class tasks and activities, and using teachers and peer feedback effectively for learning;
- Assisting learners to independently develop skills for asking and responding to questions from teachers, peers and others, negotiate (dialogues) issues emerging from discussions about learning tasks and activities, make effective use of feedback and allow them to manage demanding skills as they reflect 'learning' for themselves and their peers;
- Providing information in clear, friendly, meaningful, and relevant language.
- Making learners aware and understand that committing error (mistake) while learning is not a crime but an opportunity to learn;
- Making learners aware and understand that facing challenging tasks and activities is not stupidity but a way of life; learning has its own challenges and each learner encounters a challenge at some stages in school or university study experiences. Those who struggle to address the challenges they encounter are most likely to finally succeed. It is not a good idea to give up struggling to accomplish a task or as one addresses a challenge, struggles are rewarding when a learner finally wins;
- Overseeing that what is learned is transferable to lived environments; see also that there is transparency and taking responsibility along the learning continuum.
- Ensuring that learners know what is good to a learning context; this assists learners to manage quality of their work and independently assess their own work before letting others do it for them. Learners understanding of what is good enhances their sense of independence, raises their self-esteem, and increases their confidence and the joy to learn. All these aspects increase learners' capacity to responsibly make informed choices.
- Opening up opportunities to raise learners' awareness that their minds are not to be fixed; rather they have minds that can grow as they allow themselves to be resilient in the face of trouble and failure in accomplishing tasks or designing relevant activities.
- Teachers have the responsibility to make their learners realize their potential to transcend what they already know and can search for more knowledge that better addresses their learning concerns /challenges. That learners can change their mindsets and justifiably alter original thought and strategies; in this way AfL assessments have capacity to make learners resourceful and active not only in classes but also in life after school.

The preceding highlights on engaging AfL so as to enable build learner transferable competence show that AfL has the power for transforming learners. AfL practice is characterized with principles that are potential to improve learners' learning and strengthening their democratic participative capacities as they increase their questioning skills, self-esteem, independence, transcendental thoughts and collaborative effort with others. In spite of these advantages of AfL practices some scholars from Tanzania and elsewhere have shown evidence that AfL is not much used in secondary schools and universities the country (Mkimbi & Kitta, 2019; Sanga, 2016; Tshabangu, Msafiri, 2013).

Implementation of AfL is only implied in policies, declarations and decisions made in Tanzania (URT (1995, 2014); SEDP II (2010) and TCU (2018)). Such decisions are reflected in recommendations made for education institutions in the country to apply constructivism theories, competence-based curriculum, and learner-centered teaching in secondary schools and other levels of education in the country. Major recommendations in the documents carry some qualities of AfL. However, what is recommended in the national documents have not been adequately translated into practices at curriculum implementation levels. For example, Salema's (2017) research on secondary schools' assessment in Kilimanjaro Region found that learners' final scores depended on national examination grades. Learners' assessment done along their learning continuum as formative assessment in classrooms was not necessarily included in the final national scores, thus this can imply that AfL is not prioritized and even if teachers were aware of its existence they might not be interested to engage it. Salema found no clear policy at the National Examination Council (NECTA) that ensures that continuous assessment scores from schools were presented and combined with the national examination scores to determine passing or failing candidates. Salema also found that most teachers (64%) did not use AfL at all, 56% of the students have never engaged in peer review practices and only 53% have engaged in group assessment tasks. These findings show some indicators that currently Tanzania's engagement of AfL is limited, yet it is one of the most preferred form of assessment to assist learners' learning that maximize high learners' performance and acquisition of competences that are transferable to learners' lived environments.

