



Beyond appraisals: An analysis of training needs identification for TVET master trainers in Uganda

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ABSTRACT

Technical and Vocational Education and Training (TVET) is essential for developing a skilled workforce in Uganda, with the effectiveness of trainers hinging on accurately identified and addressed professional development needs. This study analyzed the strategies used to identify the training needs of TVET trainers of trainers in Uganda and their influence on professional competences. This study was grounded in the Experiential Learning Theory (ELT). A convergent parallel mixed-methods research design within a descriptive framework was employed, collecting data via questionnaires, interviews, and document analysis from 166 master trainers, administrators, trainees, and policymakers, achieving an 87.5% response rate. The findings reveal that while performance appraisals are the primary tool for identifying needs, their application is inconsistent, and their effectiveness is limited by weak follow-up and resource constraints. Student feedback and industry engagement are recognized but remain largely informal and underutilized, and skills audits are rare. A significant positive correlation was found between the effectiveness of needs identification strategies and trainer competences ($r = 0.480$). Regression analysis confirmed that these strategies explain 23.0% of the variance in professional competences ($R^2 = 0.230$). The study concludes that Uganda's TVET institutions require more structured, competency-focused, and systematically applied approaches to training needs identification. It recommends the co-design of individualized CPD plans with trainers, institutionalization of student feedback mechanisms, sustainable funding, and robust monitoring and evaluation frameworks to enhance trainer competences and align professional development with labor market demands.

Keywords: Continuous Professional Development, Industry Engagement, Performance Appraisal, Training Needs Assessment, TVET Trainers

I. INTRODUCTION

Continuous Professional Development (CPD) for Technical and Vocational Education and Training (TVET) master trainers in Uganda remains weak, fragmented, and largely uncoordinated. Despite being the backbone of skills development, most TVET master trainers in public instructor training institutions lack structured opportunities for ongoing professional growth (Mutebi & Ferej, 2023). CPD activities are irregular, often donor-driven, and not guided by a national framework (Kintu et al., 2019). As a result, many trainers continue to teach with outdated methods, limited industry exposure, and insufficient digital or pedagogical competence. This disconnect has weakened the relevance of training programs, contributing to the mismatch between graduates' skills and labour market demands (Agole et al., 2022; Okware & Ngaka, 2017).

A TVET Master Trainer is a specialized professional who develops the skills and capabilities of TVET instructors. Their major responsibility is to teach, coach, and assist TVET trainers so that they may effectively provide competency-based education that satisfies industry requirements. TVET master trainer aim to improve trainers' technical and pedagogical abilities, such as curriculum building, instructional delivery, and learner assessment. ToTs contribute significantly to the overall quality and relevance of technical and vocational education and training systems by providing trainers with current information, effective teaching methodologies, and industry-relevant approaches (Ministry of Education and Sports [MoES], 2016).

TVET Master Trainer (ToTs) play an important role in determining the quality of vocational education by ensuring that teachers are well-prepared to satisfy industry requirements. During the preparatory phase, ToTs create training courses that are consistent with both national occupational requirements and developing market needs (MoES, 2016). They guarantee that training modules are competency-based, practical, and targeted to the unique abilities needed in different technical domains. Furthermore, ToTs provide trainers with critical pedagogical skills such as lesson preparation, resource management, and the use of new technologies in instruction. Their efforts at this point ensure that TVET teachers enter the classroom feeling confident, organized, and prepared to deliver meaningful learning experiences.



During the delivery phase, TVET Master Trainer teach instructors how to administer training programmes successfully in real-time classroom and workshop settings. They demonstrate best practices in teaching methodologies, such as learner-centred approaches, hands-on activities, and inclusive educational initiatives. TVET master trainers also emphasize the value of communication skills, classroom management, and adaptability to different learning styles. They promote reflective practice in trainers, supporting ongoing development and creativity in training approaches. TVET master trainers guarantee that TVET trainers can confidently impart knowledge and skills to learners by providing mentorship and coaching, making technical training more dynamic and industry relevant (Ismail et al., 2018).

Assessment is an essential component of TVET, and TVET master trainer help trainers develop the skills necessary to perform fair, accurate, and reliable assessments. They teach instructors to create competency-based assessment methods that correctly measure students' practical skills and theoretical comprehension. This covers formative and summative assessment methodologies, rubric use, and constructive feedback techniques. Furthermore, ToTs emphasize the significance of connecting examinations with real-world scenarios to guarantee graduates are job ready. ToTs ensure the integrity and efficacy of the TVET system by requiring trainers to be knowledgeable in assessment design and execution (Kim, 2021). TVET trainers are required to deliver TVET. They direct and facilitate the learning of the essential scientific principles, technological know-how, and general knowledge that comprise TVET. Because TVET encompasses a wide range of vocations, TVET teachers are equally visible in many occupations. Depending on the context and previous usage, they may be referred to as lecturers, instructors, trainers, tutors, or teachers all over the world. Students can get instruction from TVET teachers in a variety of formal educational settings, including skill development centres, vocational institutes, technical institutes, vocational/technical colleges, and universities.

