



## **The Role of TVET Managers in the Implementation of Real-Life Project-Based Learning for Competence Development of TVET Trainees in Uganda**

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### **Abstract**

*Real-Life Project-Based Learning (RLPBL) has long been used especially in developing countries. Various results of RLPBL related studies have also been found to be effective and have a positive impact on trainees. The purpose of this study sought to determine the capabilities of TVET Trainers regarding the implementation of real-life project-based learning for competence development of Technical and Vocational Education and Training (TVET) trainees in Uganda. The study aimed at finding out the ideal TVET Trainer abilities for implementing Competence Based Education & Training (CBET) in Uganda. The study adopted the descriptive survey design with a mixed methods approach. The sample size of 488 study participants included TVET trainers, heads of institutions and Ministry of Education & Sports officials and trainees. Qualitative sampling and simple random sampling techniques were employed; data collection was carried out using questionnaires, interview schedule, observation checklist and a Focus Group Discussion Guide. The data were presented in form of tables employing the use of frequency distribution and percentages and the data was analysed using descriptive statistics with Statistical Package for Social Sciences (SPSS). The study revealed the roles of TVET Managers included initiating mobilization of resources including personnel, funds and training materials, planning, directing and coordinating the implementation of real-life project, guiding trainers on the best real-life training strategies, and motivating the trainers morally and materially in addition to monitoring, support supervision and assessing real life projects. It was recommended that they also deal with the labour information management system with required data of trainees and graduates, to tracer studies to reveal where the TVET graduates are and what they are doing as their major roles*

**Keywords:** Real-Life Project-Based Learning, Competence Development, TVET Managers.

### **INTRODUCTION**

This paper focused on determining the role of TVET managers regarding the implementation of real-life project-based learning for competence development of technical and vocational education and training (TVET) trainees in Uganda. This paper included, Competence-Based Education and Training in Uganda, Real-life Project based learning in Uganda and Skilling Uganda Strategy. The scope of the Study, literature review, methodology, results and discussion and recommendations are mentioned.

#### **Competence-Based Education and Training in Uganda**

In 2016, Uganda through National Curriculum Development Centre (NCDC) introduced Competency-Based Education and Training (CBET) curriculum for Business, Technical and Vocational Education and Training (BTNET) sub-sector. The new curriculum introduced Competence-Based Assessment (CBA) being implemented by a new examination body

known as Uganda Business and Technical Examinations Board (UBTEB) which opened doors in 2011. In competence-based education (CBE) assessment, student progress is measured on the basis of demonstrated competences (Barman & Konwar, 2011; Biemans, et al., 2009). Real-life project-based learning on the other hand was introduced as one of the approaches used to implement Competency-Based Education and Training (CBET). It is intended to enhance TVET graduate's capabilities for decent employment and entrepreneurship.

### **Statement of the Problem**

The increasing number of poorly trained, unskilled, unemployed and under-employed TVET graduates every day becomes a threat not only to the TVET sub sector but also to the stability of countries in their development process. It is estimated that almost 100 million young men and women in Africa are unemployed or in low-paid jobs (UNESCO, 2012).

Consequently, the quality of the workforce is low and inadequate. Uganda is not different, NDP111 (2020) highlights that human capital development remains a major concern with estimated 13 million skills gap in key Sectors-Agriculture, Manufacturing, Construction, Oil and Gas and Tourism.

While the labour force growth rate is estimated at 4.7 percent per annum in 2012/13 and a projected job gap of 13 million Ugandan people between the formal labour market size and the total employable labour force (NDP11, 2016). There is lack of quality and standards in the conduct of real-life projects, continuous assessment and inadequate private sector involvement (Belgian Development Agency, 2018). This study explored the critical area the role of TVET managers in implementing real-life project-based learning for competence development of TVET trainees in Uganda.

### **Real-Life Project Based Learning in Uganda**

Real-life project-based learning is an active learning by doing and it is also known as a multifaceted approach to training in which trainees come up with real-world tangible products assessed by experts while working individually or in small collaborative groups. Real-life projects involve problem identification, solution identification, project planning and designing, project implementation and presentation (UBTEB, 2021).

