

## SYNOPTIC SCRUTINY OF PEDAGOGICAL PRACTICES FOR DEVELOPING FIVE MINDS FOR THE FUTURE IN TANZANIAN NON-FORMAL SECONDARY SCHOOLS\*

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### **Abstract**

*The paradigm shift from knowledge based training (KBET) to competence based (CBET) training in Tanzania was meant to create a challenging intellectual foundation to equip Non-Formal Secondary School Education (NFSE) graduates with competences to meet the dynamic changes within the 21<sup>st</sup> Century. This article describes how the five minds for the future have been integrated in the NFSE curriculum as a reflection of lifelong learning among children and youths who missed formal schooling in Tanzania. The study was necessitated by an outgrowing cry that the graduates who went through similar curriculum did not demonstrate the competences associated with the five minds in their real life (Ndyali, 2016). What often went unsaid along with the complaints against graduates in Tanzania is how the elements of five minds have been nurtured during actual pedagogical practices. Therefore, this study reviewed the Education and Training Policy (ETP) of 2014, the Non-Formal Secondary Education Curriculum (2010) and the books of five minds for the future by Howard Gardner (2006) and Frames of Mind by Howard Gardner (2007). The analysis of the information gathered revealed that the education and Training Policy (2014) as well as non-formal secondary school curriculum features the five minds for the future. Similarly, another findings was that the curriculum materials had insufficient content which may enable non-formal secondary school learners acquire the five minds for the future. Further, it was revealed that there is limited instructional strategies, limited use of teaching materials and limited use of assessment strategies. It is, therefore, concluded that in order to improve the characteristics of non-formal secondary graduates three areas*

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*should be improved namely teaching and learning materials, instructional strategies, and assessment strategies.*

**Key words:** *Curriculum; Non-formal Education; Open Schools; Five Minds for the Future; Pedagogical Practices.*

## **1. Introduction**

The contribution of Non-Formal Secondary Education (NFSE) to development stays at the center of educational policy and practice across the world (Davis & Gardner, 2012). Many countries, through the ministries responsible for education, have responded to the statement by Davis and Gardner above by creating a sub-sector through which NFSE is accommodated. Tanzania, in this context, as seen in the Education Sector Development Plan (ESDP) (2017-2021) has Adult and Non-Formal Education (ANFE) subsector. This, in addition to short vocational courses, provide youth and adults with several options for alternative learning to mainstream back into formal education or simply acquire basic and functional literacy and continuing education. The Adult and Non-Formal Education (ANFE) is particularly responsible for Non-Formal Secondary Education (NFSE). Fundamentally, Non-Formal Education (NFE) is any organized and sustained educational activity outside the school system which offered to people who lack the opportunity to acquire formal schooling (URT, 2012). NFSE in Tanzania aims to provide out-of-school with alternative or second-chance avenues of learning, as well as the option of mainstreaming back into general school system. Without judging whether the names are correct or not, Tanzanian NFSE is also commonly known as Qualifying Test (QT), Secondary Education for two years, Secondary education evening mode and Open and Distance Learning (ODL) (Bwatwa & Kamwela, 2010).

Globally, countries have been implementing NFE/NFSE albeit with different approaches. In Europe, for example, Switzerland is implementing NFE through modular course design and is organized and regulated by professional body though it is not very widely spread (Werquin, 2010). In Spain, the possible framework for the recognition of non-formal and informal learners has greater flexibility and is considered on lifelong learning (Werquin, 2010). Besides, Finland, and German have established non-formal secondary laboratory learning environment to support Chemistry learning and sustainability education for all learners (Affeldt, Tolppanen, Aksela, & Eilks, 2017). Non-formal secondary school education has been helpful as equivalency program for girls in developing countries, like Asian countries which exhibit a gender gap in secondary education (UNESCO, 2012). Taking Africa, specifically Uganda, NFE is conceived as a complementary flexible package of learning which is designed in consultation with the indigenous community to suit the demands and lifestyles of the community (Uganda, 2008).

