

Rethinking Education Today and Tomorrow from the African Context

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ABSTRACT

Contemporary African education systems and teachers have received diverse criticisms. Dialogues continue in both developed and developing worlds regarding how to rethink and restructure priorities for quality education and the effectiveness of teachers. General public discourses are negative and express dissatisfaction with the current education system given unfulfilled expected functional literacy to prepare broad-minded, inventive, active citizens who possess both personal and interpersonal skills, not only literate in reading and writing. Society expects teachers and schooling to be a solution for sustainable growth. However, contemporary African education systems' capabilities and capacities to offer application-based-pedagogy for today and future utility given current African instabilities are questionable. Given such discourse predicaments the key research question to ask is: How can Africa create a successful education system of quality and substance? Through thematic inquiry of literature complimented by teaching practice supervision observations, this treatise discussed functional educational philosophy supporting multiple discourses as key to achieving quality education. Multiple discourses, underpinned by an African philosophy theoretical framework, are treated as the ability to see quality education and philosophies of education through kaleidoscopic lenses, as complementary and capable of being applied in a holistic, eclectic fashion. However, quality education and its components are inextricably linked and broad. This study focused on teacher education and pedagogy as key components of quality education, based on the argument that effective teaching is consequential, however, not a panacea in providing quality education particularly in an environment of scarce resources. Findings suggested that most African education systems should rethink priorities by shifting from theoretical-pedagogy orientation to practical-pedagogy focus. African education systems should focus on preparing learners to be inventors versus being consumers, allow learners to spend more time in the field of work than in the classroom within the context of both universal unchanging epistemologies and emerging technological trends.

Key terms: Rethinking, Education, Today and Tomorrow.

INTRODUCTION

Most African education systems are said (Fuller, 1987; Heyneman and Jameson, 1980; United Nations, 2014; Comer in Finsterbusch, 2002; Kwapong, 1988; Bergmann, 1996; Pennycuik, 1993; Evans and Mendez Acosta, 2021) to be failing, given that formal schooling struggles to prepare students to become successful workers, creators of employment, contributive and useful family members, creators of democracy, and active citizens. Most, if not all, African education systems are driven by a summative-examination-oriented focus and seem to be more inclined towards obtrusive proof of being educated, measuring success by high theoretical test score grades and symbols (Raywid, 2003; Elieshi, Mbilinyi and Rakesh, 2004). Education in Zimbabwe has noticeable evident limitations and one could argue that these are common to many African countries today and are likely to persist if not addressed. African formal schooling tends to emphasize book knowledge, where education is inclined toward stressing knowledge acquired through theory and not the real-world examination of phenomena. But test scores alone are too narrow to measure the effectiveness of an education system, especially considering its contribution to social, economic and political outcomes or in measuring sustainable development achievement (Robert, 1995; Nyamnjoh, 2004; Nyerere, 1968; Nyerere, 1987; United Nations, 2014; Africa Sustainable Development Report, 2022). A good education system should help students to solve real life problems encountered at work and in personal relationships, to take

responsibilities of caring for themselves, their families, the community and the country, to get along well in a variety of sustainable life settings and to be motivated, contributing members of a democratic society or to be creators of a democratic society (Nasango and Musungu, 2009; Misia and Kariuki, 2011; Dewey in Curren, 2007; Rousseau in Curren, 2007; Peters, in Curren, 2007). Sustainable learning requires conditions that promote a multi-discoursed education system that does more than just teach children basic academic skills of reading, writing, mathematics but should see literacy skills inextricably linked to out-of-schooling experiences and in a wide spectrum.