In response to this problem, the Ugandan Government through the Ministry of Education and Sports approved the most substantial legal instrument guiding the policy formulation and reforms for TVET education sub sector known as the BTVET Act, 2008. According to this act the objective of BTVET is to provide relevant and quality knowledge, values and skills for purposes of academic progression and employment in the labour market to the larger number of persons in an affordable way, and to improve the productivity capabilities of the individuals and enhance employability (GoU, 2008).

In the same effort, the Ugandan TVET sub sector made a paradigm shift through a strategic plan titled "Skilling Uganda" 2012-2022 which symbolizes a paradigm shift for skills development in Uganda. The objective of the strategic plan is.

*'...to transform BTVET system from an educational sub-sector into a comprehensive system of skills development for employment, enhanced productivity and growth. The main purpose will be to create employable skills and competencies relevant in the labour market instead of educational certificates. It will embrace all Ugandans in need of skills, not only primary and secondary school leavers. (GoU, 2012).*

The main purpose is to acquire employable skills and competencies for the youth, relevant in the labour market instead of educational certificates. It embraces all Ugandans in need of skills, not only primary and secondary school leavers (Skilling Uganda Strategic Plan, 2012).

Based on the foreseen reforms, National Curriculum Development Centre (NCDC) reviewed the curricula for TVET institutions in Uganda. In effort to produce skilled workforce that meet current and future labor demands, Competency Based Education and Training (CBET) a mode of training where the emphasis is placed on the acquisition of competencies was introduced in Uganda in 2016. The most important approach in this revised curriculum is the emphasis of real-life project-based learning because it is meant to enhance skills for employability, enhanced productivity, and entrepreneurship in order to tackle youth unemployment, already significantly high in Uganda (NDP 11, 2016).

### **Scope of the Study**

The study was conducted between February, 2022 to July, 2022 and it was limited to only TVET institutions in Uganda.

## **LITERATURE REVIEW**

Several studies were conducted about project-based learning for competence development of TVET trainees. In USA, Kwietniewski (2017) did a literature review about Project-Based Learning at the State University of New York College at Buffalo, he observed that real-world application of projects in training allowed learners to improve their competencies and supplement their preparation for lives after school. They also learned how to collaborate, make connections and manage themselves.

According to Mehmet and Mikail (2015) meta-analysis conducted in Turkey to identify the effects of project-based learning approach to the academic achievements of the learners in science classes it was found that project-based learning was more effective than the traditional teaching methods. They observed that the core significant potential and important objective of real-life project-based learning approach was the advancement of innovativeness and productive thinking. Projects were designed and implemented by the learners themselves with guidance from trainers; this strengthens ownership of the project, integrating cognitive and metacognitive domains at individual level and their contextual desires at the institutional level (Sharipova & Wesseler, 2018).

In Uganda, Wenani (2019) took an action research study with the aim to improve the performance of the Real-Life Project module in building and construction trainees at Amero Technical Institute. The findings confirmed that teaching and learning in groups yielded better performance and motivation of learners and therefore could improve the quality of TVET graduates. However, it was further found out that TVET Trainers were not taking much attention to real-life project based learning approach which jeopardises the impact of the module to the learners). In the study about the employers' perception of the employability of TVET graduates in Uganda, it was established that much as the graduates possessed the basic skills, ICT skills and interpersonal skills required for work, it was also established that most employers negatively perceived some areas about TVET graduates (Kintu et al, 2019). These areas included, product finishing, decision making and reasoning; regarding self-esteem, sociability, integrity and honesty, materials selection, estimation of quantities and facilities management, understanding of systems, monitoring and improving of systems designs; and issues of application of technologies (Kintu et al, 2019). Bender (2012) established that implementing real-life project-based learning involves a dramatic departure from traditional modes of training, thus, a trainer used to that style of teaching

would undergo some degree of awareness of difference between their past teaching practices and the novel approach of real-life project-based learning. Furthermore, the problem must usually be complex and open-ended in order to allow a range of possible solutions and responses (Kahn & O'Rourke, 2004). Examples from the literature range from technical questions, such as how to speed up motion recognition software (Otake et al., 2009), to those requiring a combination of scientific and social investigations such as a pre-feasibility study for a multi-purpose leisure trail on a disused railway (Nation, 2006), to social issues, such as how to help adult learners returning to education (Green, 1998). Furthermore, on the question of who determines the problem (teacher, student or external partner) varies widely across the cases described in the literature. However, (Danford, 2006; Bell 2010) claim that a key feature of real-life project is that learners have some choice of topic as well as the nature and the extent of the content in the project although adding that the majority of projects are initially identified by the lead staff member and developed further by learners. They also insist that the learners' choice of a topic should be based on questions that have piqued their natural curiosity, as a central approach since it fosters their motivation. However, several cases in the literature rely solely on teacher-defined questions.