1.1 Statement of the Problem

Uganda Vision 2040, the Fourth National Development Plan (NDP IV), the African Union's Agenda 2063, the Continental Education Strategy for Africa (CESA), and the Sustainable Development Goals (SDGs) all position Technical and Vocational Education and Training (TVET) as a key driver of industrialization, innovation, and inclusive economic growth. These frameworks envision a robust TVET system sustained by highly competent Master trainers (ToTs) equipped with modern technical, pedagogical, and industry-relevant skills to produce a skilled, employable, and innovative workforce (MoES, 2016). Ideally, ToTs should embody occupational expertise, andragogical competence, and soft skills that enable learner-centred instruction, innovation, research, assessment, and mentorship, all essential to achieving sustainable national development goals.

However, the current reality in Uganda's TVET sector sharply contrasts with this vision. Despite policy recognition of TVET's importance, the system is undermined by weak institutional capacity and a near-total absence of a structured, continuous professional development (CPD) framework. Existing CPD initiatives are sporadic, donor-driven, and lack coordination, standardization, and linkage to career advancement (Kintu et al., 2019). Many ToTs operate with outdated technical and pedagogical knowledge, minimal industry exposure, and within poorly resourced institutions with limited digital infrastructure (Agole et al., 2022). These challenges are compounded by chronic underfunding, with TVET receiving only 0.4% of the national education budget (Mutebi & Ferej, 2023), making sustainable CPD nearly impossible. Consequently, efforts to implement competence-based training have had limited success due to the absence of systemic investment and institutional support mechanisms.

The persistent CPD deficit has far-reaching implications. Institutionally, it perpetuates outdated instructional methods, low morale, and inefficient resource utilization. At the national level, it fuels a skills mismatch between graduates and labour market demands, leading to high youth unemployment and low productivity (Okware & Ngaka, 2017). Internationally, it weakens Uganda's progress toward SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth). This study, therefore, seeks to empirically examine the gaps in CPD practices for TVET ToTs, analyze mechanisms for identifying training needs, and propose contextually grounded strategies for a sustainable, coordinated, and impactful CPD framework. The findings aim to guide policy formulation and institutional reforms that enhance trainer competence and strengthen the overall quality of Uganda's TVET system.

1.2 Research Objective

To examine the strategies used in identifying the training needs of TVET Master trainers in the Instructor Training Institution in Uganda.

1.3 Research Hypothesis

H01: The strategies used to identify training needs in instructor training institutions significantly influence the professional competences of TVET trainers of trainers in Uganda.



II. LITERATURE REVIEW

2.1 Theoretical Framework

This study was grounded in the Experiential Learning Theory (ELT).

2.1.1 Experiential Learning Theory (ELT).

The theory was developed by David Kolb in 1984, building on earlier works by educational theorists such as John Dewey, Kurt Lewin, and Jean Piaget, who emphasized learning as an active, socially grounded, and iterative process (Kolb & Kolb, 2009). ELT assumes that effective learning occurs when individuals engage in a four-stage cyclical process: Concrete Experience, where the learner actively participates in a new task or situation, such as attending a CPD workshop, testing a new teaching method, or using a new digital tool. Reflective Observation, in which the learner looks back on the experience, assessing what happened, what worked, and what did not, often through journaling, peer discussions, or self-evaluation. Abstract Conceptualization, where insights from reflection are used to develop new understandings or revise existing frameworks; this might involve linking practice to theory or identifying principles that can guide future instruction. Active Experimentation, where the learner applies the latest ideas or strategies in practice, setting the stage for fresh experiences and further learning (Kolb & Kolb, 2009).

Experiential Learning Theory (ELT) has been widely applied across diverse fields including education, health sciences, engineering, and vocational studies, demonstrating its versatility in guiding both formal and informal learning processes. In teacher education, ELT has been used to design reflective practicum experiences where student-teachers alternate between classroom teaching, reflective journaling, and feedback sessions to refine their pedagogical skills (Nuraeni & Heryatun, 2021). In the health sciences, particularly nursing and medical training, ELT underpins simulation-based learning, where learners engage in hands-on clinical scenarios followed by debriefs and theoretical integration to strengthen clinical judgment and decision-making (Uppor et al., 2024). The theory has also been pivotal in engineering and technical training, where students work on design projects or field-based assignments, then reflect and reapply insights to improve their processes (Mekala & Geetha, 2022).