Indeed formal schooling is an aspect of achieving sustainable development and under normal circumstances should simultaneously facilitate a substantial future for its beneficiaries. Basic academic skills grow out of the fertile soil of overall development (United Nations Children's Fund, 2004; Pennycuick, 1993; Psacharopoulos and Woodhall, 1985) and should provide the platform for higher-order learning relevant to social dynamics. In other words, any relevant education system should equally focus on all important developmental pathways needed by a productive human being physical, social interaction, psycho-emotional, ethical, linguistic, intellectual-cognitive, and eventually academic (Bates, 2016; Kelly, 2004). However, most, if not all, African education systems seem to focus more on pen-education (Huitt, 2009; The World Bank, 1988; Fuller and Snyder, 1991) intellectual-cognitive teaching and testing given a theoretical-summative-examination orientation at the expense of practical developmental skills much needed for sustainable and economic development. Teachers today are often much more anchored in subject matter than student holistic (head, hands, and heart) development.

Given such formal schooling effectiveness challenges the key objective of this study is to dialogue and critique how contemporary African education systems can be restructured and refocused to be relevant to today's and future sustainable development needs.

METHODOLOGY

This paper is a theoretical-conceptual exploration and analysis of the pivotal role a key education input teachers can play as frontliners at every education level toward achieving quality, sustainable education for today's and future generations' developmental needs. Literature was gathered from published literature sources complimented by the researcher's personal discourses on pedagogy, researcher's general observations, and experience in teaching at primary, secondary, college and University over ten years and in supervising diverse student teachers on teaching practice. Gathered literature purposively sampled will be thematically analysed and categorised using its similarities and differences under headings and subheadings. As the sole instrument gatherer of data using critical reading discourse and text questioning, the researcher will be focusing on answering key research issues guided by research questions and objectives.

The Problem

Contemporary African schools and teachers (World Conference on Education for All, 1990; Fuller, 1987; Fuller and Snyder, 1991; Heyneman and Jameson, 1980; Verwimp 1999; Edwards, 1985; Oliveira and Farrell, 1987) are not adequately doing enough to prepare learners for solving Africa's current and future challenges given multiple instabilities haunting the continent political instabilities, wars, Ebola, HIV/AIDS, severe decline in agriculture and food production, energy challenges, failure to keep pace with natural population growth and urbanisation, pollution, corruption, increasing gap between the poor and the rich, unemployment and lack of opportunities, an increase in food imports in most African countries, economic instability, just to mention a few. It is the belief of the researcher that, if Africa had practical, relevant education systems that promote scientific inquiry, some of Africa's contemporary social, political, and economic challenges could be mitigated or reduced to insignificant levels. All African countries at the time of their independence made courageous efforts to effect educational reforms and also perceived formal schooling as a key vehicle to achieve sustainable and national development and democratic stability (Fagerlind and Saha, 1989; Farrell, 1989; Lockhead and Verspoor, 1990; Kwapong 1988; The World Bank, 2016). Given Africa's multifaceted crisis today it is clear that formal schooling has insufficiently brought about sustainable development, and this should be a contemporary concern. Given such expectations of formal schooling (Hinzin and Hundsdorfer, 1979; Njoroge and Bennaars, 1986; Beghetto and Kaufman, 2010; Levine, Bidell, Laserna and Fuller, 1991.

Nyamnjoh, 2004; United Nations, 2004) to bring about sustainable development, the relevant question to be considered in this treatise is therefore: where has education, or those who provide this human necessity, gone wrong? Who is to blame? Several reasons can be mentioned to answer education challenges. However, in this study the focus is on two problems hindering quality education pedagogy and teacher effectiveness even though the researchers are quite aware that quality education is broader than pedagogy and teacher effectiveness, and that there are multiple contributors that can be blamed for any ineffective education system.