Principally, for people in a specific country to successfully participate in a labor market, certain features of the mind have been identified as critical. Gardner (2006) defines these features to include disciplined mind, synthesizing mind, creating mind, respectful mind and ethical mind. Gardner emphasizes that these

features of the mind determine the future of that particular country (Gardner, 2006). It has been established that the integration of the features/ elements of the five minds for the futures in education system enable learners to solve their daily problems, think critically, be competent in their work, be able to innovate and create, be good workers and be able to cope with the rapid global changes in the 21<sup>st</sup> Century. Development of the five minds in learners depends on how the curriculum has been designed to accommodate the five minds as well as how the designed curriculum is being implemented around the pedagogical principles.

Tanzanian Secondary Education Curriculum has been designed to inculcate all five minds for the future which covers both formal and non-formal secondary education. The overarching goal of this curriculum is to prepare youths to effectively and efficiently compete within the 21<sup>st</sup> Century (TIE, 2010).

There has always been a quest to realize the engagement of pedagogical practices (during curriculum implementation) to develop five minds for the future. This is because what makes the five minds for the future important is their contribution to ones' social, psychomotor, and cognitive development to fit in the labor market as reflected in the bloom's taxonomic domains. The five minds for the future are also emphasized in developing countries but the degree of emphasis and awareness differs from one country to another (Lester, 2011). The overall objective of this study is to provide an overview of the extent to which non-formal secondary school education curriculum has been implemented through pedagogical practices to develop the five minds for the future among non-formal secondary school learners in Tanzania.

## **2. Methods**

### **2.1. Methods of Data Collection**

The use of public or private documents is one way of collecting data in the work of research. This study did document reviews. It has been established that document review is valuable and a stimulus for paths of inquiry that can be perused only through direct observation and interviewing. The researchers reviewed the Education and Training Policy (ETP) of 2014 (URT, 2014), the Non-Formal Secondary Education Curriculum (2010) and the books of five minds for the future by Howard Gardner (2006) (Gardner, 2006) and Frames of Mind by Howard Gardner (2007) (Gardner, 2007). The most important rationale for reviewing the mentioned documents was to check the extent to which the policy and curriculum emphasize and direct development of the five minds for the future among non-formal secondary school learners. Further, the books of Five Minds for the Future and Frames of Mind to explore if the content may enable non-formal secondary school learners to acquire the five minds for the future to respond to the rapid global changes in science and technology. Table 1 below shows the type of document reviewed and the information sorted.

**Table 1. A Summary of the Documents Reviewed**

S/N	Type of the Document	Information Sort
1.	Non-formal secondary education curriculum (2010)	Inculcation of the features related to disciplined mind, synthesizing mind, creating mind, respectful mind and ethical mind (Five minds for the future)
2.	Education and Training Policy (2014)	Position of non-formal secondary school education statements on features of five minds for the future Non- formal secondary education statements
3.	The book of five minds for the future (2006)	Content
4.	The book of frames of Mind (2007)	Content

### **3. Findings and discussion**

#### **3.1. Five Minds for the Future**

Five minds for the future (Table 2) are competencies that folks ought to attain in the 21<sup>st</sup> Century skills to make them become good leaders, managers, workers, and citizens in the world (Gardner, 2006). In the context of non-formal secondary education, the five minds for the future are 21<sup>st</sup> century skills that enable non-formal secondary school learners to solve their daily problems today and future to live peacefully, competently, and confidently wherever they are. Howard Gardner who developed five minds for the future concepts in 2006 argues that, due to tremendous changes in science and technology, people need to have these five minds for the future to line up comfortably in their endeavors in places, such as schools, work, and society. With these five minds, young people acquire competences to help them respond to the rapid global change (Gardner, 2006). Besides, there are other minds related with five minds. These include Bloom taxonomies (cognitive, affective, and psychomotor domains); Finks taxonomies and Huit taxonomies.

