



Confronting the Challenges of University Technical Vocational Education and Training in Uganda

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Abstract

This paper presents the major institutional, community, national, and regional challenges of promoting effective Technical Vocational Education and Training (TVET) training system in line with the 2030 SDG 4 with a focus on Uganda. Uganda has been faced with several attempts to reform the vocational education system and the country has continued to meet various levels and bases of political social-economic and environmental challenges. The objectives of the paper was to examine the political challenges facing TVET in Uganda; assess the social factors that have affected the prospect of TVET in the country, and establish the major economic factors that have negated the planning of vocational education in Uganda and discuss the common environmental issues that have affected the success planning of vocational education of the country, this paper was informed by policy analysis and systematic literature review with a focus on documents obtained from the Ugandan government and national vocational institutions in the country. More information was obtained from internet sources, new bulletin, e-mail discussion experiential learning and informal discussion with key informants on the subject. Results indicated that enabling political, social, environmental, and economic factors are critical for the productive performance of successful national TVET planning in Uganda. In addition, it is imperative to promote social, economic, environmental, and political commitment at the top level for a prudent inclusive TVET system, curriculum planning envisaged by the SG4. The roles of public-private community partnerships (PPCP) should be well planned, funded, coordinated, motivated, and constantly fully enhanced for effective TVET implementation in the country.

Keywords: TVET, Vocational Education, SDG 2030, Training, Uganda

INTRODUCTION

Technical Vocational Education and Training (TVET) and Sustainable Development (SD) are considered as aspects of change anticipating the impact of globalization, technological change, trade liberalization, exports and Foreign Direct Investment (FDI), environmental questions linked to climate change and the increased international movement of labour (Acworth, 2008; GoU, 2020). Accordingly, Technical Vocational Education (TVET) and Sustainable Development (SD) are seen as the engine of economic development, international competitiveness and knowledge-intensive economic sectors or sub-sectors. Similarly, TVET and entrepreneurship are also considered inter connected dimensions. The TVET systems are expected to produce world-class skills for global competitiveness on one hand and to link informal economies to formal TVET through the provision of skills that enable people to access decent jobs and integrate into mainstream economic life on the other as stressed by the government of the republic of Uganda in a new TVET policy (GoU, 2019). Technical, vocational, and entrepreneurship systems are standing in the way-there

will be no decent work or economic growth unless we ensure these systems are truly youth-inclusive (GoU, 2020). Implementing the dual system which consists of part-time apprenticeship in a company for the purpose of vocational training and part-time technical education may help solve youth unemployment problems. This system makes it easy transit school to work. There is a strong linkage between work-based training and apprenticeship, and school-based education in this system which is effectively used by Germany and Japan. Besides school-based vocational education, it gives the opportunity to Uganda to adjust workers' skills certified informally (GoU, 2019).

The collaboration between universities and the industry is increasingly perceived as a vehicle to enhance innovation through knowledge exchange. The universities–industry collaboration (UIC) refers to the interaction between any parts of the higher educational system and industry aiming mainly to encourage knowledge and technology exchange. This actually implies that for sustainable employment to be created there should be a link or cooperation between industries, communities and vocational institutions or Universities. This is evident by significant increase in studies that investigate the topic from different perspectives. However, this body of knowledge is still described as fragmented and lacks efficient comprehensive view. To address this gap, we employed a systematic procedure to review the literature on universities—industry collaboration (UIC). The review resulted in identifying five key aspects, which underpinned the theory of UIC (Acworth, 2008). The study integrated these key aspects into an overarching process framework, which together with the review, provide a substantial contribution by creating an integrated analysis of the state of literature concerning this phenomenon. Several research avenues are reported as distilled from the analysis.

