



ACCELERATING THE ATTAINMENT OF SUSTAINABLE DEVELOPMENT GOALS THROUGH ICT AND DATA: STRATEGIES FOR NURTURING UNIVERSITY GRADUATES IN KENYA WITH SKILLS FOR THE 21ST CENTURY INDUSTRY

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Abstract:

This paper reviews literature on the skills required of graduates by the dynamic industry of the 21st Century with a view to making recommendations on the strategies and methods Kenyan universities should employ in education in order to equip learners with the skills and thus produce an effective workforce that is capable of confronting the economic and social challenges of an industrialized nation. The paper will mainly focus on the strategies and methods that universities employ in curriculum development and implementation including support services provided to learners outside formal classroom instruction (such as mentorship, academic advisory, guidance and counselling, internship, clubs and societies, sports and games and financial services such as bursary, loans and work-study). Employing the right strategies and methods to deliver education is crucial because solid holistic quality and relevant education is key to economic development of a country. It is on this premise that the Kenyan government mandated the education sector to develop learners with knowledge, skills and competences that make them productive citizens that will contribute to economic development of an industrialized nation envisioned by 2030. The sector is also expected to develop learners socially by ensuring that they are aware of fundamental human rights and obligations, national values and aspirations, and that they have the capacity to play a full part in the nation's social and cultural development locally, nationally and internationally. Further, the education sector is required to develop learners who have the capacity to play a political role at local, national and international levels responsibly, upholding the rule of law and respect for others. It is also expected to expand democratic space and foster political participation. This mandate is well aligned

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with the current global trend in education that is packaged by the 21st Century skills which include communication, critical thinking, innovation, problem solving and citizenship among others. It is however paradoxical that learning institutions across the world have to-date continued offering education in the traditional knowledge based education model, despite its ineffectiveness. This paper recommends a shift to a skill and values-based model of education with ICT support, to ensure that education in Kenya produces relevant graduates for the modern dynamic industry. This could be one way of enhancing acceleration of sustainable development.

Keywords: strategy; sustainable development; pedagogy; learner-centered education; skills-based education; education model

Introduction

The question of the state and quality of education in Kenya has attracted a debate among many Kenyans from all walks of life, particularly with regard to the quality of graduates churned out by our universities. Philip Ochieng (Sunday Nation paper, January 17, 2015) observes that despite education taking up a huge percentage of our national savings every year, we churn out graduates who are barely literate in life social skills (interaction, communication and interpersonal skills). Education is expected to empower individuals with capacity to deal critically with realities that surround them, and not just focus on building the intellectual capacity of learners. In addition to the intellectual, education should equip learners with skills, values and attitudes to enable them acquire quality holistic education that prepares them to effectively engage in the development of the country (Dominic Wamugunda, Sunday Nation, January 17, 2015).

Employers have also raised concerns that the graduates lack the skills and competencies required in the work place and as a result, they have had to retrain them on the same. Njenga (in Business Daily, June 27, 2014) for instance observes that apart from lacking the employability skills for the labour market, graduates are also lazy, untrustworthy and unreliable. This, as Njenga notes, is a major concern because experience, attitude and other soft skills are crucial determinants of performance in employment. To this end, the education sector in Kenya is mandated by the government to empower learners with skills that will facilitate transforming the country into a globally competitive economy through provision of quality education, training, research and innovation in line with the constitution, national objectives and global trends (World Bank MTFE (2013/14 Report)). The report maintains that Kenya's main potential lies with its people's creativity, education and entrepreneurial skills. To

achieve the mandate, the sector has put in place policies and institutional and legal frameworks including the Basic Education Act (2013), the Universities Act (2012), the Kenya National Examination Council (KNEC) Act (2012), Vision 2030 and Sessional Paper No.2 of 2012. Basic Education Act (2013), the Universities Act (2012) and Sessional Paper No.2 of 2015.

The emphasis of education is shifting from knowledge reproduction to globally competitive quality education, training and research whose emphasis is skill development. Sessional Paper No.2 of 2015, informed by Kenya Constitution 2010 and Vision 2030 recommends reforms in education and training in Kenya which are aimed at human and economic development. It also recommends that education provides for the development of the individual learner's potential in a holistic and integrated manner in order to produce balanced citizens. Further, it recommends a competency based curriculum; establishment of a national learning assessment system, early identification and nurturing of talents, as well as introduction and integration of national values and national cohesion into the curriculum. The emphasis of the skills and competencies is aimed at achieving sustainable development as Kenya achieves the status of an industrialized nation. The ongoing reforms in Kenya's Basic Education Curriculum Framework (2017) clearly align with the recommendations. They also provide guidance on three pathways to tertiary education which learners can select on the basis of ability, interest and talent. The pathways are Arts and Sports Sciences; Social Sciences and Science, Technology, Engineering and Mathematics (STEM) each with various tracks. By implication, Basic Education reforms demand that universities redefine their curricula, teaching methods and resources in order to establish themselves as centers of excellence in specific areas of choice. This will not only help in channeling learners to specific pathways, it will also alleviate the current duplication of programmes by virtually all universities in Kenya, and the unhealthy competition it has created among universities.

Reforms in education are a welcome move because since Kenya's independence in 1963, education has continued to emphasize intellectual development at the expense of other aspects of education (psychomotor, affective and social), yet effective education should develop all aspect of the learner. This narrow focus of education has benefited only a few Kenyans with intellectual inclination (the elite) and labelled the rest as failures. However, this challenge of formal education is not confined to Kenya. Nyerere (in Kassam, 2000) maintains that formal education does not only cater for the needs and interests of a few people who access formal schooling and divorces its participants from the society. It further fails to involve its learners in productive work, thereby depriving

society of their much-needed contribution to the increase in national economic output. In agreement, Okwach & Okwach (2005) maintain that formal education has significantly contributed to under-development in Africa as it does not address African needs. Mayo (2003) adds his voice stating that Western formal education was aimed at propagating a hegemonic discourse in education that is more concerned with marketability at the expense of social justice and development; it also projects the image of learners as consumers and producers, rather than social actors. Migori (2009) agrees with the views observing that formal education lacks linkage with society because research projects and dissertations do not address societal needs as they are rarely in consultation with the community, industry, stakeholders and development partners. These views depict serious weaknesses of the formal model of education which has become obsolete in meeting the needs of today's dynamic world, despite its popularity in many countries across the globe (Scott, 2015). Subsequently, an alternative model of education is critical in our universities if graduates are to contribute to the economic development of the society. This could go a long way in enhancing the acceleration of sustainable development goals.

Skills Gap among University Graduates

Hampson, Patton and Shanks (2011) observe that business and industry have continued to raise concerns that new graduate employees lack crucial basic employment skills such as problem-solving, working in teams and time management, and that new employees require additional on-site training before they can perform their jobs. This indicates a mismatch between the knowledge and skills learning that institutions offer and the competences required by the industry. In Kenya, education stakeholders have in the recent past sensitized learning institutions to establish a close link with the industry to close the mismatch gap. In response to this need, the Kenya Commission for University Education (CUE) curriculum guidelines require universities to show empirical evidence of involvement of stakeholders and the industry in the curriculum development process without which a curriculum programme cannot be approved (Curriculum Standard Guidelines, 2014). In addition, the standards require universities to engage their students in internship programmes in order to connect them with the industry for which they are being prepared. This practical aspect is critical because curriculum should offer a complete framework across the four dimensions of an education: knowledge, skills, character, and metacognition (Center for Curriculum Redesign, 2015). This study recommends that learning institutions engage the industry in more ways including involving technocrats from the industry to teach some courses

as facilitators or resource personnel in order to bring in the practical aspect of theory into the classroom. In addition, learners should be taught some topics in the industry for better interpretation of the theory in context.