Despite its wide applicability, Experiential Learning Theory (ELT) has faced several criticisms. One major critique is its overly linear and cyclical structure, which some scholars argue does not reflect the unpredictable, non-sequential nature of real-world learning, especially in complex institutional setting (Kayes, 2002). Others argue that ELT overemphasizes the individual learner while neglecting the social, cultural and political context of learning, downplays the role of emotion and power dynamics essential to adult development, and lacks robust empirical tools for effectively measuring and applying its learning cycle stages (Bergsteiner et al., 2010). To address these limitations, the current study integrated ELT with a strong focus on contextual factors, particularly the institutional environment in which CPD occurs, and included qualitative insights that captured the lived experiences, constraints, and institutional cultures shaping trainer learning. By doing so, the study offered a more grounded application of ELT that reflected the realities of TVET master trainer development in Uganda.

Experiential Learning Theory, was chosen in for this study because the model is applicable in the context of TVET, where professional growth relies not only on content knowledge but on continuous application, adaptation, and innovation in real-world instructional environments. The theory's four-stage cycle closely aligns with the aims of CPD, which is the study's core independent variable. Each of the CPD strategies under investigation, such as current practices, training needs identification, and innovative approaches, directly engages trainers in experiential learning processes that ultimately shape their competencies in areas like instructional planning, participatory teaching methods, ICT use, and assessment. ELT was used in this study to interpret how these CPD interventions translate into measurable changes in trainer behaviour and skill application, particularly within the context of institutional environments that may either support or constrain the experiential cycle. By anchoring the conceptual framework in ELT, the study explored not just whether CPD influences trainer competencies, but how the process of learning through experience unfolds in practice and what institutional factors enhance or inhibit that learning.

2.2 Empirical Review

Identifying the training needs of TVET trainers is a critical first step in designing effective Continuous Professional Development (CPD) programmes, yet existing strategies remain uneven, fragmented, and context-specific across different countries. In Ghana, Yaqub et al. (2020) found that 85% of trainers pursued CPD driven by personal interests rather than structured institutional priorities, a reflection of the absence of a systematic Training Needs Analysis (TNA) framework. Compounding this issue, 83.4% of respondents reported a lack of formal evaluation mechanisms for CPD before, during, or after implementation, weakening the feedback loops necessary for refining trainer development interventions.

In North America, research was done to find out how well-equipped and eager TVET trainers were to integrate employability abilities into their programmes (Wan Ngah & Buniyamin, 2021). In the workplace or training institution,



trainers are essential to the execution of technical and vocational training programmes. It is anticipated that trainers would be essential in helping trainees acquire the employability skills they require. The results showed that both seasoned and inexperienced trainers who took part in the study showed high levels of drive and proficiency in incorporating employability skills. The findings indicated that greater growth and performance of her VET graduates in the workplace will come from a VET trainer's readiness to combine competencies and employability skills. Curriculum review enhances trainers' competency about VET student learning outcomes based on attitudes, knowledge, skills, and institutional support, which helps to increase the employability and productivity of VET graduates.

Barigye (2024), found that training needs assessment practices and human resource performance in public universities in Uganda. The findings suggested that questionnaires, interviews, and performance evaluation reviews were used to identify training needs, with the conclusion that a combination of performance assessments and employee self-assessments effectively identified gaps. The study did not examine the role of stakeholder discussions or external industry input in formulating training needs evaluations. Hasanah et al. (2025), training needs analysis for teachers: Implications for staff development at a South African University. Findings indicated surveys, interviews, and document analysis as essential strategies. Recommended were participatory approaches where staff themselves articulate their perceived needs.

Similarly, Ismail et al. (2018) document Malaysia's four-round Delphi method that established 98 trainer competences across personal traits, pedagogical skills, and technical innovation, later codified into national standards. These comprehensive systems are further strengthened by compulsory industry attachments and digital profiling via MOOCs and micro-credentials. However, despite these advancements, significant bottlenecks still exist which include: fragmented data systems across multiple ministries, limited capacity for workplace analysis among trainers, and resource constraints that stifle continuous in-service monitoring (Ismail et al., 2018; Wan Ngah & Buniyamin, 2021). These persistent structural inefficiencies underscore the need for integrated, continuous, and industry-validated TNAs, something that current systems, even in To address these gaps, the current study aimed to develop a context-specific, continuous TNA-CPD framework tailored for Uganda's Master trainers, incorporating hybrid and offline assessment tools, embedding industry-validated task analysis, and establishing a scalable ToT cascade model supported by regional peer-coaching networks to ensure widespread and sustainable capacity development.