In developing countries like Zimbabwe and other African countries, research argues (Haddad, Carnoy, Regel and Rinaldi, 1990; Harber, 1984; Ashton and Webb, 1986; Bergmann, 1996; Pennycuick, 1993) that while African children are undergoing schooling, children learn much from their out-of-school experience and again, more privileged children have more out-of-school learning resources available to them than do poorer children. The evidence from industrialised countries (Bickman, 2003; Walberg, Rasher and Parkerson, 1980; Holloway et al., 1990, United States of America Department of Education, 2016; Lockhead, Fuller and Nyirongo, 1989) shows clearly that these out-of-school factors explain more of the variation in students' test scores than do in-school and teacher-related factors themselves. In developing countries school and teacher characteristics (Edwards, 1985; Ashton and Webb, 1986; Darling-Hammond, 1999) have greater weight but out-of-school factors are still particularly important. There is a higher need for both school and teacher effectiveness in underprivileged communities than privileged ones. In other words African education systems lack sufficient quality and many countries have not achieved reasonable levels of coverage in primary, secondary, and tertiary education. Most developing countries, however, have not been able to allocate sufficient resources for these items and as a result teachers cannot perform adequately (Fuller, 1986; Farrell, 1989; Fuller, 1991; Alsup, 2006; Daggett, 2014). African schooling, given infrastructural challenges and demotivated teachers, does not measure vital universal goals like good citizenship. Africa's recovery and sustainable development therefore depend on many important educational factors, including the expansion both quantitative and qualitative of the continent's stock of human capital through improving current ineffective education systems that should be cognisant of today's and future needs. Even though all African governments are certainly convinced that improving formal schooling effectiveness is necessary and a must for sustainable development and for better quality of life yielded from an effective education system, they, however, have enormous political difficulties and financial challenges in achieving effective education systems (Harber, 1984; Husen and Postlethwaite, 2000). Considering the above thoughts, the major argument in this study is that without effective and adequately motivated teachers, African education systems' effectiveness is compromised and will not be achieved, and in return Africa will not achieve sustainable growth. Today's children will miss the benefit of quality education, and since they are also the future, the next generation will equally be deprived of this central human right.

Research Questions

- 1.1. How can African teachers achieve effectiveness?
- 1.2. Is there a correlation between effective teaching and sustainable development?
- 1.3. How do education challenges hinder teacher effectiveness?

Theoretical Framework

It is a general assumption that schooling is one of, if not a central building block of social structure (Finsterbusch, 2002; Meighan and Siraj-Blatchford, 2003; Trowler, 2003). Formal education should accomplish the important tasks of society for example, teach learners essential life skills like economics, food production, health education, democracy, socialisation of learners, productivity, social control, and other value systems (Bloom, 1985; Story, 1985; Torrance, 1981). Even though the theoretical role of formal education is clear and straightforward, achievement of its purpose and objectives may not be that simple. Education, beside its role to promote cardinal virtues (moral qualities, justice, prudence, respect, empathy and temperance) in society, also satisfies a basic human need for knowledge, provides a means of helping to meet the other basic needs, and helps sustain and accelerate overall development (Vargas, 2013; Dimmock, 1995; Heinz, 2006). Formal schooling if effectively executed should provide essential skilled manpower for both the formal and

informal sectors of the economy provide the means of developing the knowledge, skills, and productive capacities of the labour force, and act as a catalyst in encouraging modern attitudes and aspirations.

Another important aspect of formal schooling contributing towards sustainable development lies in the expectation of education to be a determinant of multi-benefits for sustainable living, not only the income of the present generation but also the future distribution of income, wealth, social justice, and equity and reduce disparities. Even though formal schooling can assist in the achievement of the above development measures, it is also important to mention that one should not mistake formal schooling for education. From overall experience, we could argue that, in most African education systems like in the current Zimbabwe education system at all levels learners are provided formal schooling and not education per se in its holistic definition. Children in African schools are still taught how to use technology and appreciate where technology is made and how it comes to Africa, at a time when learners should be taught how to invent, design technology and how to manufacture goods. If Africans were provided with education and not indoctrination, Africa would be developed and self-reliant. In order for African education to realise its key theoretical and definitional expectations and for Africa to use education as a vehicle for sustainable development, education's major development objectives must be carried out in contemporary African formal schooling education should be provided to all (currently not), more equitable distribution of educational opportunities should be prioritised and practically carried out, improve internal efficiency of the educational system, reduce learners rejected by the system, provide adequate resources and motivation for all involved, increase the relevance of schooling to the job market or life skills, and above all Africans should practically implement effective educational plans.