This study is limited to five minds for the future for they have been observed to fit the needs of non-formal secondary school learners in their capacity to compete in the labor market and solve day to day problems amidst the tremendous scientific, political, economic, and technological changes. As a matter of fact, (Davis & Gardner, 2012) set it clear that one of the positive consequences of nurturing the five minds for all children and youth is that they become prepared to become both good workers and good citizens of a changing society. Put it in other words, they are at the mercy of forces which they cannot understand when intermingling them in the 21<sup>st</sup> Century. The future in this study implies that the education which non-formal secondary school learners are acquiring is useful for now and coming years in their life (i.e. lifelong learning). That is why (Mwaikokesya & Mushi, 2017) argue that one of the objective of adult learners is to find out that their learning needs are met so that they are full engaged in community as active citizens even during their retirement age and beyond. Different five minds for the future are given in Table 2 below.

**Table 2. Different types of Five Minds for the Future**

<b>Five Minds</b>	<b>Disciplined Mind</b>	<b>Synthesizing Mind</b>	<b>Creating Mind</b>	<b>Respectful Mind</b>	<b>Ethical Mind</b>
Description	Constitutes a distinctive way of thinking about the world and how a person critically looks at every issue	The action of judging information, making, meaning of it and conveying understanding to others	Thinks beyond the box by maintaining the sense of curiosity and be able to generate new ideas	One that responds sympathetically and constructively to differences among individuals and groups	Involves recognition of rights and responsibilities attendant to each role
References	(Gardner, 2006; Macnamara, 2016)	(Davis & Gardner, 2012)	(Tomlinson, 2015)	(Pava, 2008)	(Pava, 2008)

### 3.1.1. Disciplined Mind

People with disciplined mind have the ability to think in ways associated with major scholarly disciplines and major professions. They have superior arguments that are logical and have critical thinking mind (Gardner, 2006; Pava, 2008). A disciplined mind does not simply know a particular subject but learns to think (Waterhouse, 2006). A person with a disciplined mind must have at least one area of expertise, as well as those habits of the continued application so that learning can continue throughout life (Gardner, 2007). That is the reason Gardner (2007) says that "without at least one discipline under his belt, the individual is destined to march to someone else's tune" (p. 3). According to Gardner (2007), Waterhouse (2006), the disciplined mind involves spending a significant amount of time on the same topic. As a result, a person becomes an expert or master in the learned field. Research shows that, due to the ongoing emergence of new technology, people should keep learning (Wells & Claxton, 2002). Gardner (2007) highlighted that the rapid changes in science and technology, nowadays increase the demand for qualified individuals who have signs of a disciplined mind. Therefore, the disciplined mind in learning implies that students are enabled to acquire knowledge towards a certain topic, think critically, and have logical and strong argumentations in the area of their life (Waterhouse, 2006).

### 3.1.2. Synthesizing Mind

A person with synthesizing mind takes information from different sources, understands and evaluates that information objectively and puts it together in ways that make sense with the synthesizer and other persons (Balakrishnan, 2007; Davis

& Gardner, 2012). A synthesizing mind is crucial given the vast amount of information available today and growing every day, from a wide range of sources (Gardner, 2007). Gardner states that "individuals without synthesizing capabilities will be overwhelmed by information and unable to make judicious decisions about personal or professional matters" (p. 18). Balakrishnan (2007) and Gardner (2007) argue that synthesizing is not possible without some mastery of a constituent discipline and someone cannot be creative without mastery of more than one discipline. The implication of the synthesizing mind in learning is that students develop skills for analysis and decision-making which contribute to good performance in any subject (Balakrishnan, 2007).

### **3.1.3. Creating Mind**

A person with creating mind thinks beyond the box by maintaining his or her sense of curiosity and able to generate new ideas (Macnamara, 2016). Gardner (2007) argues that a person with creating mind can go beyond the existing knowledge and synthesize to pose new questions, offer new solutions, fashion works that stretch existing genres, or configure new ones. Gardner (2007) continues saying that we give special honor to rare individuals whose innovations actually change the ideas and practices of their peers. The successful learners should be able to think creatively, independently, and apply different kinds of learning strategies in new situations (Gardner, 2007; Vernon, 2006). People cannot be effective synthesizers or creators until they have at least partially mastered a discipline (Gardner, 2007; Macnamara, 2016). The creating mind in learning implies that students are enabled to come up with the new learning strategies which can simplify learning and bring new ideas in teaching and learning process for the best achievement (Macnamara, 2016; Vernon, 2006).