An ideal TVET system is an employer-led skills development structure anchored on research, policy and strategic planning. It is based on analysis of needs and priorities of the labour market which then informs the development of job profiles, standards, qualifications, and curriculum development (GoU, 2019). The TVET funding should be prioritised to meet the critical skills in the economy. The system should have a clear institutional framework which allows quality delivery of all forms and modalities of TVET; careers advice and recruitment; accreditation; assessment and certification; monitoring and evaluation of the system (GoU, 2019). When we talk about challenges, these are issues, facts, situations, conditions or factors that requires special focus, attentions, skills, policies investment, knowledge, funding and other forms of competitiveness to achieve them within a given time and space. This means that challenges are seen or perceived or understood differently by different people through different perspectives. Some people look at challenges as problems, constraints, difficulties, or hurdles that need to be settled or solved. At the same time, other people at challenges from the point of views of opportunities or benefits for different necessary challenges can be caused by different social, economic environmental and political factors or situations. So, this work is intended to examine the above factors from the point of view of challenges that take university community partnership in training vocational engineering students to enable them obtain employable practical skills at the end of their university career.

METHODOLOGY

This paper was informed by sourcing key policy documents from Uganda government for analysis in addition to conducting a systematic literature review regarding the major challenges which the TVET system in Uganda have continued to face. Additional information was obtained from by research findings conducted on the issue by the TVET researchers based in Kenya with a focus on the University of Eldoret. More data were collected from the national TVET institutions and projects in Uganda. Some data were gathered through internet searches and discussions as well as the lessons learned. The paper also relied on informal information from the engineering graduates from Kyambogo

University. Data searchers were focussed on the key social, economic, and political challenges that have continued to affect most university engineering students in the labour market, why adaptability as well retention in the Ugandan labour market has always been very problematic without any clear evidence of abating in the near future. Multiple internet search was conducted by use of the major search engines like Google for additional data mining using key search terms to establish what caused the employability of engineering graduates in the Ugandan labour market, and the adaptability of engineering graduates in the Ugandan labour market. In addition, the study investigated how engineering graduates could be retained in the Ugandan labour market. This review of the Ugandan situation focused on the field of TVET engineering. Therefore, our units of focus would centre on trainers (lecturers), trainees (engineers), and labour market (employers) in Ugandan industries; and local community members within the engineering services to gauge the status of employability, adaptability, or retention of engineering graduates in the job (labour) sector.

RESULTS AND DISCUSSION

The ideal TVET system has never been implemented in Uganda due to a number of challenges namely: overlapping mandates with other institutions; lack of an institutional framework; lack of clear establishment procedures for BTVET Institutions; lack of transitional provisions for the existing Institutions; established and regulated under other laws such as the Universities and Other Tertiary Institutions Act, 2001 (GoU, 2001a) and the Education (Pre-Primary, Primary and Post Primary) Act, 2008 (GoU, 2008b); and lack of governance structures for BTVET Institutions (GoU, 2019). When we talk about challenges, these are issues, facts, situations, conditions or factors that requires special focus, attentions, skills, policies investment; knowledge, funding and other forms of competitiveness to achieve them within a given time and space. This means that challenges are perceived or understood differently by different people through different perspectives. Some people look at challenges as problems, constraints, difficulties or hurdles that need to be settled or solved. At the same time, other people look at the challenges at the point of views as opportunities or benefits for different necessary challenges that can be caused by different social, economic environmental and political factors or situations. It is therefore (GoU, 2006c) important to examine how challenges impact upon acquisition of practical skills among the students training in vocational engineering (Colleges and institutions Act, 2006). Studies have isolated a number of challenges that affect offering of sustainable employable engineering graduates' skills through industry community (GoU, 2020). These include:

Social Challenges of TVET System

Uganda still lacks sufficient number of trainers with the required trainers' competences; limited industry participation; and inadequate research support services (GoU, 2019). Other challenges include: poor geographical distribution and location of TVET institutions; negative perceptions of TVET; low enrolment for females in Science, Technology, Engineering and Mathematics (STEM) related courses and unfriendly environment for people with special needs. Furthermore, there is uncoordinated admission of students to TVET institutions (GoU, 2019). Many communities today are facing financial constraints which may be caused by different factors such as low or declining enrolments, increasing cost of materials or supply such as food items, high taxes, unfavorable policies and increasing competition among themselves. All these may affect the welfare of students including provision of training materials in workshops or teaching in classrooms or lecture theatre. It has led to the students spending limited time on the campus (Barro & Lee, 2013).