REVIEW OF RELATED LITERATURE

Quality Education

Quality in education is a broad concept that includes multiple concerns above all, access to education, physiological provisions, psychosocial elements on learner outcomes, family influence, instruction and classroom, school level management factors, class size, education policy and institutional forces, literacy, numeracy, life skills, health of learners, infrastructure, learning environments, the relevance of content taught, processes of training adequate teachers, teacher competencies, provision of learning infrastructure, resources and materials and outcomes that encompass knowledge, skills and attitudes and their link to national goals for education and positive participation in society (Colby and Witt, 2000; Swedish International Development Cooperation Agency, 2000; Postlewaithe, 1998; Adams, 1993). This study concerned itself with classroom pedagogy quality in education and how teacher effectiveness can be fully utilised to at least dilute some of African education challenges today and how it can also affect tomorrow's generation. Even though the focus was on teacher effectiveness, the researchers did not ignore the interrelated nature of quality education issues and how choices in any one area constrain policy choices in others and affects costs and benefits in extraordinarily complex ways. Of much concern to this study was the urgent need for African teachers to see the current educational need for preparing African children to be social, economic, and political liberated through active-hands-on-practical oriented education or schooling, by teaching for today and tomorrow. To achieve this vision teacher education should also be aligned to produce practical oriented-reflective teachers who appreciate and value practical skills ideology rigour by being exposed to sustainable development multi-discourses. There is also need for education in Africa today to focus on teaching children's real-life skills to meet millennium goals not only mimic them in black and white. In other words, the kind of teachers produced by the current African teacher education can determine whether Africans harness the universal explosion of scientific and technical knowledge for African sustainable development and self-reliance.

The key challenge to achieve the above mentioned vision of quality education through teaching practical skills today and for future generations is hindered by unchanging pro-academic African teacher education orientation and the calibre of teachers produced by the system (Raywid in Schultz, 2003; Corbett and Robert, 1999; Moore, 2005; Vetter and Schieble, 2012; Bremner, Sakata and Cameron, 2023). Making change in teacher education and in schools and a paradigm shift from theoretical focus to practical inclination is essential but also fraught with challenges. However, any ambitious new initiative is bound to have supporters, detractors, and obstacles to a seamless rollout. While teacher education continues to provide schools with quality theoretically focused teachers, the world in which students live and work is changing, advancing, becoming empirical and

techno-invention-oriented at an even faster rate than improvements in teacher education institutions. Many teacher education institutions today may not be preparing teachers capable of producing students who can be successful in the world they will inhabit after completing schooling (Zeichner and Liston, 1996; Fenstermacher in Wittrock, 1986; Fox, 1983; Dymoke and Harrison, 2008; UNESCO, 2023). There ought to be teacher education initiatives that could produce teachers who can keep pace with the rate of change in society (Ghaye, 2011; Haddad, 1985; Bransford, Darling-Hammond and LePage, 2005). Contemporary African teachers must appreciate that today's learners should be prepared for a future world that demands higher and arguably various levels of knowledge and skills than ever before.

Even though what is to be done to teach effectively for today and tomorrow is known, African education systems face vast challenges in achieving today and tomorrow's teaching and learning demands. This study summarizes some of these challenges under the subheadings below.