Researches elsewhere confirm the skills gap noted above. For instance, a study of American Corporations in 2009 showed that the skills of the workforce then had not kept pace with their company's strategy, goals, markets or business models (Herring, 2012) cited by Scott (2015). A Pew Research Center study (2011) also indicated a mismatch showing that college education helped students grow intellectually more than helping to prepare them for a job. These findings are consistent with Report by Business Daily (June 26, 2014) which indicates that the students' uptake of enterprise fund set aside by the government for young people to start business was very low, despite the fact that unemployment was at 40%. Lack of keenness by the youth to take up the offer and create jobs may be attributed to lack of entrepreneurial and innovation skills. This confirms why reforms in education are critical if learners are to be nurtured with relevant skills for today's world to enhance their foresight and capacity to identify new opportunities, design creative solutions and initiatives to solve problems. Such job initiatives by the government are crucial because graduate unemployment has serious social, economic and political implications in the society including insecurity emanating from idle youths who have no employment. In Kenya for instance, most of the insecurity and hooliganism in political campaigns and rallies emanate from such youths.

Further, research shows that universities are beset by numerous challenges that impede the development of work skills. They for instance lack sufficient time for student practice in practical subjects due to limited time and large classes; use outdated curricula and teaching methods that require learners to memorize formulas just for the sake of helping them pass continuous examinations (International University Council of East Africa (IUCEA) report, Business Daily, Tuesday, June 17, 2014). In addition, IUCEA research (2015) established that more than six in ten university graduates in East Africa are lacking in job market skills. It also revealed that the universities had an acute shortage of highly skilled human resources and limited overstretched learning facilities due to rapid expansion of programmes and student population ([Mohamedbhai](#), Center for International Higher Education, June 22, 2014). Mohamedbhai also observes that many law firms in South Africa have found some LLB graduates unable *"to draw affidavits and pleadings as they lack both numeracy and literacy skills"*.

Notably, these and other challenges have made some education stakeholders intervene publicly to rescue the image of their fraternity. The Engineering Registration

Board of Kenya for instance refused to recognize the engineering degree from three public universities in Kenya and warned public universities to stop offering bogus degrees in 2015 due to poor curricula, lack of qualified lecturers and shortage of appropriate facilities. Similarly, the Council of Legal Education of Kenya rejected the applications to practice law from graduates of several public and private universities in Kenya the same year. Also, in Nigeria, the accreditation of several academic departments was withdrawn by the National Universities Council in October 2010 due to lack of infrastructure and suitably qualified faculty. These challenges are attributed to the rapid expansion of higher education in recent years and lack of effective and efficient regulation.

Further, report by the British Council on graduate employability in sub-Saharan Africa (2014) cited in the IUCEA (2015) survey notes that public universities have inadequate facilities and numbers of teaching staff as well as high student –teacher ratios that put a strain on teaching quality. The report states that there are 50% more students per lecturer in sub-Saharan Africa than the global average. Kenya’s ratio is said to be 64 students per faculty with facilities such as libraries, laboratories and workshops overstretched and poorly equipped. These are serious challenges that attract the attention of an educator. The unmanageable ratios could be attributed to faculty preference of the one way knowledge transmission teaching method that has compromised critical thinking, innovation, initiative and problem solving skills among graduates.

Research on universities also indicates a widespread concern about the work readiness of graduates. International Journal of Social Science Tomorrow (JSST) in Business Dairy (August 20, 2014) asserts that there is a mismatch in labour market demand and supply where universities are producing graduates lacking appropriate skills and knowledge needed in the workplace. This is attributed to the fact that many universities do not have a comprehensive data base of the market demands. Thus, while many graduates excel in reading, writing and Arithmetic competences, they lack social skills (including critical thinking and communication) and language skills. This situation raises concerns on whether universities collaborate meaningfully with stakeholders and the industry. It is critical that universities establish a placement department/office that is well linked to the industry to ensure a continuous exchange of the new developments in various professions. It should also provide opportunities to invite professionals to the university to mentor students on how to achieve their dreams in a specific profession or how to create a business.

Graduates from Kenyan Universities are reported to be less competitive in the job market due to gaps between their training and the skills employers want. The theoretical knowledge they acquire in tertiary institutions is not adequate for them to find jobs and stay ahead in their career. As a result, despite having a degree, most graduates have continued to 'tarmac' for months (David Herbling, Business Dairy, Tuesday August 20, 2013). This situation calls for a paradigm shift from the formal education model to a skills-based model with a view to developing the skills for the 21st century job market. This shift is critical if universities are to offer holistic quality education that matches the skills demanded by today's industry.

On the basis of the foregoing discussion, this paper recommends that policy makers address the challenges facing Kenyan universities and consider reforming curricula and pedagogy in order to nurture learners with the skills for the industry today as well as bridge the mismatch between what they teach and what the industry requires of graduates. This is crucial because employers today are not just impressed by academic certificates; they are also keen to establish that an employee demonstrates possession of soft skills and ability to apply them. To this end, universities should expose learners to forums that broaden their minds and develop their entrepreneurial and innovation skills through mentorship programmes including incubation hubs and innovation centers where professionals from the industry are invited to interact with learners through public lectures, workshop and seminars or demonstration of a new plant in the market. They should also facilitate learners with diversified internships to enable them to get adequate practical experience of the world of work to help them transition smoothly from school to the industry. Learners should further be encouraged to participate in school clubs and societies in order to hone the soft skills identified above through collaboration with peers. Strengthening learner support in education is crucial because experiences outside the classroom have an advantage of enhancing employability. Research shows that the most influential university background factor in securing successful employment outcomes is students' prior engagement in extra-mural activities (British Council report, IUCAA, 2015). This emphasizes the need for universities to put in place varied programmes and co-curricular activities in order to engage students in meaningful non-formal and informal learning as they pursue their specific academic disciplines. The programmes are discussed under student support services below.

In addition, universities should emphasize experiential learning in the community including service learning (community service), volunteering, on-campus activities and other core-curricular activities in order to further develop learners with

“soft” skills and enhance their problem-solving and innovation skills. Such engagements could also enhance development of more socially-conscious graduates with positive values and attitudes that enhance good global citizenship. As Hayman Russel Botman at UNESCO – China – Africa higher education summit (IUCEA, 2015) stated, *“graduate attributes should go beyond technical knowledge to include qualities that prepare them to be agents for social good, because the world needs graduates and employers who are not just interested in self-enrichment, but in making the world a better place for all.”*

Developing learners with values is a global concern because internationally, there has been a rise in the challenges and issues related with cultural integration, as well as ethnic and religious diversity. On local levels, many African countries continue to experience these same challenges and issues. For instance, Kenya has witnessed many incidences of ethnic clashes and violence which emanate from lack of respect and trust among the diverse ethnic groups and religions. Examples include the Maasai Mara university clash that took place over a football match between two ethnic groups (Sayagi, Dec 1, 2015); ethnically-based disputes in Kabianga, Karatina and Eldoret universities (www.standardmedia.co.ke > Kenya > Rift Valley Feb 19, 2015, Eldoret (www.nation.co.ke/counties/lecturers-call.../-/index.html Daily Nation Feb 20, 2015) and Moi university protests by a section of North Rift leaders over the appointment of the acting Vice-Chancellor on the reason that they preferred a local candidate from the County for the appointment (newsdesk@ke.nationmedia.com. September 21, 2016). However, Kenya is not the only country faced with ethnic challenges. Scholars in Sub-Saharan Africa argue that the way ethnic groups interact has been responsible for Africa’s low economic growth, political instability and conflict, high inequality, and low provision of public goods and services (Basic Education Reforms Framework, 2017). Wamahiu (2015) attributes corruption, impunity, greed, theft of public money, negative ethnicity and lack of patriotism in Kenya to value erosion. Inculcating learners with values in our learning institutions may help in alleviating the challenges and in creating a more united and cohesive nation.