III. METHODOLOGY

This study employed a convergent parallel mixed-methods design within a descriptive framework, which integrates quantitative and qualitative approaches to provide a comprehensive understanding of a research problem (Creswell & Plano Clark, 2018). This design enabled the systematic and simultaneous documentation of CPD practices, trainer competences, institutional strategies, and gaps. Quantitative data were collected via structured questionnaires, while qualitative insights were gathered through interviews and document analysis from TVET trainers, administrators, policymakers, and partners. The separate analysis and subsequent triangulation of both data types ensured a holistic and evidence-based understanding of Uganda's CPD landscape.

The study engaged a total of 189 participants strategically selected from Uganda's TVET sector, comprising 74 TVET lecturers and technicians, 18 institutional managers and principals, 44 officials from the Ministry of Education and Sports, 4 development partner managers, 27 trainees, and 5 industry representatives. This diverse sample ensured insights from all levels involved in the planning, delivery, and reception of Continuing Professional Development (CPD). The distribution of participants across these key stakeholder groups is summarized in the table below.

Table 1
Study Population, Sample Size, and Sample Techniques

Category	Population	Sample size	Sampling Techniques
MoES Officials	4	4	Purposive
Principals	3	3	Purposive
EDPs	4	4	Purposive
Industrial Partners	5	5	Purposive
Institutional Management Staff	15	15	Purposive
HTVET Staff	40	40	Purposive
TVET Trainees	27	27	Purposive
TVET Master Trainers	91	74	Stratified Random
Total	189	172	

Both probability and non-probability techniques were used. Purposive sampling targeted key informants such as Ministry of Education and Sports officials, principals, and development partners due to their expertise in CPD and



policy implementation (Palinkas et al., 2015). Stratified random sampling was applied to trainers, dividing them into strata by institution and role (lecturers and technicians) to ensure representativeness across Jinja Vocational Training Institute, National Instructor's College-Abilonino, and Nakawa Vocational Training College (Etikan et al., 2016).

Four research instruments were employed: structured questionnaires, interview guides, focus group discussion guides, and document review guides (Creswell, 2014; Bowen, 2009). The structured questionnaires captured quantitative data on CPD practices and trainer competences using Likert-scale items, while the qualitative guides elicited in-depth insights from officials, partners, staff, and trainees. To ensure validity, all instruments underwent rigorous expert review by academic supervisors, ethics committees, and a Ministry of Education and Sports (MoES) specialist. The questionnaire's construct validity was confirmed through a pilot study and Exploratory Factor Analysis, which showed all items had factor loadings above 0.5. Furthermore, the instrument demonstrated strong reliability, with all categories achieving Cronbach's Alpha values above 0.70, indicating high internal consistency. These tools are available as supplementary material.

Quantitative data from questionnaires were entered in Kobo Collect, cleaned in Excel, and analyzed in SPSS v27. Descriptive statistics (frequencies, means, percentages) summarized trainer responses, while inferential techniques such as correlations and regression tested relationships between CPD strategies and competences. The mediating role of instructor training institutions was examined using the PROCESS macro (Ott & Longnecker, 2010). Qualitative data from interviews, FGDs, and documents were transcribed, coded thematically in NVivo v15, and analyzed using both inductive and deductive approaches to capture patterns and contextual insights (Flick, 2013).

The research process was initiated with approval from the University of Eldoret's Postgraduate Research Committee. Ethical clearance was then obtained from the Gulu University Research Ethics Committee (GUREC) and a research permit was secured from the Uganda National Council for Science and Technology (UNCST). Official permission was granted by the Permanent Secretary of the Ministry of Education and Sports (MoES) to access the study sites. All participants provided informed consent, and data were anonymized and handled with strict confidentiality to ensure ethical integrity. The study observed ethical principles of informed consent, confidentiality, beneficence, and integrity (Kessio & Chang'ach, 2020).

IV. FINDINGS & DISCUSSION

4.1 Findings

The results of the descriptive statistics are presented in the table 2

Table 2

Descriptive Statistics on the Strategies used in Identifying the Training needs of TVET Master Trainer