The differentiation between the extents of teacher versus student control of the project forms an essential part of Kolmos's (1996) categorization of project types which includes: (a) The assignment project, significant input and control from trainers who choose problems and topics closely related to the academic subject. (b) The subject project is where learners can choose their methods for investigating their choice of a range of pre-selected problems and (c) The problem project: where the problem determines the choice of disciplines and methods (Kolmos, 1996 Pg 143). Kolmos explains that each is right for various stages of study, providing different skills and learning outcomes. But for Blumenfeld et al. (1991) found that what matters is not who decides the question but that the outcomes must not be predetermined so that genuine ownership of the process and exploration may take place. There is also little consensus in the literature on whether the problem needs to be actual or may be simulated. For Morgan (1983) it may be either, but the learners must have some say over the design of their project. As suggested by Moehr (2004) above, some projects involve partnerships with external clients and deliver actual professional outputs which can be used by these external actors. Examples include international market research carried out by business learners at Helia University in Finland for corporate partners (Danford, 2006) and feasibility studies for sustainable waste treatment facilities undertaken by learners from Melbourne University for a new-build campus in Vietnam (Meehan & Thomas, 2006) and here, clearly, student choice was limited.

## METHODOLOGY

This paper adopted the descriptive survey design with a mixed methods approach. The term "mixed methods" denotes to an emergent methodology of research that advances the systematic integration, or "mixing," of quantitative and qualitative data within a single investigation or sustained program of inquiry. The main reason for selecting this methodology was that such integration allows a more complete and synergistic utilization of data than do separate quantitative and qualitative data collection and analysis (Creswell et al, 2011). The purpose of this design was to investigate in detail how project-based learning was being implemented to achieve its goal of competence development of TVET trainees in Uganda. In addition, Creswell (2014) claims that mixed methods research combines or integrates both quantitative and qualitative research and data in a study. Affirmatively, Koller and Sinitsa (2009) confirm that applying a mix of various methods enables researchers to draw a more holistic representation of the subject under study. The researchers expediently administered up the 36 questionnaires to HoD respondents and made ensure that they were all properly filled and returned. The interviews were also conducted

with 20 heads of institutions and Ministry of Education (MOE) officials. The data collected was analysed using Statistical Package for Social Scientists (SPSS) version 16.0

## RESULTS AND DISCUSSION

This part shows and discusses the response on the study that sought to establish the role of TVET Managers in the implementation of real-life project-based learning for competence development of TVET trainees in Uganda.

### Responses from Heads of Institutions and Ministry of Education officials

#### Response rate

Results for the response rate are presented in table 4.1 below.

**Table 1: Showing Response Rate**

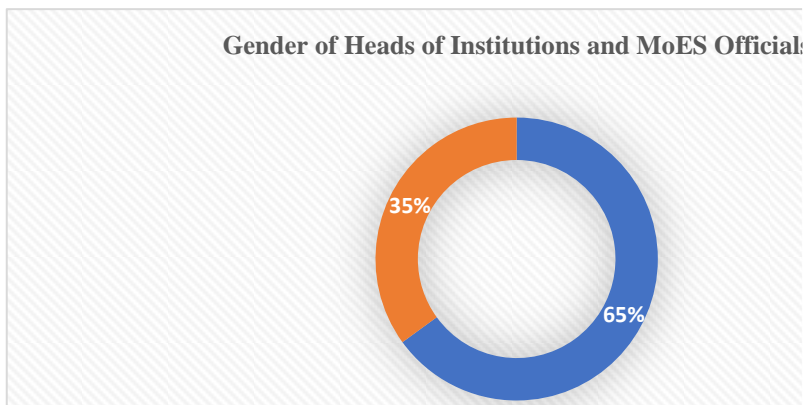
Sample	Questionnaires distributed	Questionnaires returned	Questionnaires fully completed	Response rate (%)
20	20	20	20	100