In its emphasis of examination and certification, Kenya’s 8-4-4 system of education seems to have neglected values. Wamahiu (2015) established that teachers in primary and secondary schools do not consider inculcation of values to learners as a priority. Rather, the schools are mainly concerned about transmitting knowledge to learners for the exclusive purpose of preparing them to pass national examinations with high scores. This has led to a stiff competition among schools for the highest mean grade in national examinations which has influenced the rampant basic issues of integrity in learning institutions including malpractices among students (such as

cheating in examinations and plagiarism in term papers, projects and dissertations. However, this notwithstanding, it is worth noting that integrity issues of malpractices are not limited to learning institutions as virtually all sectors of the society are suffering from corruption, negative ethnicity and nepotism which could be associated with neglect of the values in both learning institutions and the society in general. Partnership 21 (2013) maintains that if graduates are to contribute responsibly at local, regional and national levels as informed voters and citizen advocates, schools must nurture them with citizenship skills to enable them tackle varied global challenges including economics, socio-cultural environmental and health issues.

Values are critical to the delivery of quality education and sustainable development. To this end, Kenya's education policy documents emphasize the need to inculcate and equip learners with desirable values such as patriotism, equality, honesty, humility, mutual respect, high moral standards, responsibility, respect, excellence, care and compassion, understanding and tolerance, honesty and trustworthiness, trust, being ethical and other important values that may emerge (Constitution of Kenya, 2010). The Constitution has mandated the Education sector to develop and incorporate values into the curricula at all levels of education (Basic Education Curriculum Framework, 2017). This implies that teachers have an obligation to nurture the values as they interact with learners in and out of the classroom. However, it should be clear to teachers and stakeholders in education that values are not just taught; parents, teachers and the community must be role models to the learners. For instance, teachers should behave in the manner they expect learners to behave. The 21st Century teachers are required to model soft skills such as tolerance, acceptance and global awareness (Andrew Churches). These soft skills are critical to have if a learner is to cope with life in the society and the demands of the workplace. In addition, teachers are expected to be models in positive use of social media such as producing and publishing valuable content and creating sharable resources online. They should also maintain professional behavior, both in class and online in order to model appropriate actions for students.

In a nutshell, following the doubts cast on the quality and relevance of university education by the studies cited above, this paper recommends that an empirical research is carried out in our local universities to establish the current situation with a view to making recommendations on the strategies needed to adequately prepare graduates for work.

Strategies for Equipping Learners with Skills for the 21st Industry

Equipping learners with 21st century skills demands that learning institutions ensure that what is needed to drive education is availed and aligned to the required standards

of education. It also calls for reforms in curricula, instruction and teaching methods. Specifically, a shift from the formal education model to skill-based model is critical because the former is too academic and de-linked from the society to prepare learners with skills to tackle the challenges of the modern industry. For education in Kenya to nurture learners with the 21st Century skills, this paper proposes some strategies that teachers could employ in curriculum delivery namely reforms in curricula and teaching methods, technology integration, professional development, assessment, learning environment and learner support services.

Reforms in Curricula and teaching Methods

The purpose of education is to equip learners with knowledge, skills and character in order to prepare them for their roles in society. In addition, education should create critical thinkers who are capable of reconstructing society (Lawton, 1981, cited by Otunga, Odero and Barasa, 2011) and bequeath to learners the capacity on how to think rather than what to think and to learn independently (www.teachersmind.com/education.him). In support of the above view, the Center for Curriculum Redesign (2015) recommends that curriculum should offer holistic education based on knowledge, skills, character and metacognition, noting that knowledge must strike a balance between traditional (math, Language etc) and modern subjects (Robotics, entrepreneurship, innovation). Further, the recommendation states that education should be interdisciplinary in order to nurture learners with the 21st Century skills and also helps them to connect different disciplines in the curricula to gain an integrated view of knowledge that broadens their mind to enable them tackle the numerous emerging societal challenges that have become global.

Further, reforms demand that learning institutions employ differentiated instructional objectives, content and assessment to enhance learner-centered individualized learning that is inclusive and to also motivate learners and ensure that individuals are enabled to achieve their right to education within their ability. Kenya's Basic Education Curriculum Framework (2017) is a major reform in education which is informed by the 21st Century skills. Its inclusion of pathways to tertiary education dictates that institutions of higher learning reform their curricula with a view to establishing centers of excellence in specific pathways. In addition, its flexible curriculum and learner-centered instructional approaches accommodate individual differences including children with special needs. This is aimed at enabling individual learners to acquire education to their potential within their abilities and interests in order to empower them to participate in the development of the society in their unique

ways. Basic Education reforms by implication demand that universities and other tertiary institutions of learning also align education with the global education landscape for relevance.

Effective learning requires educators to be cognizant of the learners' environment so as to base teaching and learning on what is familiar to them for the purpose of enhancing motivation and interest in learning. This also enables learners to identify with what is taught and make meaning out of it (Ingule, 2011; Woolfolk, 2014). To this end, educators should understand that the 21st century learners are exposed to an engaging, dynamic and instant electronic and digital environment with an instant communication medium (Andrew Churches, 2008). Thus, they should exploit the capacities of these technologies by integrating them in instruction in order to contextualize learning for meaningfulness. Andrew Churches (2008) observes that project-based learning cannot be conducted with textbooks because today's learners have an access to authentic resources on the web, experts anywhere in the world, and peers learning the same subject somewhere else. Also, a student carrying out a survey can use e-mail questionnaires, interviews on Skype or virtual focus group discussions rather than make many errands to reach respondents. This requires that curricula, learning resources and modes of delivery are reformed to align with the changes in technology today. It also demands that that learning resources are diversified to include digital technologies and that modes of delivery shift from expository to heuristic teaching methods.

Teaching theories are based on two parameters namely a teacher-centered approach versus a learner-centered approach, and high-tech material use versus low-tech material use (Teaching Methods-Teach. com.). Notably, while the traditional model of education inclines more on teacher- centered approach and use of low-tech material, 21st century education prefers a learner-centered approach which is supported by high tech materials. Students learn best when the learning environment is supportive and productive; when it promotes independence, inter-dependence and self-motivation; when their needs, backgrounds, perspectives and interests are reflected in the learning programme; when they are challenged and supported to develop deep levels of thinking and application; when assessment practices are an integral part of teaching and learning; and when learning connects strongly with communities and practice beyond the classroom (Principles of Learning and Teaching, 2017). Teachers should ensure that each of the factors is taken into consideration if they are to engage learners in instruction and offer holistic quality education in place of transmitting information to them.

Reflecting learners' needs, backgrounds, perspectives and interests in the learning programme demands that teaching strategies are flexible and responsive to the values, needs and interests of individual learners; the teacher utilizes a range of teaching strategies that support different ways of thinking and learning; the teacher builds on learners' prior experiences, knowledge and skills and capitalizes on learners' experience of technology (Principles of Learning and Teaching, 2017). It is critical that teachers continually reflect on their teaching practice with the learner at the center for the purpose of continuous improvement of instruction. Learner-centered reflection also affirms that learning is for the learner, not the teacher. Achieving reflection to the extent implies a shift from the formal education model to one that engages learners meaningfully through instruction.