No.	Statement	SD (%)	D (%)	NS (%)	A (%)	SA (%)	Mean	σ
1	My institution uses performance appraisals to identify trainers' CPD needs.	2 (2.7)	12 (16.2)	4 (5.4)	44 (59.5)	12 (16.2)	3.70	1.017
2	Feedback from students is used to determine areas where trainers require development.	2 (2.7)	19 (25.7)	18 (24.3)	25 (33.8)	10 (13.5)	3.30	1.082
3	Industry stakeholders are consulted to align trainer skills with labour market demands.	4 (5.4)	13 (17.6)	10 (13.5)	37 (50.0)	10 (13.5)	3.49	1.101
4	Trainers are involved in identifying their own professional development needs.	6 (8.1)	13 (17.6)	8 (10.8)	38 (51.4)	9 (12.2)	3.42	1.159
5	Regular skills assessments are conducted to identify gaps among trainers.	10 (13.5)	30 (40.5)	14 (18.9)	18 (24.3)	2 (2.7)	2.62	1.082
6	CPD plans are customized based on individual trainer needs.	4 (5.4)	19 (25.7)	10 (13.5)	37 (50.0)	4 (5.4)	3.24	1.070
7	Emerging technologies and industry changes are considered when identifying training needs.	6 (8.1)	10 (13.5)	8 (10.8)	44 (59.5)	6 (8.1)	3.46	1.088
8	There is a formal process for trainers to request specific CPD training.	6 (8.1)	21 (28.4)	12 (16.2)	29 (39.2)	6 (8.1)	3.11	1.154
9	The institution monitors and evaluates the effectiveness of training needs identification strategies.	8 (10.8)	10 (13.5)	15 (20.3)	30 (40.5)	11 (14.9)	3.35	1.210

CPD identification practices appear structured through appraisals but less systematically informed by student and industry input. The findings showed that institutions largely rely on performance appraisals to identify trainers' CPD needs, with 75.7% of respondents strongly agreeing, though some variation in experiences was noted. Student



feedback played a less consistent role, as responses were split between agreement (47.6%), disagreement (28.4%), and neutrality (24.3%), reflecting only partial integration into CPD planning. Engagement with industry stakeholders was moderately strong, with 63.5% acknowledging collaboration, though a significant share (36.5%) disagreed, highlighting inconsistency in aligning training with labor market needs.

The qualitative findings revealed that annual performance appraisals, training needs assessments, and support supervision are the main tools used to identify CPD needs, often supplemented by observations and departmental input. While these mechanisms provide a structured way to capture individual and institutional gaps, their implementation is inconsistent due to financial constraints, lack of mandatory requirements, and donor dependence, which sometimes results in generic rather than tailored CPD responses. Student feedback was found to be largely absent from formal CPD planning, though some institutions recognized its potential and used it informally. Industry involvement in CPD planning is gradually improving under the TVET Act 2025 and related reforms, with tools such as tracer studies, TNAs, and employer feedback being applied, though inconsistently. As one key informant explained,

"We primarily rely on appraisal forms to identify gaps. We also conduct training needs assessments by asking lecturers what areas they are strong in and where they need improvement" **KI8, (2025).**

Another noted the gap in student input, stating,

"Unfortunately, student feedback is not systematically incorporated into the design of CPD programs. Typically, the CPDs facilitated by development partners are driven by donor priorities, while government-led initiatives are informed by annual performance appraisals and training needs assessments" **FGD3, (2025).**

The results indicated mixed practices in how CPD needs are identified and addressed. Trainer involvement and some degree of customization exist, but the lack of regular skills assessments undermines accurate and targeted CPD planning. While 63.6% of trainers reported being involved in identifying their own development needs, a notable 36.4% felt excluded, showing partial participation. Regular skills assessments were largely absent, with 72.9% strongly disagreeing that such assessments are conducted, limiting systematic identification of evolving gaps. Customization of CPD plans also appeared inconsistent, as 55.4% agreed plans are tailored to individual needs, while 44.6% disagreed.

The qualitative findings showed that while trainers are somewhat involved in identifying their professional development needs through appraisals, TNAs, and informal consultations, this participation is inconsistent and often overshadowed by donor-driven or top-down CPD structures. Performance appraisals remain the main tool for assessing competencies, but they are often general and lack structured systems for evaluating specific skills. Formal skills audits are largely absent, limiting accurate identification of competency gaps. Moreover, CPD plans are still mostly generic and organized at departmental or institutional levels, with limited customization to individual trainer needs due to resource and structural constraints. As one key informant noted,

"Trainers usually have limited say in identifying their own needs. Donor funding often comes with predefined conditions, and most of the time, VVOB decides what needs to be done or taught within the CPD programs" **KI4, (2025).**

Another emphasized the lack of personalization, stating,

"We have not addressed individual needs directly; CPD has mostly been organized at the departmental level. So, there is definitely a gap when it comes to personalizing CPD for individual trainers" **KI8, (2025).**

While some progress exists in aligning CPD with technological shifts and in monitoring efforts, the lack of standardized request processes and uneven implementation undermines comprehensive CPD planning. The findings showed that institutions moderately consider emerging technologies and industry changes in CPD planning, with 67.6% in agreement though inconsistencies remain. Formal processes for trainers to request specific CPD training were limited, as responses were split between agreement (47.3%) and disagreement (52.7%), pointing to uneven access to structured mechanisms. Similarly, monitoring and evaluation of training needs identification strategies were acknowledged by 55.4% of respondents, while 44.6% disagreed, suggesting that such practices are applied inconsistently.