With reference to Table 1 above, results indicate that the sample for the study comprised of a total of 20 study participants. Therefore, the researcher interviewed 20 participants to the selected study officials from the MoE headquarters, UBTEB officials, UNDCDC official and Head of institutions and all of them accepted. This represented 100% response rate which encouraged the researcher to proceed with research. The findings are in line with those of Kintu et al (2018) about influence of partnerships on quality of technical vocational education and training (TVET).

#### Demographic Characteristics of the Respondents

The background information of respondents was deemed necessary because the ability of the respondents to give satisfactory information on the study variables greatly depends on their background.

#### Gender of the Respondents

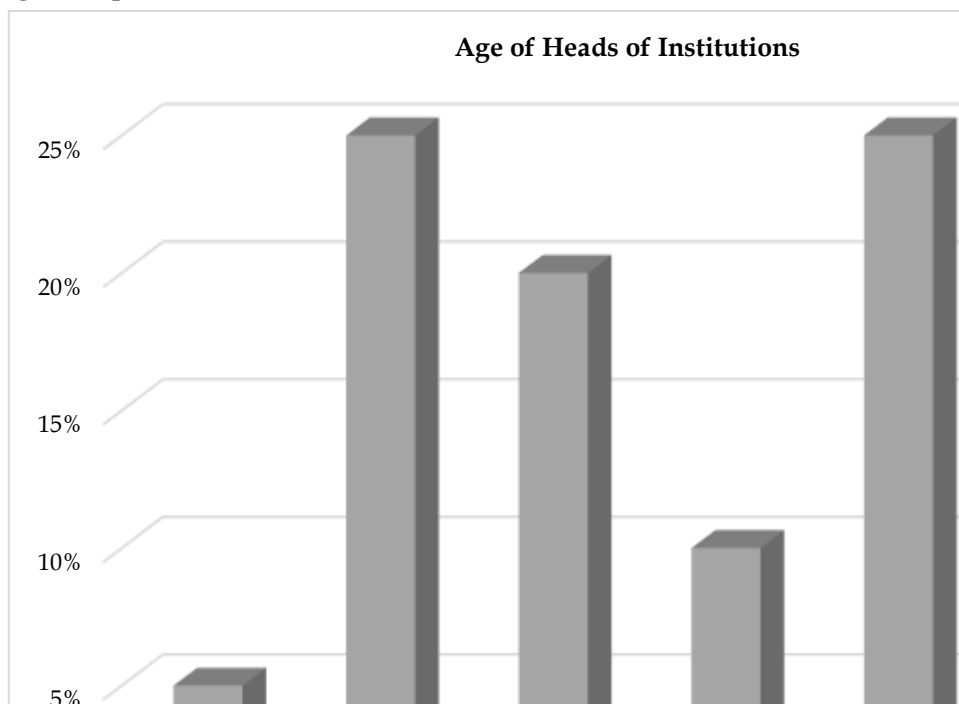


**Figure 1: Gender of the Respondents**

From Figure 1 above, it was revealed that majority 13 (65.0%) of the TVET Heads of institutions and Ministry of Education and Sports officials were males while the rest 7 (35.0%) of the study participants constituted of their female counterparts. This therefore implies that highest proportion of the heads of institutions and Ministry of Education officials under TVET who consented to participate in this study were males because they

take a huge number when it comes to operations and management of TVET institutions than their female counterparts and they also take a bigger share of leadership roles as compared to those of females. The findings are in line with those of Okello (2011) where out of the 20 lecturers, females constituted none compared to 100% who were male.

### Age of respondents



**Figure 2: Age of the Respondents**

As indicated in Figure 2, majority 19 (95%) of the respondents were above 50 years whereas 5% of these respondents were below 35 years (still in their youthful stage). This implies most of the managers are older people who have spent quite some time in the industry. The findings are in line with those of Okello (2011).