Most local communities and industries are facing financial crises due to mismanagement of community fund and cases of corruptions or frauds as a result of poor accountability some of the cases of industrial corruptions are associated with procurements of services, materials and work such as constructions and building projects (GoU, 2006b). This means that a lot of

money had been spent on what was not budgeted for. So, diverting money means that industries and communities are constantly broke. Many Industries and communities face economic problems that have direct implication on Industrial-community vocational engineering skill training because they are not successful in promoting research and innovations among students, academic, and the technical staff (GoU, 2020). The teaching staff pay is also affecting the higher institutions of learning in the developing countries.

In addition, many industries and communities are not actively participating in inter industrial research collaboration which are very important sources of attracting grants or finance into industrial system. This means a lot of money is excluded from the industries and communities which do not conduct community engage research activities such as communication skills training services (GoU, 2008 a). Industry and community also face both social and economic problems which may present different types of challenges that may affect the effective and efficient planning as well as management of any joint training programme that are intended to equip vocational engineering students with marketable or employable professional skills through industry and community. One of the main challenges which many community faces is caused by cultural factors such as attitudes, perceptions and behavior which may seem to be in conflict with experience of the students who comes to the local community to perform training skills (GoU, 2020). There are classes of different cultures, level of education and communication skills that may in some cases promote misunderstanding between the universities and the community members who are expected to work as collaborators (GoU, 2020). These social challenges can be addressed through mutual understanding between the universities and the communities.

Economic Challenges Facing TVET System

There is too low enrolment in TVET institutions due to the high cost of technical training and lack of awareness and many trainees end up in cheap alternative programmes whose graduates do not acquire the requisite skills relevant to the world of work (GoU, 2019). The TVET delivery remains inadequately funded, fragmented and uncoordinated across the various sectors. This in part has led to implementation failure (GoU, 2019). Thus, the need to develop the TVET Policy to support the implementation of key reform undertakings in the education system and also facilitate the review of the current laws and generate an appropriate legal framework to support the socio-economic transformation of the country (GoU, 2019). From economic point of views, many local communities maybe faced with different types of economic problems which affect their incomes for household or family businesses or investments and also for educating their children up to the university level as a result; many communities are generally illiterate or not very familiar with the value of education at household level.

This presents special problems in a situation where communities are expected to host trainings of the vocational engineering students in their localities. Besides, a large number of students lead to the scarcity of resources in these developing countries. The nations cannot fully back as well as fund the students (Stromquist & Monkman, 2014). The industries and communities expect direct financial benefit from universities in the implementation of the training project but their expectation may not be met to their expectations because Industries and communities consider the training to be the benefit to the communities as a result, they are reluctant to contribute money or cash to the communities. Another economic frustration which many local communities and industries usually face in offering sustainable employable engineering graduates' skills through industry and community is that some community outreach activities such as training projects come from poor performance or failures of such community-based projects. This means that such projects tend to deliver economic benefit aimed at reducing poverty or promote economic progress (GoU, 2019). According to studies have established that some communities tend to be hostile to the idea of collaboration with the universities for economic reasons hence posing a challenge to the

possibility of collaboration for vocational training skills (GoU,2019). The local communities face and directly affect the collaboration with the universities in relation to vocational engineering students due to the problems associated with transport infrastructure, power supply, piped water, local materials, local skills, affordable accommodation, and workshops facilities (GoU, 2008 b).