## **Conclusion**

This paper has discussed the context of assessment by connecting assessment with the chain of processes along which education and curriculum are implemented. The connection was considered necessary because assessment does not exist as an independent entity, it is connected with other things that together constitute a defined system of education; policies, intended learning outcomes, curriculum, teaching, learning/relearning, assessment and competences needed for employment. The paper has as well has highlighted the need for transformative assessment (TA) in Tanzania secondary schools and universities due to inherent limitations currently experienced in assessment practices in the country (Mkimbi & Kitta, 2019, Salema, 2017). TA has been defended for use as an approach that guide assessment which improves learning and emerging learning outputs and outcomes. TA is a practical based type of assessment; hence it guides a shift from current assessment that focuses on pen and paper (written) questions and answers activities to assessment



with potential to improve learning through building learners' competences for effective participation in transforming lives. For TA to succeed in current transforming assessment approach, the author recommends the need for extensive use formative assessment in its practice as assessment for learning (AFL).

AFL principles and practices assist learners to gain most attributes that build the foundation for effective learning. The attributes include among others developing in learners; independent learning skills, meaningful/ relevant language, self-management skills, confidence in asking and responding to questions, transferring learning to lived environments, transparency, awareness of challenges, making errors/mistakes as part of learning, etc. If these attributes and others are built in learners they are most likely to develop individuals/citizens who are confident, self-esteemed, courageous, reflective and critical thinkers capable of determination how best to address and solve problems or challenges encountered in society. They can improve existing troubling situations, create and innovate new ideas and things that transcendently transform mundane practices in themselves and in the society as a whole.

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# What to Do About Education for Industrial Economy: Signposts and Possibilities

Florige Lyelu and Wilberforce Meena

## HakiElimu

As noted in the two prefaces articles found in this volume were presented at Mwalimu Julius Nyerere Intellectual Festival held in Dar es Salaam on 22<sup>nd</sup> -24<sup>th</sup> May 2019. The main theme of the festival was: *Pan-Africanism and the Quest for Unity, Democratization and Development: The state, Markets and Knowledge Society*. This volume focuses on the Knowledge Society with sub-theme: *The Relevance of Education for Tanzania's Efforts to Become an Industrial Economy*. The presentation covered three main areas namely curriculum, pedagogy and assessment mostly in the basic education. As we reflect on the discussions after each presentation, we have used views of individuals to come up with issues stood out most:

### What emerged about relevance of curricula?

Below are key takeaways from the discussions about curricula

- 1. Philosophy of education and goals:** It is important for Tanzania to have a clear philosophy of education. This was touched in Kejo's articles and emphasis by participants. Any curriculum has to be anchored in something first and then we can start talking about the issue of relevance. However, education is guided by the philosophy of education for self-reliance as seen in Education and Training Policy of 1995 page IX and 2014 page 19. Despite this fact it seems the philosophy is not well articulated. One participant has this to say 'In Mwalimu's era we knew that we were preparing youth who believed in socialism and self-reliance. Nearly all of us understood it. After we abandoned that philosophy, what is guiding our education today?' In other words, what are goals of education. Abiogu (2014) reminds us that philosophy of education is at the very center of the whole educational enterprises. From this point of view, high priority should be given in articulating the philosophy that guide the education.
- 2. Participatory approach in curriculum development:** In curriculum development, there is a need to engage key stakeholders. The process of developing a national curriculum is a huge activity and resource driven. In addition, it happens after several years. Therefore, it is important to involve the following groups; private sectors, learners, Civil Society Organisation (CSOs), political parties and religious leaders.

3. **Teachers involvement in curriculum development, revision, innovation, change or reform:** Teachers are key curriculum implementation. However, most of teachers are not well informed on curricula issues and policies. Much has been learned about the inadequacies of top-down rational linear planned curriculum change as seen in the implementation of 2005 curriculum for primary education. This create a needed for teachers to be part of the process, as Meena (2009) stresses rather than being humble or cogs implementers of decisions made by others.
4. **Implementation of competence-based Curriculum:** Although Tanzania has adopted competence-based since 2005 but it is not well implemented because of four things: teachers' incompetence, assessment system, large class sizes, shortages of teaching and learning materials.
5. **Sign language:** To ensure that deaf learning and communicate sign language is important. However, not much have been done to have a standardized national sign language.
6. **Curriculum content:**
  - Curriculum has to include the contents of agriculture, fisheries and livestock keeping.
  - The curriculum in secondary education need to focus in three things: the journey towards industrialization, analyze the vision towards industrialization, by looking into standards, implementation and intended results.
  - Schools curriculum has to cover three important things: basic knowledge, individual development and various social skills, for example technical skills, writing and others.
  - Competencies for an industrial economy include science-based education, ICT skills, creativity and problem-solving, serving and investing, hardworking, entrepreneurship, self-development, responsibility, discipline, respect for life, self-confidence, self-esteem, professionalism and innovation.