Teacher and Quality Education

There is an inseparable vital connection between teacher and quality education (Buchberger and Byrne, 1995; Darling-Hammond, 1999; Guskey, 2002). Quality education comes from reflective teaching (Anderson, 1991; Avalos, 2011; Korthagen, Loughran and Lunenberg, 2005; Machost, Stains and Brame, 2023). Quality learning and hence quality education comes from reflective teaching because reflective teaching always interrogates values behind any principle and practice of teaching. In both informal and formal learning situations, the role of a reflective teacher is well recognised and is the most important ingredient in any model of learning. Teachers make curricular and instructional decisions that directly affect the learner. When Walberg, Rasher, and Parkerson, in 1980 examined the biographical antecedents of persons of accomplishment in America, they found out that almost two-thirds of their subjects were exposed to creatively productive teachers at an incredibly early age. Bloom (1985) reported that demanding teachers and mentors played a significant responsibility in the development of high-achieving youths. Of much importance from Walberg and others' studies is the view that the kind of teachers who promote elevated levels of creative productivity or quality education in their students have certain characteristics in common (Beghetto and Kaufman, 2010). They tend to allow students' diverse academic freedoms, welcome unorthodox views, permit divergent thinking, express enthusiasm for teaching, and interact with students in and outside the classroom and conduct classes in a practical informal manner (Chambers, 1973). Summary from (Walberg et al., 1980; Story, 1985, Torrance, 1981; Bloom, 1985; Chambers, 1973; Beghetto and Kaufman, 2010) findings bring out three major components that constitute the ideal teacher for the development of quality education for all times that can be borrowed by contemporary African teacher education systems or teachers: "...knowledge of the discipline, instructional technique and teacher's romance with the discipline". In other words, the role of all-time teacher education is to cultivate in a student teacher the culture of being an authority in a discipline, develop a natural character for teaching, and make the student teacher love what they are to become. All three characteristics of a quality teacher will make a teacher always appreciate four principles of high-end learning: each learner is unique; therefore all learning experiences must consider the learner's abilities, interests, and learning styles. Learning is more effective when learners enjoy what they do. Learning is also more meaningful and enjoyable when knowledge and methods of inquiry are in context of real and present problems of the learner (Rousseau in Curren, 2007; Bishop, 1989). This will allow the learner to construct meaningfulness of what is taught. Even if the student teacher understands the above, the most critical reflection is that teaching is a practical endeavour, involves all the above and more.

Quality Education Achievement Challenges

Given the centrality of teachers to the functionality of any education system and teaching and learning for all times, teacher quality represents one of the most difficult and crucial sets of challenges facing most developing countries like most African countries. Some challenges haunting African education systems today and likely to affect future education quality include education being a costly enterprise that requires high-end capital injection that most African countries greatly lack or are not willing to sacrifice given more expenditures on luxury goods, weapons and private wealth (United Nations, 2014; The World Bank, 2016; UNESCO and African Union, 2023). Developing countries are not spending enough from their national budgets (Fuller, 1987; Bergmann, 1996; Verwimp, 1999) to achieve quality education or to remunerate their teachers well

enough to be highly motivated (United Nations Children Education Fund, 1990). In addition to limited spending to improve quality, African education systems are blamed for failing to fully make education address today and future challenging issues within the context of emerging trends like the impact of digital learning, heightened demand for career readiness (United Nations, 2014; Daggett, 2014; Kwapong, 1988; The World Bank, 2016; United Nations, 2025), increased emphasis on application-based learning, use of data analytics to implement growth models and developing personal skills.

Heightened Demand for Career Readiness

There is a growing realisation in the world over that schools inadequately prepare young people for life-long useful skills and career functional literacy success but do focus too much on academic reading and writing literacy skills (Comer in Finsterbusch, 2002; Psacharopoulos and Woodhall, 1985). Contemporary African workplace has changed in fundamental ways from colonial time's workplace that required minimal critical reasoning; it requires school graduates with academic, practical skills and the ability to apply those skills at the highest critical level. Unfortunately, most African education systems including the current Zimbabwe education system are not preparing students adequately for practical orientation changes and demands like the need for Africans to invent, design, engineer and produce technology and machinery. Given the changing education needs today and soon there is also a need for teacher education to be in tandem with practical skills driven techno-digital contemporary development demands and needs. Preparing teachers to deliver rigorous and relevant academic experiences that will in turn prepare students to be life and career ready will require focused and sustained professional development, as well as a number of shifts on how teacher education and teachers organise the instructional programmes in colleges and schools, respectively.