Political challenges

Currently, the interventions in the BTJET sub-sector are guided by the BTJET Act of 2008 (GoU, 2008 d) which highlights the following: promotion and coordination of business, technical, vocational education and training; the principles governing BTJET; establishment of the institutional framework for the promotion and coordination of BTJET; establishment of the Uganda Vocational Qualifications Framework; financing of BTJET (GoU, 2019). There are many political issues which are very difficult to be achieved for effective collaboration between universities and the communities. These challenges includes government policies, laws, rules and regulations, as well as standards for establishing the vocational educational training institutions many of the policies and regulations are very restricted and at times too expensive to implement successfully some of the problems of implementing vocational engineering skills training skills face unrealistic problems which normally takes too long to implement in good time for instance the cites have to be inspected, visited, approved and licensed by different regulatory authorities at central and local government level (GoU, 2019).

Instead of explaining governance or the supposedly new forms of it in terms of ‘some inexorable logic of modernization or changing institutional challenges’ of governance is understood from this perspective as ‘a product of diverse practices that are themselves composed of multiple individuals acting on all sorts of conflicting beliefs (GoU, 2008 b). Some of the policies and laws are conflicting directly and it might require expensive and prolonged legal process to resolve them. The reflections on the effective treatment of knowledge problems do not look for something which can be considered as rational or objective. Instead, the reflections are concerned with the question, why actors in some contexts consider something as evident and relevant for their action which is perceived by others as nonsense (GoU, 2006a). There is also a challenge of constant government interference, which is not always aligned to industry needs. This is because they receive funds from the government which originate from industry taxes. Political interference by both the local and national political figures or political systems as well as government official at different levels are known to directly interfere politically with activities that take place in places where they had direct influence or conflict of interest. This may take different forms of political interference such as transfer relevant officials who are responsible for promoting the project, making false allegations against the benefits of implementations of the project and at times claiming ownership of land use where a project is located or established (GoU, 2019).

Therefore, the common challenges that industries and communities face in their partnership or collaboration to train vocational engineering students with practical, employable skills for labour market are known to affect both industries and communities at different levels and result from different reasons that can be characterized by social, economic and political factors at local institutional community and national level. Community refers to different places in urban or cities peri urbans or suburbs and villages or rural areas. So, in this case, community refers to people who live in particular geographical area and who are affected by issues that might happen in the common places that they live in. In brief, we have urban peri-urban and rural communities. The community refers to a local social system or a set of social relations in a particular bounded area. Thus, the concept of community can be applied to homogeneous groups or people who have common culture heritage profession or trade or belief the concept can also be applied to some ecological species.

General Socio-Economic and Development Challenges

Regarding the challenges from the point of views of the universities, the main social challenges are associated with the attitudes; behaviors and conduct of the students generally affect their performance at work places in the community. At time students also face social challenges that are caused by conditions that they face at the university where they are studying e.g. social conditions or situations at their universities such as harassments, insults or abuses. Lack of attention or negligence by the university administration and management may cause a lot of suffering and frustrations to many students. These negative social conditions may psychologically be able to affect their performance. From economic perspective or point of view, many students face difficulties or problems (challenges) in obtaining money for their university education which in turn may prevent them in participating in university community vocational engineering training institutes effectively or on regular basis.

Many students face an economic challenge because they come from poor families of households which have very low income. In some cases take socio economic exclusion from the communities where they live so in this case the students are merely struggling to survive or to meet basic needs will find it very hard to regular attention on the vocational engineering skills training programmes between the university and the community they may attend the training with lack of confidence and frequent absenteeism due to financial difficulties that would be associated with transport, food, accommodation and other forms of communication or basic requirements for the training programmes (GoU, 2020). On the other hand, universities face difficulties in planning and managing university community students training activities due to budget problems Many universities today are facing financial constraints which may be caused by different factors such as low or declining enrolments, increasing cost of materials or supply such as food items, high taxes, unfavorable policies and increasing competition among themselves. All these may affect the welfare of students including provision of training materials in workshops or teaching in classrooms or lecture theatre.

Likewise, universities face financial crises due to mismanagement of university fund and cases of corruptions or frauds as a result of poor accountability some of the cases of university corruptions are associated with procurements of services, materials and work such as constructions and building projects. This means that a lot of money has often been misallocated. Many universities face economic problems that has direct implication on university community vocational engineering skill training because they are not successful in promoting research and innovations among students, academic, and the technical staff in addition, many universities are not actively participating in inter university research collaboration which are very important sources of attracting grants or finance into university system. This means a lot of money is excluded from the university which do not conduct community engage research activities such as university communication skills training services (GoU, 2020).