### **What emerged about the appropriate pedagogy for today's African learners?**

Below are key takeaways from the discussions about teaching and learning

1. **Learner and society.** Pedagogical approaches need to change so as to suit learner characteristics and societal matters. The 21<sup>st</sup> Century pedagogy needs to have the following: adequate and content-based knowledge as well as link between theory and practice. Inference should be for better living not for money – which is liberation and learners should be motivated to be self-aware and to have self-esteem and discoverers. The 21<sup>st</sup> Century learners are media-driven and they are digitalized. They want to make difference and not just to get jobs, they are adaptable to the environment, better educated, informed, researchers, and they are multitasking.

2. **Shifting from teachers-centred teaching techniques:** Teachers relies on lectures, books which leads to limited linkage on what is being taught and students reality. As a result, this situation leads to silencing student thinking. The teacher-centred teaching approach persists in schools up to universities. This results into the accumulation of many graduates which are not employable. There is a need to reflect on our teaching practice. Students should be taught how they should learn.
3. **Improvisation of teaching materials:** There is minimal use of locally available resources. Think of a country like Tanzania with adequate resources, emphasis should be on the use of locally available resources. Teachers need to connect theories and practice or what is happening today?

### **What emerged from current assessment practice?**

Below are key takeaways from the discussions about assessment

1. **Assessment of affective domain:** Most of concentration is on the assessment of the cognitive, psychomotor and manipulative skills. Yet our assessment does not address itself to the affective domain or values. However, assessment of affective domain was given due weight during Mwalimu Julius Nyerere era of education for self-reliance.
2. **Assessment of intended competencies:** The current curriculum is competence-based and therefore assessment has to focus on intended competences. The main concern is to ensure alignment between intended, implemented and assessed curriculum.
3. **Continuous assessment.** The current teaching is examination oriented and it completely restricting teachers' freedom in teaching. This has made the national examination formats and question papers to become implicit curriculum. Therefore, there is need to provide teachers with more autonomy in assessment.

## Questions asked

Obama said yes, we can. Magufuli said Tanzania would be industrialized and become a middle-income economy by 2025 and Mengi spoke of the same thing in his book called "I Can, I Must, I Will". Now, what do their ideas mean to you?
We are talking about the relevance of education. I think we need to ask, what is relevance? Who decides on what is relevant? a curriculum has to be anchored in something and then we can talk about the issue of relevance.
In the past when we were students we were guided by the education for self-reliance policy. What does our policy say now? What are our educational goals? What do we want our children to achieve? And are we guided by research?
How could we align the intended curriculum, enacted curriculum, and assessed curriculum? What we expect children to be taught is different from what the teacher teaches them. And what is assessment like? How are children assessed?
Does Tanzanians and Africans have enough understanding and knowledge for them to be able to improve our educational system? If yes, do we know the alternative education that we need to provide? If yes, why don't we act to make broad changes to our educational system so as to offer an education that reflects our aspirations as Tanzanians?
What if one has a class of over 400 students or sometimes 800 students? And yet you are saying we should be friendly, we should adopt a participatory kind of assessment, and we should allow students to ask questions.
I wonder what else we should do, apart from administering tests, having group assignments, or group presentations?
If the curriculum wants children to be taught certain skills, for example cooking or artwork, how is that assessed so that we know that the children have acquired such skills?

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