Increased Emphasis on Application-based Learning

True knowledge has always come from experience and experimentation (Knoll, 1997; Wurdinger, 1997; Keller, 2004). Valued knowledge comes from everywhere and is widely available from a variety of eclectic sources. Therefore, a contemporary teacher should understand that the traditional chalk-talk, examination, and assignment classroom is for many learners an anachronistic model that is different from the world in which they live. Most important is to teach learners how to process reading, sound reasoning, and critical thinking, how to retrieve information and use it to solve everyday problems, communicate and collaborate about different knowledge systems and subsystems with others (Katz and Chard, 1989; Harris and Katz, 2001). The challenges of providing the above suggested practical rigorous education instructional programme include lack of supportive infrastructure, motivation on the part of teachers, curriculum paradigm shift willingness, and above all lack of producing teachers who have been trained to teach in practical knowledge application modalities (Husen and Postlethwaite, 2000; Farrell, 1989; Haddad, 1985). African challenges require contemporary teaching to take the Constructivism route. The need to individualise the organisation and delivery of instruction should not merely be emphasised but should be the norm in contemporary African classrooms. The challenge with most African education systems has been the increase of focusing on summative examinations to measure learners' intelligence, degree of mastery of a set of knowledge (Huitt, 2009; Misia and Kariuki, 2011; Nyamnjoh, 2004; Nasango and Musungu, 2009). Education should be more focused on the processes of making learners understand how things become what they are and not what they already are. There is need for education approaches in African classrooms today to change if Africa is to achieve sustainable development and economic stability.

Developing Personal and Interpersonal Skills

The responsibility of teaching today's learners how to manage academic, social, political, and their digital identity and footprint life is necessary for sustainable development and should be cultivated from early learning levels. Educators' responsibility is not only to teach children how to make and use technology or to teach learners the skills they need to make right decisions in life; it also involves teaching them how to think well and logically about the consequences associated with making unreasoned decisions and how these will impact on their long-term goals. Current Zimbabwe education seems to have a limited focus on character education but more oriented toward academics; Zimbabwe children in formal schooling setups are hardly taught deliberately how to think. There is a need for contemporary African education systems to deliberately teach critical thinking and reasoning. For example one way of teaching children to think is to

introduce P4C (Philosophy for Children). There is more to sustainable way of life than the core subjects of Mathematics, English, Arts, and Social Studies. Personal and interpersonal skills, such as responsibility, self-management, self-identity, integrity/honesty, collaboration, and leadership are critically vital assets of today's workplace and living yet given minimal emphasis in the current Zimbabwe education system and in most cases left to the teacher's discretion to teach or not to teach them.

Findings

Most African education systems are not fulfilling their key role in sustainable development, as far as the purpose of schooling to prepare students to become successful workers, family members, employment creators, inventors, and active citizens is concerned, given vast African social, economic, and political instabilities. Given the current Zimbabwe and African socio-economic and political instabilities one can be led to conclude that teachers are not doing their jobs adequately; however, analysis of literature (Kwapong, 1988; Raywid, 2003; Corbett and Robert, 1999; United Nations, 2014; The World Bank, 2016; Machingaidze, Pfukani and Shumba, 1998; Verspoor, 2004; Avalos, 2011; WCEFA, 1990) indicated vast challenges for African education systems to actively contribute toward the achievement of sustainable growth today and in the future. Challenges including both qualitative and quantitative in nature — lack of access to formal school, shortages of adequate infrastructure, teaching materials, textbooks, technology, demotivated teachers, large class numbers and many more, mostly affecting rural schools and resettlement schools (Postlewaithe, 1998). Even though teachers in this study were argued to be the key input toward effective and sustainable development, teachers cannot be solely blamed for formal African schooling's failure to contribute toward a stable and developed Africa, given that teachers are not adequately remunerated in most African countries (Evans and Mendez Acosta, 2021; Bennell, 2023), lack of supportive infrastructure for teaching practical skills much needed to bring about sustainable development, formal schooling is still a privilege of the few in most African countries and not all who access formal school benefit significantly because much of what they are taught in the classroom is insignificant to real-life orientation. Educational opportunities in Africa are still discriminatory (UNICEF, 2014), particularly in rural areas and other disadvantaged communities; there are vast educational opportunity gaps between the poor and the wealthier children, and between sexes. Even though African formal schooling today is haunted by vast challenges, this study found out that reflective teaching and teacher's attitude toward skilful teaching mitigate other challenges (Fuller, 1987; Ghaye, 2011; Dymoke and Harrison, 2008; Dimmock, 1995; Zeichner and Liston, 1996). However, there are also other challenges that hinder reflective teaching, given the finding that most teachers are often much more anchored in subject matter (Levine, Bidell, Fuller and Laserna, 1991; Fuller and Snyder, 1991; Heyneman and Jameson, 1980; Bardach and Klassen, 2021) at a time when they should be developing in learners a practical pedagogy orientation. One can argue that teachers being inclined toward theoretical-book-education is a result of teacher education not providing future teachers with adequate knowledge or skills to promote a culture supportive of overall student development. Most African teacher education systems focus on teaching student teachers' theories of teaching and use of technology at a time when they ought to be focusing on the application of theories to teaching and how to invent technology.