### **3.1.4. Respectful Mind**

Tomlinson (2015) contends that a person with respectful mind responds sympathetically and constructively to the differences among individuals and groups. They seek to understand and work with those who are different, extending beyond mere tolerance and political correctness. Gardner (2007) contends that people need to learn how to inhabit the planet without hurting one another, without wanting to kill one another or acting intolerantly. That is why Gardner states that "individuals without respect, will be not worthy of respect by others and will poison the workplace and the commons" (Gardner, 2007) (p. 19). Maslow (1998), in his Hierarchy of Needs Theory, argues that our lined self-respect and respect for others is among the human needs, which any person needs to obtain. The respectful mind is very important in the globalized and connected world (Gardner, 2007; Macnamara, 2016). The implication of respectful mind in learning is that students can have good discipline which may enhance effective and deep teaching and learning process.

### **3.1.5. Ethical Mind**

In an ethical mind, people consider their roles as citizens of their community, their region, and the globe and act in a constructive, non-egocentric way (Pava, 2008). Gardner states that "individuals without ethics will yield a world devoid of decent workers and responsible citizens: none of us will want to live on that desolate planet" (Gardner, 2007, p. 20). A person with an ethical mind can think of himself abstractly and ask what kind of a person, worker, and the citizen does she/ he want to be (Gardner, 2007; Vernon, 2006). Gardner (2007) admits that most individuals admire good work and would like to behave like others and they would like others to behave in ways that are ethical. An ethical mind reflects on different roles that people fulfill and talk about what the proper ways are to fulfill those roles and try. Though not always successful, at least, they make efforts to fulfill those responsibilities (Gardner, 2007; Pava, 2008). The implication of an ethical mind in learning is that, if both students and teachers will know and fulfill their roles, there will be massive increase in students' learning achievement.

Taking everything into account, the five minds are linked with Blooms taxonomy (Bloom, 1956) (cognitive, psychomotor and affective domains), Finks taxonomy (Fink, 2003) and Huitt domains (Huitt, 2011). In the Blooms taxonomy, the cognitive domain consist of six levels of learning where the creating mind resembles with synthesis and application level; comprehension and analysis resembles with synthesizing mind; respectful mind and ethical mind resemble with affective domain. With regard to Finks taxonomy, the level of learning how to learn and foundational knowledge resemble with synthesizing mind; application level resembles with creating mind; human dimensional level resemble with respectful mind and ethical mind. On the side of Huitt eight domains, some domains resemble with five minds for the future. For instance, affect or emotions resemble with respectful mind and ethical mind; cognition or thinking resemble with disciplined mind and creating mind; conation or violation resemble with disciplined mind; social resemble with respectful mind and ethical mind; multiple resemble with creating mind.

### **3.2. Integration of Five Minds for the Future in Tanzania Secondary School Curriculum**

To prepare her youths for effective and efficient competing within the 21<sup>st</sup> Century, Tanzania secondary education curriculum has been designed to inculcate all five minds for the future. For instance, Mathematics features reasoning mind; English and Kiswahili feature composition; Geography features identifying; Biology features individual differences while Civics features ethics. The analysis of the lower secondary school curriculum for both formal and non-formal secondary education (TIE, 2010) is given in this section through a comparative analysis. The objectives of this curriculum contain number of elements, including an element of building a respectful mind set among secondary school youth through improving their personalities, promoting in them the ability to accommodate individual differences,

varying cultures, customs and traditions as well as an attitude for respect for human dignity and human rights (TIE, 2010).