Similarly, local communities face socio-economic problems which may present different types of challenges that may affect the effective and efficient planning as well as management of any joint training programme that are intended to equip university vocational engineering students with marketable or employable professional skills at the end of their university graduation (GoU, 2020). One of the main challenges which many communities face is caused by cultural factors such as attitudes, perceptions and behavior which may seem to be in conflict with experience of the university student who comes to the local community to perform training skills. There are classes of different cultures, level of education on and communication skills that may in some cases promote misunderstanding between the universities and the community members who are expected to work as

collaborators. These social challenges that can be addressed through mutual understanding between the universities and the communities.

From economic point of views, many local communities may face with different types of economic problems which affect their incomes for household or family businesses or investments and also for educating their children up to the university level as a result, many communities are generally illiterate or not very familiar with the value of university education at household level. This presents special problems in a situation where communities are expected to host trainings of the university vocational engineering students in their localities. The communities expect direct financial benefit from universities in the implementation of the training project but their expectation may not be met to their expectations because universities consider the training to be the benefit to the communities as a result, they are reluctant to contribute money or cash to the communities. Many universities are also straps that make it difficult for them to consider making and direct payment to the locals except in a few cases of those who are servicing in the training project.

Another economic frustration which many local communities usually face from university community outreach activities such as training projects come from poor performance or failures of such community-based projects. It is known that many university communities outreach activities either or successful not or sustainable. This means that such projects paint to deliver economic benefit which they were intended to produce to reduce poverty or promote economic progress through unimproved economic welfare of the household for income for families as a result, many communities do not consider the value of university outreach programs that may be internal to promote economic development in line with the government policies. This means that some communities are likely to be hostile to the idea of collaboration with the universities for economic reasons. In that case, they present a big challenge to collaboration needs for vocational training of university students.

Additional economic problems that communities face and directly affect the collaboration with the universities regarding training of vocational engineering students is related to community development goal such as infrastructures eg good roads, power supply, piped water, local materials, local skills affordable accommodation or workshops and security of supply and facilities for the production workshop the general lack of community development per day is a big challenge to the entire collaboration process. There are many political issues which are very difficult to be achieved for effective collaboration between universities and the communities. These challenges includes public policies, laws, rules and regulations, or standards for establishing TVET institutions many of the policies and regulations are very restricted and at times too expensive to implement successfully some of the problems of implementing vocational engineering skills training skills face unrealistic problems which normally takes too long to implement in good time for instance the cites have to be inspected, visited, approved and licensed by different regulatory authorities at central and local government level (GoU, 2020).

Some of the policies and laws are conflicting directly and it might require a very expensive and prolong legal process to resolve them all. All these cost money, time and materials. Many of these delays and frustration caused to implement the project may be motivated by different level of corruption which are known to exist within both central, local and other authorities. The above policy challenges also affect very important areas of collaboration such as environmental requirements for setting up a training workshop or institution. This includes the requirement for reports for environment studies or environment impact assessment, audit report every year when investment is launched all these activities require hiring private environment consultants or professionals who normally charge too high fees before doing the work. Political interference by both the local and national political figures or political systems and government official at different levels are known to directly

interfere politically with activities that take place in places where they had direct influence or conflict of interest.

This may take different forms of political interference such as transfer relevant officials who are responsible for promoting the project, making false allegations against the benefits of implementations of the project and at times claiming personal ownership of land use where the project is located or established. As indicated before at the beginning, the common challenges that university community face in their partnership or collaboration to train vocational engineering students with practical, employable skills for labour market one known to affect both universities and communities at different levels and different reasons that can be characterized by social, economic and political factors at local institutional community and national level.