For education to contribute toward achievement of sustainable development, Africa should not overlook the relevance of the training provided to those who are going to teach. The view is shared by many teacher education researchers including (Alsup, 2006; Struyven and De Meyst, 2010; Avalos, 2011; Bransford, Darling-Hammond and LePage, 2005; Guskey, 2002) who noted that "...teacher expertise is the most important factor in achieving sustainable development". However, even though it is a known fact that teacher education and rigorous professional development of teachers do contribute to sustainable development, the challenge in most African countries is to adequately fund and adequately motivate sustainable development key players. The above challenges and other poor working conditions challenges result in teachers not diligently carrying out their responsibilities and as a result being counterproductive to sustainable growth. It is also equally important for teachers in Africa to expose learners to mainstream work as well as civic activities so that the connection between school learning and later expectations is clear. Most formal schooling in Africa is criticised for not helping young people to learn what they need for real-life-long success (Kwapong, 1988; United Nations, 2014; The World Bank, 2016; Zimbabwe Ministry of Education, Sports, and Culture Report,

2002). One well versed with African education systems will not disagree less with the above noted contemporary African formal education shortfalls, however, with differing elasticity in different countries.

Literature reviews agree that all-time relevant education appreciates that practical skills, science, and technology are unquestionably indispensable to sustainable development, and that failure to master science and technology drives people to be dependent on those who possess the capability of inventing advanced technologies (Heinz, 2006; Gentzler, 1998; Corbett and Robert, 1999; Huit, 2009; Njoroge and Bennaars, 1986; UNESCO, 2023). The most worrisome general observation made by the researchers on the current Zimbabwe education system and perhaps also haunting other African education systems is that learners spend more time being taught how to use already existing technologies, instead of being taught how technologies work and how they are made. One of the major problems in African educational effort up to University level is concern with literacy in its different forms at a time when there ought to be hands-on practical skills development. If African education systems do not embrace the post-industrial and information revolutionary demands within its pedagogy it will never achieve sustainable development. For Africa to develop there is need for its contemporary schooling to migrate from 'chalk-talk' pedagogy approaches and propel breakthroughs in such future designing fields as microelectronics and microprocessors, biotechnology, satellite communication and imagery, and solar and renewable energy. However, the path to advanced scientific development initiative starts from producing relevant teachers (SIDA, 2000; Mullen, Murnane and Willett, 1996), curriculum change and provision of supportive schooling infrastructure at all levels of schooling, currently immensely lacking in most African countries. Therefore, grooming practical and technology literate teachers is necessary for Africa's development and future. There is also a need for deliberately making formal school practical-oriented and promoting practical research development systems to improve African educational capability as a prerequisite for African countries to acquire effective technology and to hold their own in global scientific and technological revolutions. The scientific culture of developing the ability to invent technologies and self-reliance must be constantly instilled from early learning levels in the minds of African learners.