### **3.2.1. Element of Developing a Disciplined Mind**

The Tanzanian lower secondary school curriculum was critically analyzed and observed to incorporate elements disciplined mind to non-formal secondary school learners. It is developed in a way that learners can learn through nurturing self-confidence and an inquiry mind along with mindfulness in effective utilization of resources. Through the curriculum, learners are enabled to improve their ability to upgrade their mental, productive, and other life skills to meet the dynamic changes within 21<sup>st</sup> Century (TIE, 2010).

### **3.2.2. Element of Developing a Synthesizing Mind**

The Tanzanian curriculum was observed to contain an element of developing a synthesizing mind to NFSE learners by promoting the acquisition and appropriate use of literacy, social, scientific, vocational, technological, professional and other forms of knowledge, skills and understanding for the development and improvement of the condition of man and society (TIE, 2010). In particular, the curriculum inculcate a sense and ability for self-study, self-confidence, and self-advancement in new frontiers of science and technology, academic and occupational knowledge and skills thereby building NFSE learners with an ability to have aspects of five minds for the future (TIE, 2010).

### **3.2.3. Element of Creating Mind**

With regard to the element of creating mind, the analysis has revealed that Tanzanian curriculum is also well accommodative through promoting learners' ability to effectively mobilize and utilize resources. The main goal here is to create positive changes both individually and in the development of the country (TIE, 2010). This element has been accommodated within Tanzania curriculum for the purpose of building non-formal secondary school learners' capacity to apply socio-economic skills to successfully solve the existing problems in the society and meet its changing needs.

### **3.2.4. Element of Developing Ethical Mind**

Tanzania has values that are clearly stated in the constitution. Citizens are expected to adhere to the values and conduct themselves ethically. It is with that regard that Tanzanian curriculum was observed to contain an element of developing ethical mind by promoting the love for work, self and wage employment and improved performance in the production and service sectors (TIE, 2010). Besides, the non-formal secondary school education curriculum has been designed in a way that the learning outcomes will inculcate within learners' capacity to understand and uphold the fundamentals of the national constitution and the enshrined human and civil rights, obligations, and responsibilities (TIE, 2010).

As per the description given above, it is clear now that the education system in Tanzania and particularly secondary school education incorporates all the elements of the five minds for the future as observed in the curriculum objectives for Tanzanian secondary education. Indeed, the elements of the five minds for the future observed in the curriculum for secondary school education within Tanzania education system intends to solve their daily problems, think critically, be competent in their work, innovative and creative, be good workers and able to cope with the rapid global changes in the 21<sup>st</sup> Century.

The Tanzanian curriculum accommodates five minds for the future, it is likely that learners will graduate with competences of making successful transition from educational institutions to become productive workers, self-reliant entrepreneurs, responsible, good citizens, innovative managers, and selfless leaders who can boost Tanzania's development towards industrial middle class economy. There is enough evidence to support this claim that comes from Gardner (2006) and Ndyali (2016).

### **3.3. Features of Five Minds for the Future in Tanzania Non-Formal Secondary Education**

According to Gardner (2007), the capabilities for individuals to be effective in the future, there must be intellectual foundations for general education and curriculum. That is why Gardner (2007) states that "One cannot even begin to develop an educational system unless one has in mind the knowledge and skills that one values and the kinds of individuals one hopes will emerge at the end" (p. 14). Some of the features reflected in the non-formal secondary education curriculum in Tanzania are intention, content, strategies, methods, teaching and learning materials and assessment (TIE, 2010).

Curriculum represents a set of desired goals or values that are activated through a development process and culminate in successful learning experiences for students (Wiles and Bond (2007)). There are ten-valued learning outcomes that can be discussed and selected by the school community in any organization of curriculum persons in the world. These are self-esteem, understanding others, basic skills, capability for continuous learning, being a responsible member of the society, mental and physical health, creativity, informed participation in the economic world, use of accumulated knowledge to understand the world and coping with changes (Wiles & Bondi, 2007; Gardner, 2007).