The qualitative findings showed growing efforts to involve industry stakeholders in CPD planning, reflecting a policy shift toward collaboration and labour market alignment, though engagement remains irregular and sometimes limited in scope. Technological advancements were recognized as essential drivers of CPD, with ICT integration seen as a requirement for global competitiveness. While formal processes for trainers to request CPD exist, low awareness has limited their use, pointing to gaps in sensitization and communication. Monitoring of CPD largely relied on routine supervision and activity tracking rather than structured frameworks, leaving effectiveness assessments weak and inconsistent. As one key informant explained,

"Previously, the ministry identified emerging skill gaps on its own. However, moving forward, reforms have mandated that 66% of the TVET Governing Councils and Board of Governors consist of representatives from the world of work, meaning we cannot make decisions without involving industry stakeholders" **FGD2, (2025).**

Another highlighted institutional gaps in evaluation, stating,



“There is no clear mechanism for tracking the effectiveness of the training needs identification process”
KI3, (2025).

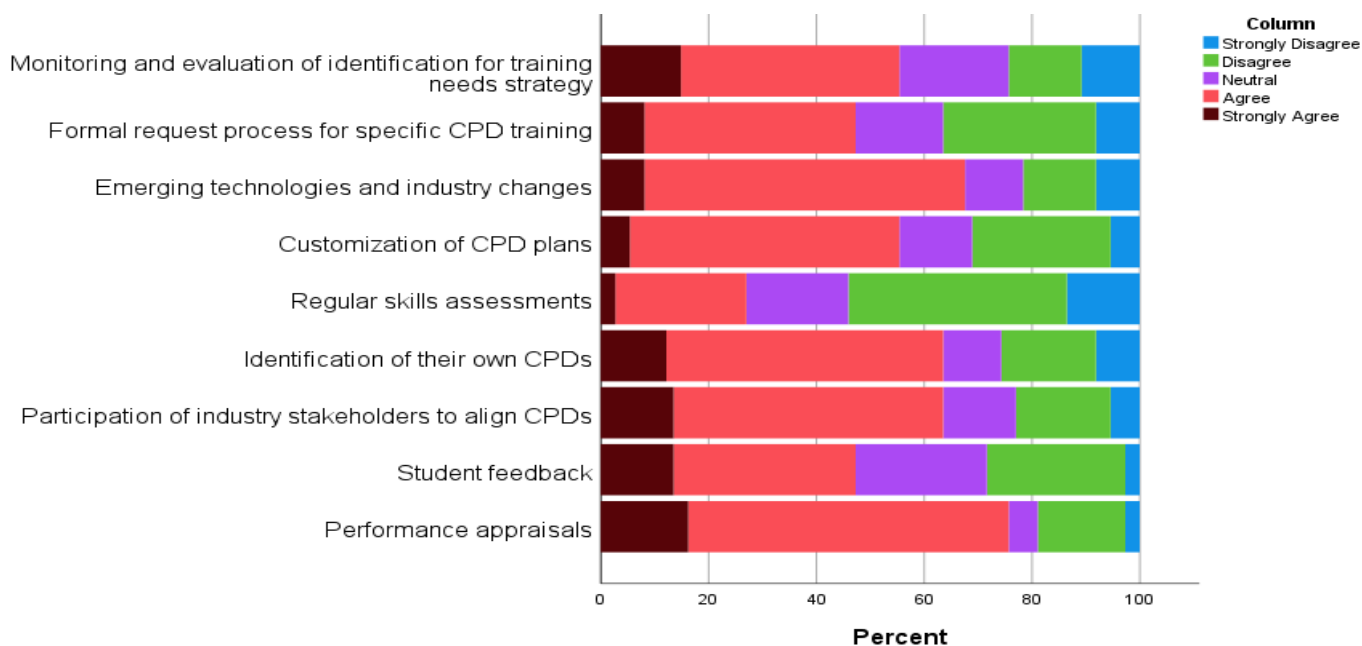


Figure 1
Strategies used in Identifying The Training Needs of TVET Master Trainers

Table 3
Correlation Analysis between Strategies for CPD Training needs Identification and TVET Trainer Competences

Correlations			
		Strategies for Training needs Identification	TVET Trainer Competences
Strategies for Training needs Identification	Pearson Correlation	1	.480**
	Sig. (2-tailed)		.000
	N	74	74
TVET Trainer Competences	Pearson Correlation	.480**	1
	Sig. (2-tailed)	.000	
	N	74	74

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data (2025)

The correlation analysis showed a moderate and statistically significant positive relationship between the strategies used to identify training needs and the professional competences of TVET master trainers in Uganda. The Pearson correlation coefficient ($r = 0.480$) suggested that as institutions improve their strategies for identifying trainers’ development needs the competences of trainers also tend to improve. This relationship was significant at the 0.01 level (2-tailed), with a p-value of 0.000, well below the 0.05 threshold. This finding supported the hypothesis that effective training needs identification contributes meaningfully to the development of trainers’ competences. It implied that systematic and regular assessment of trainers’ skill gaps could be a key lever for enhancing the overall quality of TVET instruction in Uganda.