The significant role of the teacher in facilitating learning involves selecting suitable activities, analyzing them to ensure they are relevant to the learning objectives, selecting learning activities that are appropriate to learners and constantly monitoring the extent of learning achieved by learners at each stage of the course; selecting varied activities that respond to the learning; repetition and review of activities to ensure mastery of learning. The teacher should select activities that illustrate the same principle in a range of different contexts, to help the learner to practice the ability to recognize and apply the abstract principle in unfamiliar contexts. Activities should also be logically sequenced to ensure incremental increase in difficulty. This entails that the level of difficulty increases in small increments, maximizing the chance of success at each stage. Progress at a slow pace through material that the learner finds easy should be avoided because it can be demotivating (Principles of Pedagogy/Ed Tech Now, 2013). Incremental increase in difficulty may be achieved by withdrawing help or scaffolding in various ways including increasing the number of stages of a problem that must be navigated; creating more "open ended" activities at higher levels of thinking; unexpected timing such as introducing an old topic unexpectedly; deeper contextualization of an abstract principle such as use of unfamiliar language. This broad and systematic approach to selecting, analyzing and use of learning activities in instruction is pivotal to skill development which implies a shift from knowledge transmission model of education. Illustrating the same principle in different contexts has the ability to broaden learners' minds and ability to transfer the knowledge gained for problem solving. This aligns well with the interdisciplinary teaching emphasized in the 21st century. Teachers should continually reflect on the activities they employ in instruction, taking cognizance of the learners' needs to ensure that the activities enhance learners' development of the 21st century skills.

Learners should be challenged to explore, question and engage with significant ideas and practices, so that they move beyond superficial understandings to develop higher order, flexible thinking (Principles of Learning and Teaching, 2017). This is a significant shift from the surface learning accorded through the entrenched knowledge reproduction form of instruction to passive learners. Achieving higher order learning requires that teaching sequences promote sustained learning that builds and emphasizes connections between ideas; promote substantive discussion of ideas and emphasizes the quality of learning with high expectations of achievement. It also requires the teacher to use strategies that challenge and support learners to question and reflect; and develops investigation, problem solving, imagination and creativity skills. This approach to instruction is critical if universities and other learning institutions in Kenya are to offer relevant education for today's industry. It demands a shift from teacher-centered to learner-centered teaching methods with technology support in order to align education to the 21st century standards for relevance. Reforms in curricula and teaching methods are critical if universities in Kenya are to churn out graduates who are capable of combating the contemporary societal challenges including slow economic growth and its related challenges such as unemployment and insecurity.

Technology Integration

Technology integration refers to the use of various digital and hardware tools to facilitate the process of instruction in and outside the classroom. This requires teachers to choose technology tools that enhance specific instructional strategies, skillfully combine pedagogy and technology to foster meaningful learning, incorporate electronic resources into the classroom and implement different forms of technology into classroom instruction to enhance teaching and learning (www.igi-global.com/dictionary/technology-integration/29524). However, effective integration of technology in learning requires training teachers on how to use mobile technologies to enhance learning in and out of the classroom and facilitating them with ongoing in-service training to help them cope with the changes in technology and related emerging societal issues.

Integrating technology in education has the advantage of captivating and sustaining learners' interest and motivation in learning as well as triggering their curiosity. It also enhances equitable and quality education for all as it helps to facilitate learning anytime and anywhere. Further, technology enhances collaboration between teachers and learners and teamwork among learners; (Andrew Churches; Scott, 2015); supports learners in research investigations and keeping a breast with new

developments in one's field; helps learners to reflect and construct new knowledge; develops new competencies and skills through simulations and extends educational opportunities to learners who may not have access to high-quality schools (Bates, 2011; UNESCO, 2013a). Integration also customizes and personalizes learning as the technologies are portable and owned by their users; helps to create virtual communities of learners such as open online courses to encourage productive communication between learners taking the same class across different time zones (UNESCO, 2013a); expands the potential of individualized and personalized learning as well as flexibility for learners to learn at their own pace and enhances student motivation to engage in lifelong learning opportunities (UNESCO, 2013a). Further, integration enhances independent and enquiry-based learning; allows for instant, flexible and reflective assessment through multiple means; helps in streamlining formative assessments and providing both learners and teachers with immediate feedback on progress (Learnovation, 2009; UNESCO, 2013a cited by Scott, 2015 & <https://www.edutopia.org/technology-integration-introduction>). Teachers should exploit these advantages of technology to ensure inclusion of all learners in education and to strengthen lifelong learning to enable learners to acquire new skills as they discard outmoded practices.

Scott (2015) maintains that supporting instruction with technology shifts the focus of learning from rigid teacher-dominated classrooms and curricula to more flexible and interactive forms of learning in which learners collaborate with peers and generates new knowledge through inquiry. Teachers should integrate technology in instruction to ensure that individual learners are facilitated with education at their own pace. This is one way of enforcing the policy on human rights to education. It could also accelerate realization of sustainable development as each learner is enabled to utilize the skills acquired to participate in the development of the society. Technology further makes delivery of educational services independent and flexible and diversifies the learning landscapes through varied educational institutions and other providers (formal and informal). To this end, the school has no monopoly over the learning locus as classrooms are no longer the only places in which learning can occur (Gijsbers and van Schoonhoven, (2012, p. 3); Redecker et al., 2011, p. 12). Teachers should exploit the benefits of technology in instruction in order to transform learners with holistic quality education that matches the 21st Century education landscape.

McLoughlin and Lee (2010) emphasize the significance of integration noting that digital learners want an active learning experience that is social, participatory, supported by rich media media and within learner control. They also observe that

technology teaches learners how to find information on anything they need to know including definition of a term or word spelling and this helps them to experience learning beyond the curriculum prescription as they seek the specific information. However, to achieve positive results with technology, teachers and learners must acquire digital skills to help them access and share class resources through digital links that enhance digital discussions between them (Characteristics of the 21st-Century Teacher, 2015) rather than use of traditional handouts. Technology integration must cut across various disciplines if it is. However, if technology integration is to effectively deepen and enhance the learning process, it must emphasize learner engagement, group participation, frequent interaction and feedback and connection to real-world experts, routine and transparent use of technology and its support to curricula goals (<https://www.edutopia.org/technology-integration-introduction>).

Buckingham (2007) casts doubt on advantages of technology asserting that there is little evidence that the use of technology has contributed to raising achievement and enhancing curiosity in learning for most young people. This notwithstanding, it is worth noting that as Otunga, Odero and Barasa (2011) argue, technologies in and of themselves do not drive learning. To use technology effectively, teachers should creatively and imaginatively design and select relevant technologies and drive them to support the achievement of the learning outcomes of the curriculum. They should also understand that technology cannot replace the teacher as its role is to enhance and support teaching and learning. In addition, teachers must take their responsibility in ensuring that they clearly define the learning task and framework, and drive technology, cognizant of the fact that its benefits are derived from the collaboration, communication and creativity that the tools support.