These ten-values with their learning outcomes are integral features of the five minds for the future in the non-formal secondary education curriculum. The learning outcome of understanding others is a respectful mind. The capability for continuous learning is a disciplined mind; being a responsible member is an ethical mind; and creativity is creating mind. The challenge worth investigating is the amount of pedagogical competences possessed by teachers in shaping learners to attain these ten learning outcome of the curriculum since the five minds for the future elements are within these ten learning outcome outlined by Wiles & Bondi (2007).

In consideration of the Tanzanian 2014 Education and Training Policy (URT, 2014), Curriculum of Open and Distance Learning (Komba, 2009) and Evaluation

Report on Adult Education and Non-Formal Education (Bwatwa & Kamwela, 2010), the five minds for the future have been treated differently in non-formal secondary education in Tanzania. The general objective of the curriculum for ODL is to achieve the outcome of a literate society that can cope with the daily life challenges (Komba, 2009). This is what all the five minds for the future intend to achieve for learners to cope with the global rapid changes. Further, ODL aims to provide subjects reflecting the learners' essential professional needs, to increase employment opportunity and enable them to effectively perform their daily activities (Komba, 2009). In the case of the synthesizing mind, the curriculum of ODL shows how learners can synthesize huge information and come up with crucial ones in the subjects of English Language and Kiswahili, in the topics of comprehension. In connection with this, the evaluation report on Adult Education and Non-Formal Education (AE/NFE) 2010 shows that adult learners acquire skills on how to analyze different things by using Regenerated Freirian Literacy through Empowering Community Techniques (REFLECT). The report of AE/NFE (2010) instructs to develop literate, knowledgeable, and self-reliant people who are able to improve their daily production activities and live a better life (Komba, 2009).

The current Education and Training Policy (URT, 2014) emphasizes on creativity in entrepreneurship at all levels. The formal secondary education curriculum shows that one of the expected outcomes is to see a society which maintains mutual relationships and peace at all levels (URT, 2014). The curriculum of formal secondary education which as well forms part of ODL curriculum emphasizes on the respectful mind in Civic subject. This intends to develop citizens who can fully participate in civil society, advocate and respect human rights (Bwatwa & Kamwela, 2010; Komba, 2009). As seen, even the policies statements in the elements of the five minds in both formal and non-formal secondary education; what is needed now is the implementation of curriculum which stands to be investigated in view of pedagogical practices which in turn would enable non-formal secondary school learners attain the five minds for the future.

### **3.4. Pedagogical Practices in Implementing Non-Formal Secondary Education Curriculum**

Virtually, the five minds for the future may be linked to what transpires in teaching and learning processes. This may also be termed as curriculum processes. Gardner's conditions necessary for developing the five minds for the future include, among others, pedagogical practices along with adequate material resources, social interaction among learners, teachers' support from the administration, appropriate workload that matches teachers' skills set, opportunities to collaborate with and receive mentorship from colleagues and prospects for professional advancement (Gardner, 2006). Despite the fact that Tanzania secondary school education curriculum inculcates the five minds (as observed before), the graduates who went through similar curriculum do not demonstrate the competences associated with the five minds in their real life (Ndyali, 2016).

Archetypically, most non-formal secondary school learners lack some competences of the five minds which lead them fail to cope with the global change of the 21<sup>st</sup> Century. This fortiori is pointed by their inability to make judicious decisions; inability to create self-employment and, thus, causing high employment crisis among their cohort; they have been violating morals and human rights which make them bad citizens; lack of problem solving skills to master their environment; and unable to succeed in the work place as indicated in the literature (Haji, 2015).

Non-formal secondary education curriculum has been observed to contain all elements of five minds for the future while the graduates who went through similar curriculum fail to demonstrate competences of the five minds for the future (namely, disciplined mind, synthesizing mind, creating mind, respectful mind and ethical mind). Indeed, the inability of non-formal secondary school graduates to both develop minds that reflect current changes in the world as well as failure to demonstrate competences of the five minds for the future negatively affect the achievement of the national development agenda. Turnaround is required in terms of the practiced pedagogical approaches engaged by teachers. To be able to actively participate in pushing national development agenda, non-formal secondary school graduates need top skills demanded among graduates entering into the labor market. These include, among others, soft skills (good organizational, communication and public relations skills, time management, attitude, problem solving skills, etc.); customer care; innovation and creativity.