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Regression analysis between Strategies for CPD Training needs Identification and TVET Trainer Competences

Model Summary and Analysis of Variance					
R	R Square	Adjusted R Square	Std. Error	F Statistic	Sig.
.480 ^a	.230	.220	.41451	21.567	.000 ^b
Coefficients					
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	3.123	.226		13.828	.000
Strategies for Training needs Identification	.311	.067	.480	4.644	.000

a. Dependent Variable: TVET Trainer Competences

Source: Primary data (2025)

The regression analysis results indicated a statistically significant positive relationship between the strategies used to identify training needs and the professional competences of TVET master trainers in Uganda. The R square value of 0.230 revealed that training needs identification strategies explain 23% of the variance in trainers' competences, which is a meaningful contribution in the context of professional development. The model's F-statistic of 21.567 with a p-value of 0.000 confirms that the regression model was statistically significant and that, strategies for training needs identification are reliable predictors of trainers' competences.

The unstandardized coefficient ($B = 0.311$) suggested that for every one-unit increase in the effectiveness or quality of training needs identification, there was a corresponding 0.311-unit increase in the professional competences of trainers. The standardized Beta coefficient ($\beta = 0.480$) showed a moderate to strong effect size, highlighted that the way training needs are identified plays an important role in enhancing trainer competences. The t-value of 4.644 and p-value of 0.000 further confirm the statistical significance of this relationship.

Based on these findings, we accept the hypothesis that there was a significant relationship between strategies for identifying training needs and the professional competences of TVET master trainers in Uganda. However, since the R Square is 0.230, it also implies that other factors beyond training needs identification, such as CPD program quality, institutional support, and resource availability, likely influence trainers' competencies. This underscores the need for a comprehensive approach to professional development that incorporates multiple contributing elements.

4.2 Discussion

The findings indicate that strategies for identifying training needs among TVET master trainers in Uganda, that is, performance appraisals, student feedback, and industry consultation; are applied inconsistently, limiting their effectiveness. Performance appraisals and skills assessments provide a structured entry point, but often remain superficial, reflecting patterns seen in Ghana and South Africa where appraisals are compliance-driven with minimal follow-up (Yaqub et al., 2020; Paterson et al., 2024a). Student feedback is collected informally and rarely informs structured CPD, mirroring Rwanda's experience where learner input was disconnected from broader professional development reforms (Kim et al., 2019). Labour market alignment shows promise through tracer studies and employer consultations, but efforts are fragmented and project-based, similar to Bhutan's weak engagement frameworks (Royal Civil Service Commission [RCSC], 2019), while Malaysia demonstrates the benefits of systematic industry partnerships and data-driven planning (Ismail et al., 2018). Collectively, these findings suggest that while multiple strategies exist, their impact is constrained by limited institutionalization, inadequate resources, and reliance on ad hoc or donor-driven initiatives. Strengthening formal, continuous, and integrated approaches could enhance CPD relevance, responsiveness, and contribution to TVET master trainers' professional competence.

The findings reveal that trainer involvement, skills assessments, and individualized CPD in Uganda remain limited and largely superficial, reducing the relevance and impact of professional development. Trainer input is mostly confined to appraisal processes, with little participatory planning, reflecting patterns in South Africa and Kenya where donor and policy priorities often overshadow professional voices (Paterson et al., 2024a; Komen & Ong'injo, 2024). Skills assessments are irregular and focus on broad performance indicators rather than competency-based evaluations, mirroring gaps observed in Namibia where outdated qualifications and weak assessment systems constrained CPD relevance (Aloovi & Sisinyize, 2024). Individualized CPD is aspirational but rarely realized, as programs are typically designed at the institutional level, echoing Ghanaian experiences where CPD is shaped by convenience or donor influence (Yaqub et al., 2020). Comparatively, Malaysia demonstrates the potential of digital systems to enable personalized training pathways (Wan Ngah & Buniyamin, 2021). These findings suggest that moving toward



participatory, competency-based, and individualized CPD, supported by institutional commitment and appropriate systems, is critical for enhancing the professional competence and classroom effectiveness of TVET master trainers.