However, while teachers and learners in developed countries may easily apply themselves to technology at elaborate skill levels alluded to in the foregoing discussion, the situation in developing countries is different due to the numerous challenges besetting technology in most schools, particularly in the rural and informal settlement (slums) areas. Many countries are still lagging behind due to lack of skills, experience and familiarity with technology by both teachers and learners; learner inability to own basic technologies such as a smartphone or tablet; unaffordable cost of installation of technology; lack of support resources such as electricity; negative teacher and learner attitudes towards technology which makes them view it as complicated and sophisticated; challenges in cost (incurred when the instrument breaks) and equipment maintenance (Otunga, Odero, Barasa, 2011 p. 117-119). Technology integration in our learning institutions demands that the government takes a deliberate bold step to invest

in technology. This is imperative if the institutions are to offer competitive holistic quality education that matches the global standards of the 21st Century education. Investment in technology entails establishing structures for technology installation and facilitating schools with the necessary resources and training teachers in technology.

Ironically, technology integration in education is yet to be achieved in many countries, yet technology is a key driver of education today. Davidson & Goldberg (2009) observe that despite changes in the ways people access, exchange and interact with information; learning institutions have remained the same. This is attributed to the fact that the formal education model is still the preferred mode of instruction in most learning institutions across the globe, despite the fact that it does not meet the needs of the 21st century World (P21, 2007). Buckingham (2007) confirms this, noting that despite massive government investment and intensive promotion by the industry, technology integration in learning has not yet been realized, and teachers have not made much use of technology in their teaching. However, while investment and promotion of technology integration by governments may apply in developed countries, the narrative is different in most developing countries. In Kenya for instance, most schools, particularly in rural and informal settlement areas have no basic resources such as electricity and infrastructure to drive technology (Otunga, Odero, and Barasa, 2011).

However, despite the challenges, the benefits of technology integration in education cannot be overemphasized. Technology makes delivery of educational services independent and flexible. It also diversifies the learning landscapes through varied educational institutions and other providers (formal and informal). This entails that the school no longer has the monopoly over the learning locus as classrooms are no longer the only places in which learning can occur (Gijsbers and van Schoonhoven, 2012, p. 3; Redecker et al., 2011, p. 12 cited by Scott, 2015). To this end, e-learning and open university are flexible modes of delivery that have gained recognition and acceptance for their ability to facilitate education to many students whose work contexts cannot allow them to enroll for the traditional regular full time schedules.

However, the modes have been criticized for denying learners opportunity for face-to-face interaction with teachers. This challenge could be alleviated by use of a blended mode to provide opportunities for face-face interaction. Despite their major challenge in assuring quality and standards in education, flexible modes of delivering education have given a window of opportunity to those in employment to develop their careers as they engage in ongoing staff development programmes to gain new skills to enable them adopt to the changes in society. This has also influenced them to embrace lifelong education.

From the foregoing discussion, it is evident that repositioning learning institutions in the 21st century education landscape is a major challenge which requires countries to invest in technology in order to make education relevant to the needs of the society today. In Kenya for instance, it will require learning institutions to facilitate teachers with personal computers; install electricity and internet infrastructure; facilitate learners with electronic resources and build teacher capacity in technology skills to help them integrate technology in instruction; train and retrain teachers to equip them with relevant skills and attitudes to enable them implement reforms in education; address teacher-student ratios with a view to reducing student numbers to a manageable level in order to employ learner-centered teaching methods with technology support.

The ongoing reforms in Basic Education in Kenya are cognizant of global trends in education which recognize the need to offer education to all learners, taking cognizance of their individual differences. Thus, Special Needs Education is integrated at every level of education from Pre-primary to Level 9. Multiple pathways are also provided for tertiary education, based on learner interests, abilities and talents where no learner will be labelled a failure as has been the case with the use of the elitist formal model of education. The shift from knowledge transmission to skill acquisition in Kenya's Basic Education reforms is supported by Ericksson's (2012) & Frey's (2007) argument that technology integration dictates that educational systems shift from emphasis on teaching to learning; embrace multiple pathways for acquiring skills; shift the role of teachers from knowledge transmitters to facilitators of learning. The paradigm shift is enhanced by the fact that digital tools allow learners to become generators of content, instead of passive consumers of knowledge.

Aligning education with the 21st skills requires teachers to keep abreast with research in order to know the current developments in education to enable them to adequately prepare learners with the 21st Century skills including creativity and innovation, critical thinking and problem solving, communication and collaboration, information literacy, media literacy and information, communications and technology (ICT), career skills including flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, and leadership and responsibility. The skills prepare learners to cope with the complex life and work environments in today's world.

Professional Development

Professional development is the process of improving and increasing capabilities of staff through access to education and training opportunities. It comprises of all opportunities for a teacher's growth after acquiring a training certificate and securing a job. (www.businessdictionary.com/definition/professional-development.html). Building teacher capacity is the chief means for improving classroom instruction and, in turn, student achievement. It also builds and maintains teacher morale. Professional development today entails highlighting and facilitating ways in which teachers can seize opportunities for integrating 21st century skills, tools and modern pedagogies into their classroom practice to help them identify the activities that they could replace or de-emphasize from the formal education model in favour of a more competence skills-based model. It is also concerned with balancing direct instruction with project-oriented teaching methods and interdisciplinary education to enhance learner's deeper understanding of subject matter in order to develop them with 21st Century skills including problem-solving, critical thinking, communication and collaboration. It is also concerned with creating professional learning communities for teachers that model classroom learning that best promotes 21st century skills for students, cultivating teachers' ability to identify students' particular learning styles, intelligences, strengths and weaknesses; helping teachers develop their abilities to use various strategies to reach diverse students and create environments that support differentiated teaching and learning as well as assessment ; supporting the continuous evaluation of students' 21st century skills development; encouraging knowledge sharing among communities of practitioners, using face-to-face, virtual and blended communications; and using a scalable and sustainable model of professional development (Scott, 2015). Addressing the above issues could empower teachers to deliver holistic quality education that is aligned with the 21st Century education standards. Creating professional learning communities that model classroom learning for the 21st century is a great synergy that can help teachers to reflect on their teaching practice as they benchmark with reputable learning institutions. This is a sure way of enhancing continuous improvement. Universities and other learning institutions should facilitate faculty members with holistic professional development (in order to build capacity among faculty members to enhance their effectiveness in teaching. It is imperative that teacher development is prioritized so as to continually empower teachers with relevant skills to enable them to effectively carry out their teaching assignments and duties to learners. This is critical because the teacher is the most crucial factor in education. Education for Sustainable Development places the teachers at the center of sustainable development. Goal no. 4

for instance seeks to “*Ensure inclusive and quality education for all and promote lifelong learning*” (www.un.org/sustainabledevelopment/education). This goal cannot be achieved without the teacher. However, realization of this goal is posing a challenge in most developing countries due to shortage of adequately trained quality teachers in most institutions. In Kenya for instance, teacher capacity is lacking in virtually all levels of learning. This situation is influenced by poor teacher training programmes, lack of in-service courses for teachers and lack of basic learning resources including technology, meagre remuneration for teachers and poor housing among other challenges (Otunga, Odero and Barasa, 2011). Teachers should be facilitated with professional development on regular basis to enhance continuous improvement of their teaching practice.

To effectively deliver education that is relevant for today’s industry, the teacher must be an adaptor, a visionary, an innovator, a collaborator, a risk taker, a learner, a communicator and a model (Characteristics of the 21st-Century Teacher, 2015). A teacher is required to adapt to reviews and reforms in curriculum in order to employ creativity and imagination in delivering it. She/he should also adapt to software and hardware designed for a business model into teaching tools utilizable by a variety of age groups and abilities as well as adapt to dynamic teaching experience. Such adaptations are critical in today’s dynamic global world if teachers have to keep pace with demands, expectations and challenges and offer relevant and quality education for the vast global industry. Adaptation demands that teachers understand and creatively apply different learning styles and adapt teaching styles to different modes of learning. It also requires them to creatively and imaginatively adapt teaching methods to different contexts to enhance meaningful learning.