### Academic qualifications of the Heads of Institutions

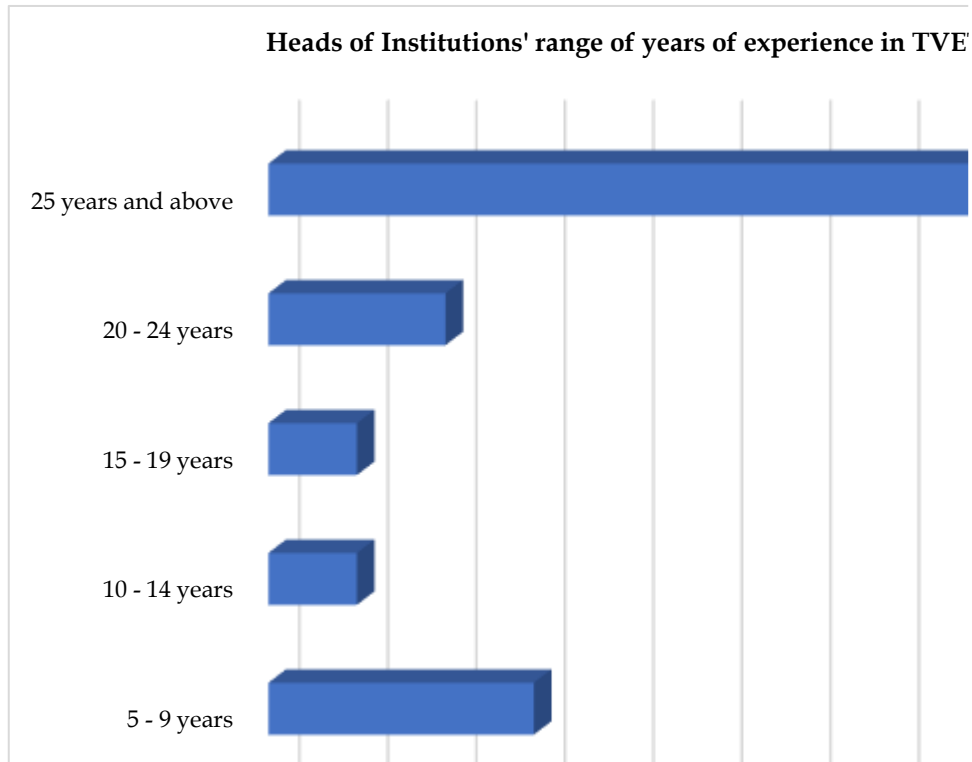
**Table 2: Academic qualifications of the respondents**

Education level	Frequency	Percentage (%)	Valid Percentage (%)	Cumulative Percentage (%)
PhD	2	10	10	10
Master's Degree	8	40	40	50
Bachelor's Degree	10	50	50	100
Total	20	100	100	

As reflected by the results in Table 2 above, the highest proportion 10 (50%) of the respondents had attained a Bachelor's degree in relevant education. Respondents who had Master's degree in relevant education and training followed with a representation of 8 (40%) and lastly 2 (10%) with PhD in relevant training. This therefore implied that most of the heads of institutions and ministry of Education officials were high level graduates who specialized in different trades and all 20 (100%) are professionally trained trainers. The

findings are in line with those of Edward (2014) about the Stakeholders' Roles in Prioritizing Technical Vocational Education and Training in Post conflict Liberia.

### Experience in TVET



**Figure 3: Experience in TVET**

From the figure 3 above, it was revealed that the highest proportion 10 (50%) of the heads of institutions and Ministry of Education officials have experience in TVET of 25 years and above, followed by 3 (15%) below 5 years, 3 (15%) between 5 to 9 years and others as highlighted above. In conclusion, most of the TVET Managers have attached some reasonable level of experience. The findings are in line with those of Edward (2014) about the Stakeholders' Roles in Prioritizing Technical Vocational Education and Training in Post conflict Liberia.

### Responses from Interview Guides

The researcher conducted 20 interviews from Heads of institutions and Ministry of Education and sports officials who included, UBTEB and NCDC officials among others using an interview guide and the responses are presented as below according to the order of questions under the interview guide.