DISCUSSION OF FINDINGS

The function of promoting virtuous multiple-intelligences in learners and life-long learning achievement much lacking in today's African education systems, however, also much needed today and always was once served in pre-colonial African philosophies of education orientation through home schooling and through families and organised societal networks and through community life. In pre-colonial African societies students did not write certificated examinations to be measured as doing well but they did well in life, earned sustainable living, took care of themselves and their families, and became positive, contributing citizens in diverse functionalities. Despite massive and rapid scientific, technological, and social changes, children across generations will always have the same needs; they must be taught useable real-life skills they can apply in and out of schooling, and they should be literate in sustainable developmental politics and how to make their communities democratic and progressive. However, most African education systems today hardly teach learners important things that can contribute to societal change and development; instead, they instruct children for yesterday. For example, education today is still concerned about children knowing the current president of the country or current presidents of African states, at a time when they should be taught the good and bad characteristics of a president and how themselves should become presidents who value democratic rationality, fairness and promote justice endless virtues or life values that were applicable yesterday, relevant today and will always be relevant what Plato termed Universal truths (Corbett and Robert, 1999) for all, and be concerned about the welfare of the people they will lead.

Education today and in the future should influence children's development in ways that favour sustainable development and respect for humanity sustainability and sustainable politics. To be successful, African education systems must create the conditions that make good development and learning possible: positive and competent social and academic interactions should be promoted at all schooling levels. When education becomes both academic and social oriented, students are likely to gain social and academic competences, confidence, literacy, and comfort. For African education systems to strike a balance between academic and out-of-schooling skills needs and realise the full potential of effective schooling, there is a need to create

and adequately support teachers who, in addition to having thorough knowledge of their disciplines (Mullen, Murnane and Willett, 1996; SIDA, 2000; Mitchell and Milligan, 2023), know what the current societies need and what the future societies will eventually require and how to support that ideology. Given the need for time and changing societal needs, conscious teachers and an effective teacher education that is in tandem with that philosophy are inevitable.

CONCLUSIONS

Quality education underpinned by reflective teaching indeed does contribute to sustainable development; however, most African countries have vast challenges; policy-based and inadequate funding that hinder achievement of quality education and hence reducing chances for sustainable development (UNESCO and African Union, 2023; United Nations, 2025). This paper acknowledges that quality education determinants are many and it was not possible to deal with all in greater detail. Even though many, quality education determinants are intricately interconnected. Out of the many determinants of quality education, this study focused on classroom teaching and learning, especially an in-depth analysis of how effective teaching does or is capable of contributing toward development of a scientific and practical pedagogy culture which in this study was seen as a major pillar for sustainable teaching, learning and if well-funded in terms of well trained teachers, highly motivated teachers and supportive infrastructure and managed could directly contribute to national and continental sustainable development. Even though many inputs contribute to achievement of quality education the study argued that teachers and reflective teaching always play a pivotal role in every education system. Teacher quality is the most highly correlated with achieving sustainable quality education. Given the significant role teachers can play toward sustainable teaching and learning there is a need for contemporary African teacher education systems to empower teachers with relevant contemporary pedagogy trends like moving away from a 'techno-usage, chalk-talk, salary-oriented' education to 'practical pedagogy and techno-invention orientation'. If teachers themselves are taught correctly for today and the future they will be able to instill the philosophy of education that emphasises eternal education ideals of productivity and practical knowledge much needed for African sustainable development and technological self-reliance. For teachers to be relevant today and in the future, there is a need for them to be exposed to multiple-discourses and instructional methods based on real needs and scientific facts not ideology that does not consider central human needs like the need to invent and produce. Furthermore, there is now a growing recognition of the need to produce a teacher who will promote in learners' useable skills in addition to reading and writing literacy, have the ability to evolve and be conscious of emerging developmental trends, develop the learner's personal and interpersonal skills currently on demand and likely to be on demand in the future. However, quality teaching is not a solution to all education challenges; access to formal schooling for all is a major challenge for sustainable development and how those few who access formal schooling are taught should also be of great concern.

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