CONCLUSION AND RECOMMENDATIONS

Employee retention is the organizational goal of keeping talented employees and reducing turnover by fostering a positive work atmosphere to promote engagement, showing appreciation to employees, and providing competitive pay and benefits and healthy work-life balance. Employers are particularly interested in retaining employees during periods of low unemployment and heightened competition for talent. Uganda has a number of engineering courses that includes: Mechanical engineering, civil engineering, electrical engineering, engineering in automotive, power engineering, engineering in industrial engineering and management. Engineering courses in Uganda takes duration between two to three years for their completion. By having the industrial training, it is thus one of the options to equip students with such experiences. In order to ensure the engineering graduate students are well equipped with excellent qualification and background, the industrial training programme is made a compulsory course for all students. Studies have shown that engineering students in Uganda at their respective sites depending on the engineering course they are doing and with excellent qualification or background, are always retained in the labour market by employers.

The global rapid technological change is also one of the factors that affect the retention of engineering graduates in the Ugandan labour market. Educational technology must inevitably be integrated into classrooms and curricula. With the advent of educational technology in the classroom teacher, education is faced with the challenge that teachers integrate educational technology in their daily work. Despite the slow technological development in Uganda, the curriculum in Uganda highly puts into consideration technological changes right from the time of designing up to its implementation. This explains why engineering students employ the use of some software in the course of their studies so that they acquire more knowledge and skills to apply in the contemporary society, majorly in the Ugandan labour market. For example, Autodesk product design suite (AUTOCAD), MATLAB, BricsCAD, Solid edge (Solid works) and many others. There is evidence that engineering graduates with more of computer skills or knowledge tend to be considered at the expense of those without, hence retained at their places of work.

The curriculum in Uganda ensures that the engineering students acquire appropriate skills relevant to the engineering courses they are pursuing. For example, a successful mechanical engineer is creative, efficient, detail-oriented, and mechanically inclined. He or she must be a master of computer design and have specialized knowledge of physics and electricity in order to produce efficient, reliable machines. With this efficiency, workers are more motivated with their job as compared to untrained employees. As a result, their employers retain them because of their productivity. This may also be referred to workers' retention policies that employee retention strategies referred to the mean, plan or set of decision-making behaviours put in place by organizations to retain their competent workforce for

performance. These strategies include fair pay or security, Enumerations, working environment, Career development opportunities, management support, share options, performance bonus, restraint of trade and exciting work and challenges. The curriculum in Uganda thus provides such knowledge and skills to generational employers in order to succeed in retaining their workers.

In addition to courses not being personalized, another big issue the Uganda engineering curriculum addresses is the phenomenon of feeling disconnected. Due to the lack of face-to-face instruction, this can be a complex problem to address for online course creators. A study conducted by the programme, Aloha (Active Learning Office Hours and Assignments) found that students who participated in their interactive group activities scored a final exam grade nine percentage points higher than students who weren't required to participate in the program. The engineering curriculum has thus seen this as a way of also improving skills and experience of engineering graduates. Ideas for virtual social interaction include: Virtual office hours; Group project opportunities; Breakout discussion groups; Mid-lesson polling; and encourage virtual hand-raising. As a result, these learners attain additional skills and experience from other fellow students and instructors hence prompting their retention because of their efficiency in the labour market.

It is vital to encourage students throughout the duration of the course can dramatically cut down on dropouts. An easy way to do this is to carve out time for instructors and students to set individual goals at the start of a course. These goals can be checked on periodically to encourage students along and ensure that they follow through. With the Ugandan engineering syllabi, the instructors or lecturers perform their best to ensure that engineering students attain adequate knowledge and skills for their efficiency in production hence making their retention by employers inevitable. Communication is the process that occurs between two or more people in which a message is delivered and received by the other party. Communication happens every day at the workplace. Effective communication is an essential component of organizational success at the interpersonal, intergroup, intragroup, organizational, or external levels. Managers give direction to workers; coworkers communicate to plan a project and employees communicate information to customers. Poor communication leads to misunderstandings and poor customer service.

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