### Responses to Question One of the Interview Guides

Question 1: What is the role of TVET Managers in the implementation of real-life project-based learning for competence development of TVET trainees in Uganda?

#### Responses.

- TVET managers initiate mobilization of resources including but not limited to personnel, funds, training materials, directing and coordinating the implementation of real-life project.

- Technical report writing and practical experience to manage teams.
- Guiding trainers on the best real life project based learning strategies
- Motivating the trainers both morally and materially in implementing real life projects.
- Act as role models in project-based learning through one off physical participation in project work execution.
- Feeding the trainers with the labor information management system and required data of trainee graduates.
- Do tracer studies to reveal where the TVET graduates are and what they are doing.
- Additionally, managers should offer Curricula implementation support in terms budget and continuous professional development, Monitoring and support supervision.
- Facilitate in terms of motivation of the staff and students who are undertaking real-life projects.
- Public awareness about the need for real life projects and market the products, advocate for better policy frameworks and coordinate collaborations, synergies' and networking for real-life projects.

### **Responses from the Focus Group Discussions**

From the 30 focus group discussions conducted each consisting of 12 trainees and in total discussion with 356 trainees, it was revealed that.

The study participants who attended the group discussions were not satisfied with the quality of the real-life trainers. They further responded that the TVET manager's role to provide skilled trainers, practical materials, equipment and adequate time was not effective. Managers and Trainers are in most cases absent especially in Colleges thus giving them less time especially in the morning hours to practice. The study participants informed the researcher that TVET managers allocated only 6 out 36 hours per week for real-life projects hence contributing to only 16.6% of the weekly time for studies.

The study participants also responded when they were asked to discuss how many real-life projects they had done so far ever since they joined their respective institutes, and it was concluded on average that these were only 2 real-life projects for second year students and only one for first year trainees which was largely inadequate

The study participants also reported that the real-life projects are sometimes identified by TVET trainers or managers. However, majority of the real-life projects' being undertaken were initiated and identified by the learners themselves.

They also accepted that most of the products produced were not up to the quality needed in the world of work this was due to the poor quality of trainers in lack of adequate time, materials for practice and lack of TVET managers support supervision and providing quality assurance officers.

The respondents feel incapable to execute similar projects to good quality in the World of work. However, they hope that industrial training will sharpen them to the required standard. The study participants hinted about what should be done to improve on real-life projects in TVET institutions in order to enhance trainees' skills for transition to the World of work and these include; more funding, more tools to be availed, experienced trainers to cater for large numbers of students, adequate time to be allocated to real-life since it is more practical, increase government to support the institutions capacity building of the trainers, be more digital and updated always and all these was the role of TVET managers.



## CONCLUSION AND RECOMMENDATIONS

This section comprises of the summary, conclusions and recommendations which was drafted in relation to the objective and findings obtained in this study. Once data was analyzed and discussed, there was also a need to make final summary, conclusions and recommendations.

The aim of this study was to establish the role of TVET Managers in the implementation of real-life project-based learning for competence development of TVET trainees in Uganda. To achieve this objective, the researcher developed a questionnaire, conducted FGDs, interview guides, personal observations and obtained responses from study participants. The study revealed that the roles of TVET Managers included initiating mobilization and provision of resources including personnel, funds and training materials, planning, directing and coordinating the implementation of real-life project, guiding trainers on the best real-life training strategies, motivating the trainers morally and materially. Monitoring, support supervision and assessing real life project.

It was recommended that they also deal with the labour information management system with required data of trainee and graduates, do tracer studies to reveal what the TVET graduates are doing as their major roles. They also recommended that at least their trainers should give them 70% of the time for hands on training and the remaining 30% for theory related classes.

### Ethical Approval

Earlier to field data collection, the research proposal was presented to Mbarara University of Science and Technology Research Ethical Committee (MUST-REC) which approved the study. Additionally, the committee approved an informed consent document which was used to get consent from the respondents before collection of the data. However, for this study most of the ministry of education and sports officials requested to remain anonymous. The study was also cleared by the Uganda National Council for Science and Technology (UNCST), the body responsible for supervising research activities in Uganda.

### Acknowledgements

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### Competing Interests

The authors have declared that there are no competing interests exist in the study

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