Literature shows that Tanzania had marked a paradigm shift from the traditional Knowledge Based Education and Training (KBET) to Competence Based Education and Training (CBET) since 2005. CBET has received much interest globally due to its perceived potential in producing competent graduates required in the labor market (Rutayuga, 2014) and of course whose competences accommodates all five minds for future. Competence based curriculum is a learner centered pedagogy that was published in 2005 and it is implemented in all secondary schools in Tanzania (Vavrus, Thomas, & Bartlett, 2013).

The pedagogical shift towards a learner centered curriculum in Tanzania is manifested in the expectation that secondary school graduates would be enabled to become self-employed (MoEVT, 2005). In a nut shell, Tanzania has been engaging CBET since the paradigm shift in 2005 and that involved a pedagogical shift towards a learner centered curriculum processes. The expectation was to have non-formal secondary school graduate who possesses competences of the five minds for the future and would successful compete into the challenges of the 21<sup>st</sup> Century. It can as well be evidenced that from the policy levels that there have been developments of all important competences emanating from the five minds for the future just by looking at the CBET curriculum.

Hitherto, it clear that non-formal secondary school education also use competence-based curriculum but it is evidenced in the literature that the teaching and learning practice in secondary schools remains focused on finishing syllabi rather than learning scientific theories and practices (Mabula, 2012). In connection to this, the syllabi in the non-formal secondary school education is condensed from

four years to two years. This shortage of time forces teachers to fasten their teaching to cover the syllabi on time. Therefore, it is difficult for them to maximally engage the pedagogical practices towards developing the five minds for the future among non-formal learners. The disparities, thus, seem to exist not in the design of the curriculum but on how the five elements have been nurtured during pedagogical practices. There is, therefore, creates an urgent need to investigate the extent to which the pedagogical practices have been utilized towards developing five minds for the future among non-formal secondary school learners in Tanzania.

#### **4. Improving Characteristics of Non-Formal Secondary Graduates**

The fact that non-formal secondary education curriculum contains all elements of five minds for the future, the need is then to ensure that the graduates who go through similar curriculum demonstrate competences of the five minds for the future. This will make them capable of surviving current changes in the world and positively boost the achievement of their national development agenda. As per the scope of this paper, three important areas need to be improved to improve the characteristics of non-formal secondary school graduates in Tanzania which are (i) teaching and learning materials, (ii) instructional strategies, and (iii) assessment strategies.

##### **4.1. Improvement through Teaching and Learning Materials**

Davis and Gardner (2012) argue that the development of teaching and learning materials help teachers to nurture their students' five minds for the future. Studies show that digital media technology, if integrated thoroughly into the classroom, can suit learners and provide them with a variety of ways to demonstrate their understanding. The digital media has a role to play in supporting the creating mind (Davis & Gardner, 2012; Vernon, 2006). Therefore, it is evident that using visual-spatial intelligence, as stipulated in the Multiple Intelligence Theory, can help to improve learners' creativity.

Lim *et al.* (2009) conducted a study in Singapore on the use of the technology of 3D virtual creating an island in the virtual environment of a second life by using the five minds for the future in Ngee Ann secondary school. The secondary school students was used as a sample. The study found that, the use of five minds for the future in the technology of 3D in learning in secondary school has four advantages. According to Lim *et al.* (2009) these advantages are: One, the five minds for the future provides new opportunities for enriching the curriculum. Two, the five minds for the future provide opportunities for students to think critically and be creative. Three, the five minds for the future encourage the true practice of the constructive principles, empowering students to learn rather than to be taught. Four, the five minds support students to come closer to an almost real-life experience that allows them to move and as a fully-orbital, real-time user-controlled avatar exploring and interacting simultaneously with other participants in the virtual world. Therefore, the characteristics non-formal secondary school learners may be improved to face the global changes of the 21<sup>st</sup>Century through increasing the capacity of non-formal

secondary school teachers to use different teaching aids and multimedia in teaching and learning process to develop the five minds for the future among learners.