As a visionary, a teacher is expected to influence learners to think about the future advancements in creative and imaginative ways, be ahead of time; have a powerful plan for change in the future; be an inventor who creates unique solutions to solve the emerging challenges of today’s vast world. Nurturing learners with these qualities is imperative because they need them in order to cope with the unpredictable future of the 21st century.

Innovation entails creating something new which deviates from the traditional model of knowledge transmission to a skill-based model. Innovation requires teachers to modernize school education (Cambridge English Dictionary), try new ways of teaching including using mobile technologies in place of textbooks (to enable learner’s access learning anytime and anywhere and to enhance more effective learner participation). The technologies provide learners with opportunities to initiate, produce and share new ideas and knowledge, enhance peer learning and help learners to

become global citizens who are capable of communicating and working in diverse context (Characteristics of the 21st-Century Teacher, 2015). Scott (2015) argues that learners who are engaged in such activities enhance their creativity and ability to formulate creative solutions as they share, generate, blend, remix and recombine ideas, concepts and knowledge.

Notably, technology continues to influence many rapid changes in the society that dictate the need for new ways and approaches of teaching in order to respond to the related emerging issues. UNESCO-IBE (2013) maintains that achieving holistic quality education requires highly competent and committed teachers who employ interactive and engaging teaching methods with technology support. It is worth mentioning that in Kenya teacher professional development is not a priority. Research shows that teachers are not facilitated with in-service courses even in situations where curriculum has undergone revision (Njui, 2010).

Assessment

Cambridge Dictionary of Education defines assessment as the act of judging or deciding the amount, value, quality or importance of something. Educational assessment refers to the wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of the learner (Glossary of Educational Reforms, 2015) using various tools (including standardized tests, interviews and questionnaires) to document data on the acquisition of knowledge, skills, attitudes, and beliefs after which results are analyzed. Today's emphasis of lifelong learning has brought a paradigm shift in measurement and assessment of education. The UNESCO report (2012) notes that the measurement of skills levels and the efficient matching of these skills with those required by the world of work is being done either through the development of outcome based national and vocational qualifications frameworks or through large-scale assessments of skills levels among adults. It is critical that universities in Kenya develop a skills framework aligned with the 21st Century skills in order to focus learning on specific knowledge and skills to impart to learners. This would ensure that the education offered by universities is relevant to the needs of the society. A shift to skill-based assessment is critical in countries like Kenya where assessment has for many years basically focused on the cognitive domain with an emphasis on knowledge reproduction, which has influenced a shallow approach to education. Skill-based assessment promises a more holistic approach which expands assessment to the other learning domains namely affective, psychomotor and social domains.

To use assessment effectively, teachers should balance between summative (assessment of learning) and formative (assessment of learning); integrate feedback on student performance into everyday learning; use technology-enhanced assessments; develop portfolios of student work that demonstrate mastery of 21st century skills to educators and prospective employers; and use portfolio measures to assess the educational system's effectiveness in reaching high levels of student competency in 21st century skills. Formative assessment should be emphasized more as it renders itself to prompt feedback which enhances continuous improvement of teaching and learning. NZME (2007) maintains that formative assessment has the advantage of helping teachers to establish whether individual learners have had sufficient experience with knowledge for the purpose of integration and knowledge transfer. It also helps to identify appropriate practices and applications to support learners (including providing extra classes, remedial work and giving specific assignments to individuals to enhance mastery of the content. If learning institutions are to effectively develop learners with the 21st century skills, it is imperative that they employ formative assessment in order to use its benefit of facilitating immediate feedback to systematically develop learners with skills, following the simple to complex principle of learning. In support of this, reforms in Kenya's Basic Education Curriculum Framework (2017) emphasize formative assessment above the summative enhance effectiveness in developing learners with skills. This entails a paradigm shift from the entrenched transmission model of education to the skill-based model. Notably, the reforms have reduced summative assessment to specific transition levels namely grade 3 and 6. The emphasis of formative assessment in the reforms is aligned with the 21st Century standards-based education which requires learners to demonstrate understanding or mastery of the knowledge and skills they are expected to learn as they progress through their education (Glossary of Education Reforms, 2014). This entails that universities and other learning institutions align their standard of education with the 21st century skills, content, knowledge and expertise; a shift from the traditional model of knowledge transmission to a collaborative and competence skills-based model to provide learners with opportunities to engage in meaningful problem solving with the real world of today as they undergo learning in order to prepare them for life and work.

Learning Environment

A learning environment refers to the diverse physical locations, contexts, and cultures in which students learn as well as the physical and social/cultural setting in which a learner or community of learners carry out their work. It includes all the tools,

documents and other artefacts found in that setting (www.igi-global.com/dictionary/learning-environment/16867). A supportive and productive learning environment requires the teacher to build positive relationships through knowing and valuing each student; promotes a culture of value and respect for individuals and their communities; employs teaching strategies that promote students' self-confidence and willingness to take risks with their learning; ensures that the learner experiences success through structured support, the valuing of effort, and recognition of their work. In addition, the learning environment promotes independence, interdependence and self-motivation. This requires teachers to model practices that build independence and motivate learners to work in an autonomous manner. Further, an effective learning environment involves learners in decision making within the classroom in relation to what and how they learn. Team building skills are also explicitly taught so that students learn to collaborate, negotiate and contribute to joint assignments and experience the sharing of roles, responsibilities and ownership. The teacher encourages, supports students to take responsibility for their learning, and uses strategies (including individualized instruction with active, cooperative, and democratic teaching methods with structured content and quality learning resources including technology) that build skills required for productive collaboration. The environment also promotes quality learning outcomes that define and help learners learn what they need to learn and teach them how to learn. An effective learning environment also adapts teaching to learner contexts and creates a school culture and a learning environment in which individual learners thrive and unleash their potential (UNESCO's Four Pillars of Learning, 2015). It is critical that teachers endeavor to create an effective learning environment that upholds the above principles in instruction if they are to impact learners with holistic quality and relevant education that is responsive to the needs of the society today.

According to Partnership for 21st Century, learning environments should create learning practices, human support and physical environments that support the teaching and learning of 21st century skill outcomes ; support professional learning communities that enable educators to collaborate, share best practices and integrate 21st century skills into classroom practice; enable students to learn in relevant, real 21st century world contexts; allow equitable access to quality learning tools, technologies and resources; provide 21st century architectural and interior designs for group, team and individual learning; and support expanded community and international involvement in learning, both face-to-face and online. Achieving these ideals of a learning environment demands a huge investment on education by the government, particularly

in the area of technology. This would require ensuring installation of technology in all our learning institutions and training teachers in technology skills so that they can support their teaching with technology. It would also call for major reforms in curricula, delivery modes (from transmission to learner engagement), diversifying curricula and embracing interdisciplinary teaching with a view to aligning education to the 21st century standards-based education.

Further, a learning environment should provide learners with interesting learning opportunities that enhance their motivation and confidence. It should also provide incentives, networks and adequate resources and technology, require teachers to use flexible curricula and assessments, and use varied learning modalities to appeal to different learning styles (visual, auditory and kinesthetic). It also requires grouping learners with mixed abilities and diversifying the educational experience of all students (UNESCO, 2009; Nanzhao, www.ibe.unesco.org/cops/Competencies/PillarsLearningZhou.pdf & Akoto, 2009).