#### **4.2. Improvement through Instructional Strategies**

Studies show that most of the instructional strategies used to cultivate the disciplined mind can also be used to develop the synthesizing mind (Davis & Gardner, 2012; Gardner, 2007; Vernon, 2006). For instance, Gardner (2007) provides an example of a child who is presented with multiple entry points into a topic or idea as being well positioned to draw connections and identify common themes across diverse forms of representation. Observation and documentary review methods were used to investigate instructional strategies in United States of America. Research shows that, without an understanding of the methods and goals, students will not be able to make reasonable decisions on the course of action when confronted with a set of options or information as state elsewhere that *"as the world we inhabit continues to change, educators must frequently re-evaluate the goals of education and the type of minds we wish to cultivate in our schools in the 21<sup>st</sup> century"* (p. 108) (Gardner, 2007; Lim *et al.*, 2009).

On top of that, Gardner (2007) argues that educators must frequently re-evaluate the goals of education and the types of minds we wish to cultivate as the world we inhabit continues to change. Therefore, using different instructional strategies and methods in the teaching and learning process can create a big room for integrating the five minds for the future thereby improving the characteristics of non-formal secondary school graduates.

#### **4.3. Improvement through Assessment Strategies**

Duening (2010) investigated assessment strategies in identifying the five minds for the future in entrepreneurship and came up with the following results: One, five minds for the future support students develop stress recognition and management skills; Two, five minds for the future help teachers teaching students the wide variety of financial resources available to them; Three, five minds for the future help teachers teach students how to network and communicate with people who may be able to help them solve problems. Duening (2010) argues that Gardner's five minds for the future provides not only an intellectual foundation for curriculum development but also suggests specific ways for educators to use in evaluating their effectiveness in achieving their targeted aims. Rossi (2007) argues that although Gardner's five minds do not provide insight for specific professions, the overall approach to identifying essential minds and then building curriculum suitable for attaining seems sound.

In order to develop the five minds for the future among learners, different assessment format should be well structured to enable students to probe, develop reasoning and critical thinking skills "meaningful learning" rather than the ability to return memorized facts "rote learning". Therefore, in order to improve the characteristics of non-formal secondary school graduates, assessment should be taken serious. How teachers assess the acquisition of the competences emanating

from the five minds for the future is critical. is very important among learners since Also, there is a need to improve teachers' competences in developing appropriate assessment tools as well as how they ought to bring feedback to learners by empower them and making scaffolding. Providing feedback to learners will in turn help non-formal secondary school graduates to demonstrate competences of the five minds for the future in their daily living endeavors.

## 5. Conclusion

If we are to create kinds of leaders (in business, government, politics, etc.) to push national development agenda, we need to ensure that the five minds for the future are developed among non-formal secondary school learners as well. This is because, out of school children and youth who missed opportunities for formal schooling are being served under non-formal secondary schools and forms a significant portion of tomorrow's leaders. Therefore, it is important that education practitioners in the daily endeavors are fully equipped with necessary competences that would in turn influence their pedagogical practices in developing five minds for the future during planning, policy development, curriculum design, teaching and learning processes as well as assessment of learning outcomes. In the theory level, indicators should be set to show whether our country is on the right track in utilizing pedagogical practices towards developing the five minds for the future among non-formal secondary school learners. At materials level, we must devise set of domains through which teachers and book authors should consider when developing teaching and learning materials to ensure pedagogical practices are utilized in developing the five minds for the future among non-formal secondary school learners. Lastly, at methodological level, there is a need to equip qualitative researchers with relevant knowledge so that they conduct studies to the question of how pedagogical practices have been utilized in developing the five minds for the future within the scope of non-formal secondary school education in Tanzania.

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