Adapting curricula, assessment and teaching methods to suit individual learners ensures that each learner has an opportunity to acquire knowledge and skills to enable them participate in the development of their society. Achieving the characteristics outlined above is one significant way of accelerating sustainable development as instruction is cognizant of learner differences and seeks to meet individual learner's needs. Other ways of enhancing effective learning environment include providing learner academic support by putting in place ramps, escape points in case of fire and assistive technology such as braille; providing behavioural support by enhancing positive learning environment that embraces value-based education; having manageable student-teacher ratios to enhance learner-centered instruction; and making interventions for vulnerable learners such as providing work study, scholarship and bursary as needs arise (UNESCO, 2009; Nanzhao, www.ibe.unesco.org/cops/Competencies/PillarsLearningZhou.pdf & Akoto, 2009).

Nanzhao maintains that providing effective and quality learning environments helps to keep learners in school more and enable them to succeed academically, particularly when teachers actively engage them in the learning process and when they present them with interesting learning opportunities. He also argues that active learner participation is critical in instruction because it reflects the principle of democratic participation which prepares learners for what is expected of them in a democratic society and also develops them in various character qualities including mindfulness, ethics, leadership, resilience, curiosity, courage (Center for Curriculum Redesign, 2015). Teachers should exploit the numerous qualities of an effective environment if they are

to make the school an interesting and fulfilling environment for learners which if they are to achieve holistic quality education.

Learner Support Services

Learner support services are those services that are meant to make the learners' academic life more effective and comfortable. The Glossary of Quality Assurance in Japanese Higher Education (2007) defines "*learning support*" as "*a comprehensive support system in higher education institutions which enables students to concentrate in studying effectively, such as guidance for taking courses, student counselling and advice*". Learner support services include those human aspects that support individual learners in their academic life as well as providing a supportive learning environment. They include mentorship, student advisory services such as academic advising, guidance and counselling, sports and games, clubs and societies and financial services among others. Support services significantly enhance formal learning. The services are briefly explained below.

a. Mentorship

Mentorship services facilitate learners with open forums where students, professionals, stakeholders and the industry are able to facilitate public lectures, workshops and demonstrations. This enables learners to gain the practical perspective of the theory learned. Professionals can also engage learners on topical areas including entrepreneurship, innovation hubs and incubation as a way of opening up learners to different job opportunities and job creation strategies. The forums should also include sessions for student personal development where motivational speakers can mentor students to raise their levels of confidence in themselves, self-esteem and self-efficacy in order to improve their opportunities for success in and out of school. Universities should create forums for students to interact with professionals from the industry and academia to help them gain practical knowledge on how the industry works and what it expects of employees. This can also help them broaden their understanding of theoretical concepts covered in class and train them to think outside the box

b. Academic guidance

Academic guidance and advising services help learners to make decisions regarding the career aspirations as well as address the difficulties they may be facing in their academic life. The services are mainly carried out by academic advisors who are mandated to guide students in their academic journey. Academic guidance and advising enhances students' success in their study. Universities and should support students in their academic journey by assigning a number of students to a faculty who

assists them to make advancement towards their objectives and targets on individual basis without being compared with other students. This implies that all students are enabled to exploit their potential according to their ability or talent and eventually channeled to their appropriate pathways to pursue education.

c. Guidance and counselling

Guidance and counselling is a professional service aimed at assisting learners to understand themselves, others, school environment and attain abilities to adjust accordingly (Wango & Mungai, 2007). Learners face various challenges that may affect their learning if not attended. At the university for instance, they experience challenges because they find they are on their own in an independent environment where they are expected to make decisions on virtually all matters. Those who are not able to cope with the challenges may resort to drugs and other unbecoming activities. It is on this reason that universities should offer guidance and counselling services to learners to help them adjust to the environment. Guidance and counselling also helps learners to learn to set individual goals that enhance improvement of their educational performance. It further helps to prepare learners for unanticipated life events and ongoing personal difficulties and challenges faced in and out of the university. Cooper (2007) observes that Guidance and counselling services enhance the retention rates of students with high chances of dropping out (Cooper, 2007). All learning institutions should establish structures for guidance and counselling to cater for students' social and emotional needs. The structures should put in place peer counsellors to supplement the services offered by counsellors. Provision of such structures is critical as learners are faced with numerous challenges including social relationships, drugs and substance abuse. At lower levels, there should be clear structures that expose learners to different careers and professions from early years of schooling (upper primary school to secondary school).

d. Sports and Games

Sports and Games play a significant part in the learner's school experience. A learner participating in school sports gains may have reduced anxiety and depression. He/she can also receive self-esteem boosts, which may improve confidence and school performance (Marianne Engle, 2013). Confidence is a critical attribute that is looked for by an employer as it enhances an employee's performance. In addition, learners who play sports in school often enjoy enhanced social interaction. The socialization that occurs with organized sports can help a learner learn effective skills for interacting with both peers and adults and also enhance performance (National Association for Sport and Physical Education, 2013). Sports can also provide learners with a variety of character-building experiences including how to cooperate with others and play fairly.

A learner can also develop strong self-discipline as he/she strives to learn and excel at a sport. The learner can use the self-discipline academically and improve school performance. Sports participation may also enhance critical-thinking and problem-solving skills (American Academy of Child & Adolescent Psychiatry). Centers for Disease Control and Prevention asserts that participation in sports makes learners stay healthy and strong, increase endurance, build healthy muscles and bones and control weight. Learners who feel overwhelmed or tense with academic issues might benefit from the physical activity involved with sports activities. For instance, after running releases negative anxiety and tension and thereby enable the learner to concentrate on school. These physical benefits impact on learners' emotional well-being, which, in turn could improve school performance (The importance of Sports and Games in school, 2013). The benefits accrued through sports and games (outlined above) are critical soft skills that enhance work performance and a learner's relationships with others in both society and workplace.

All learning institutions should emphasize the need for students to participate in sports and games to enhance quality and holistic education. They should plan activities for sports and games competitions among students within and outside the institution. Talented students can be identified through such activities (particularly in primary and secondary schools) and be guided on the pathway to take to advance their education at higher levels of learning including university. The significance of these activities is exemplified by the Kenya Commission for University Education (CUE) Standards Guidelines which require all universities to provide enough ground (field facilities) where students can engage in sports and games. Where a university may not have adequate grounds, arrangements on where students do their recreational activities in the field and a memorandum of understanding must be submitted in writing for a university to be given a license to operate.

e. Clubs and Societies

Life in school is not all about academics and study alone. Learners need a respite from their tough study schedules to re-energize their energies and for overall holistic development. Clubs and societies enhance a learner's experience beyond the classroom. They offer activities designed for fun and camaraderie and are great ways to meet other students who share common interests. Getting involved on campus is also a unique way to develop leadership skills and is an excellent resume builder for that first job after graduation (Clubs and organizations/Mercyhurst University www.mercyhurst.edu › *Campus Life* › *Campus Involvement Center*). Clubs and societies also enhance informal learning of soft skills including discipline, sharing, leadership, respect; positive attitude

towards life and people; teamwork; negotiation; acceptance of different kinds of people (culture, colour, ability and religion); empathy and fair play skills.

Universities and other learning institutions should provide learners with opportunities to join clubs and societies to equip them for life and work. It is worth noting that while primary and secondary schools in Kenya provide learners with opportunities to join clubs and societies of their interest, the high premium given to examination and certification has influenced schools to use the time allotted to unexaminable subjects, clubs and societies to teach examinable subjects to ensure that learners are adequately prepared to excel in national examinations (Njui, 2010). This could be one factor contributing to the lack of employability skills of graduates churned by universities. However, this notwithstanding, all learning institutions should provide opportunities for students to engage in clubs and societies such as debating, Science, Journalism, Music, Environmental Science, and Home Science among others.

f. Financial services

Finances are central in sustaining the life of the student in school. Gichui (2015) asserts that with rising economic challenges in many developing countries, students struggle to survive in the universities as most households struggle to finance education for their children. This situation has been made worse by the reduction in financing education by the government. Introduction of cost sharing policy in financing higher education in Kenya for instance entails that students have to pay a certain amount directly to the university in order to be enrolled. This has become a big burden as the poor households cannot afford to support education for their children in universities. It also means that access to university education has been limited to the rich. Alternative and appropriate avenues to raise finances for the education of students from poor households are crucial if the students are to be accorded their right to education. Universities should facilitate students with financial support services including work study programmes, bursaries, scholarship and soft loans to ensure that they manage to achieve their dreams so that that they can also participate in the economic development of their society.

Conclusion

Exponential growth of technology has changed the landscape of education in the 21st century because learners have access to information anywhere any time through mobile technologies including tablets and smartphones. This has democratized knowledge and significantly impacted the process of schooling providing for flexible modes of learning such as e-learning and Open University which have facilitated education to learners in their different contexts using formal, informal and non-formal forms of education.

Learning can therefore no longer be teacher-controlled where knowledge is transmitted to passive learners in formal and standardized classroom settings. The new landscape demands that teachers engage learners with varied activities in and outside the classroom, supported by mobile technologies at their disposal. This has shifted the role of the learner from a passive recipient of knowledge to an active participant in learning and creating new knowledge through collaboration with peers. To align education with the demands of today's dynamic industry demands training and retraining teachers in order to equip them with appropriate knowledge, skills, attitudes and values that will enable them to prepare learners with the skills needed to adequately confront the numerous challenges affecting societies today. It also requires educators to reform curricula, objectives, teaching and assessment methods and resources in order to accommodate individual learner abilities, interests and talents by offering differentiated learning activities. This implies that each individual learner has an opportunity to access education to the highest possible level according to ability, interest and talent. Embracing interdisciplinary approach to learning is also critical in providing learners with a broad view of education to broaden their minds to empower them to face the numerous challenges in the world. Integrating values in education is also important in enhancing holistic quality transformative education and in equipping learners with skills for citizenship.

Recommendations

This paper recommends that universities address the following aspects of education:

a) Reforming education to focus on 21st Century skills

Higher institutions of learning should reform their curricula, instruction and delivery modes to ensure that their standards of education align with 21st century standards-based education. They should also embrace lifelong education in order to effectively address emerging issues in the society that is changing so rapidly.

b) Technology Integration in education

There is need for policy makers and education stakeholders to emphasize the significant need for learning institutions to integrate technology in education through a policy statement that takes cognizance of learners with disabilities. This demands that libraries are facilitated with assistive technologies for learners with special needs. Major plans and strategies should be worked out to ensure success in providing the necessary infrastructure and resources needed to install technology in all learning institutions.

c) Redefining Assessment

Universities and other learning institutions should shift assessment from emphasis of knowledge reproduction to assessment of skills which efficiently match with those required by the world of work to ensure that education is relevant. They should emphasize formative assessment above summative assessment because it has the advantage of providing feedback to both the learner and the teacher. This enhances continuous improvement in education as errors are rectified in time. In addition, they should embrace flexible assessment in order to cater for learner individual differences, interests, ability and contexts to ensure that individual learners are enabled to unleash their potential in order to participate in the development of the society.

d) Linking learning Institutions closely with the Industry

Universities should work more closely with the industry in the conceptualization stages of curriculum development and also in the implementation stages to ensure that the institutions are aligned with the skills needed in the job market. Arrangements should be made for learners to be taught some topics in the industry in order to experience the practical perspective of the theory in the curriculum. Similarly, professionals in the industry should be assigned classes to teach or demonstrate as resource persons so as to bring the industry in the classroom. This is a significant way that may enable learners to acquire the skills needed by the industry.

e) Providing Student Support Services

Learning institutions should put in place varied student support services including mentorship, student academic advisory, guidance and counselling, sports and games, clubs and societies, work study programme, scholarship fund and bursaries to ensure that within the context of academic learning, learners have an opportunity to be nurtured with essential soft skills for success in today's industry. Such informal activities go a long way in enhancing formal learning.

f) Creating Centers of Excellence

Current reforms across the world demand creating pathways to access learners to areas of interest, ability and talent. This demands universities and other institutions of higher learning to establish their 'nitch' so that each becomes a center of excellence in a certain area rather than the current situation where universities in Kenya for instances are offering the same degree programmes without specialization, thus competing for the same students for admission as illustrated by the rigorous marketing of programmes by universities in different forms of media for the same degree programme. Centers of excellence entail that students have a conducive learning environment to enable them acquire holistic quality education for sustainable development.

g) Networking with local and international higher institutions of learning

Universities should network with other universities locally and internationally for the purpose of benchmark with reputable parallel institutions. This helps them to build centers of excellence. Benchmarking also enhances quality assurance for continuous improvement of the delivery of education. Global networks have the advantage of helping an institution to establish whether it is equipping its learners with skills for the global economy. International cooperation and collaboration can also help each country to participate in building a global learning network that can ensure that learning across the globe is adequately preparing learners with skills and competences that enable them to collaborate and resolve the numerous challenges facing the world today.

h) Collaboration with stakeholders and the industry

Universities should collaborate with stakeholders including community around the school, professionals and partners in education, business leaders and the industry in education matters relating to curriculum development, curriculum implementation and reforms in order to provide students with support systems necessary for enhancing the development of 21st century learning outcomes and success in work, life and citizenship. This could help to close the mismatch gaps between what they offer and what the industry requires. Involving stakeholders in running institutions could also give synergy from varied experiences that may enable an institution to advance in offering quality education and maintaining high standards of performance.

i) Establishment of a Placement Department

A university should put in place a placement office/department and link it to the industry. The department should keep a comprehensive data base of the market demands and also work closely with the industry to ensure a regular interaction between professionals and the university faculty, staff and learners for the purpose of exchanging ideas on the skills needed by the industry.

j) Emphasize Community Service

This should be encouraged because volunteering on campus activities develops soft skills which could develop graduates who are socially consistent with positive values and attitudes than enhance global citizenship

k) Internship

Universities should diversify internship programmes to enhance sufficient practical experience halfway through the programme and towards the end to ensure that students apply the feedback from the industry experience to sharpen the skills needed for effective work performance. Such feedback could help teachers to reflect on their

teaching practice continually, leading to improvement of curricula scope, objectives, teaching methods and assessment.

l) Creating Effective Learning Environment

Universities should create learning practices, learner support and physical environments that support the teaching and learning of 21st century skill outcomes. They should also support professional learning communities that enable educators to collaborate, share best practices and integrate 21st century skills into classroom practice. They should also provide learner academic support by putting in place ramps to facilitate learners with physical disabilities, escape points in case of fire and assistive technology such as braille for the visually impaired learners.

m) Integrating Values in Education

Universities should sensitize faculty and staff, parents the community and other stakeholders on the need to nurture learners with values through modelling in order to produce empowered ethical graduates with skills for citizenship.

n) Faculty Development

Universities should facilitate faculty members with ongoing opportunities for in-service training, research, workshops, seminars/conferences and further studies to help them gain new skills that enable them adapt to reforms in education and thus offer relevant education.

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