The findings indicate that technology adoption, formal CPD request mechanisms, and monitoring and evaluation in Uganda remain uneven, limiting the effectiveness of professional development for TVET master trainers. Some institutions have integrated ICT tools and industry partnerships, but many trainers report limited exposure, reflecting Rwanda's low ratings in digital pedagogy (Kim et al., 2019) and the slow uptake of MOOCs and micro-credentials globally where infrastructure and policy are weak (Ismail et al., 2018). Formal channels for requesting CPD exist, but awareness and access are uneven, resulting in reactive, rather than demand-driven, participation, consistent with observations by Paterson et al. (2024b). Monitoring and evaluation practices are similarly superficial, often focusing on activity tracking rather than outcomes, a challenge also noted in Bhutan and other African contexts (RCSC, 2019; Kim et al., 2019). These findings suggest that strengthening ICT integration, institutionalizing transparent request systems, and developing outcome-focused M&E frameworks are essential to make CPD responsive, inclusive, and evidence-based for TVET master trainers.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusions

Performance appraisals and training needs assessments are commonly used to guide CPD planning, yet they tend to produce broad, generic programs rather than personalized development paths. Institutions often focus on filling departmental or organizational gaps, which means individual trainers' unique needs can be overlooked. This limits the impact of professional growth efforts. Moving forward, CPD would benefit greatly from more tailored approaches; ones grounded in structured self-assessments and clear follow-up mechanisms to better target specific skills and competencies.

Student feedback, despite its potential to directly inform and improve teaching quality, is underused in shaping CPD initiatives. The absence of formalized systems to gather, analyse, and respond to learner evaluations represents a missed opportunity. Establishing reliable feedback loops would help ensure that trainer development is more closely aligned with the actual needs and experiences of students, making CPD more relevant and impactful.

There is greater industry collaboration in the TVET sector, particularly following legislative reforms like the TVET Act 2025, which encourage private sector involvement. However, these partnerships remain largely informal, sporadic, or linked to short-term projects. While tracer studies and employer consultations offer useful insights, the absence of continuous, institutionalized engagement means CPD content often lags evolving labour market needs. Strengthening frameworks for sustained collaboration with industry is essential to keep CPD practical, relevant, and responsive.

Trainer involvement in CPD planning was partial at best. Although trainers participate through appraisals and occasional informal consultations, their voices are frequently overshadowed by top-down decisions and donor-driven priorities. This mismatch can result in training programs that do not fully address the realities trainers face daily. Empowering trainers to actively co-design their CPD paths would increase ownership, boost motivation, and better align professional development with practical challenges. Skills assessments to identify trainer gaps are rarely systematic or competency based. General performance appraisals often fail to capture the nuanced competencies needed, which undermines the ability to deliver focused and effective CPD. Implementing standardized, competency-focused skills audits would provide a clearer, data-driven picture of development needs and enable more precise interventions.

Personalized CPD is increasingly recognized as valuable, but institutional and resource limitations mean most programs remain focused at the departmental or institutional level. This disconnect between identified needs and actual training delivery highlights the need for dedicated policies and budgets that support individualized development plans, ensuring trainers' growth is not overshadowed by broader organizational priorities. Emerging technologies and industry trends are increasingly influencing CPD design, but integration remains uneven across institutions. Partnerships and sector skills councils signal positive movement, yet inconsistent engagement and limited resources slow down full adoption. Prioritizing ICT integration and regularly updating CPD content based on industry developments will be crucial to keeping training relevant in a rapidly changing environment.

The mechanisms for trainers to request specific CPD opportunities do exist, but they are often underutilized due to limited awareness and weak communication. Sensitizing staff through inductions and ongoing policy reminders would help ensure these request systems are accessible and actively used, making CPD more responsive to trainers' actual needs. Monitoring and evaluation around CPD needs identification are weak and largely informal, focusing on outputs rather than outcomes. Without structured tools to assess effectiveness, there is little feedback to guide improvement. Developing robust, outcome-oriented evaluation frameworks will close these gaps, supporting continuous refinement and better alignment of CPD programs with trainers' evolving development requirements.



5.2 Recommendations

Education Development Partners and MoES should integrate structured skills assessments and industry-aligned tools into TVET training needs analysis. Using formal diagnostic assessments and involving industry representatives ensure targeted CPD that directly addresses real-world skill gaps. TVET Council, Uganda Vocational Technical Assessment Board (UVTAB), and TVET Trainers' Training Research and Innovation (TTTRI) department should institutionalize student feedback mechanisms and formal performance appraisals to inform CPD planning for trainers. Regular, structured feedback from learners and systematic performance reviews should guide individualized CPD initiatives.

Institutions should develop individualized CPD plans based on annual performance reviews, classroom observations, and self-assessment tools. The ministry of education and sports' human resource department, working with departmental heads, should guide trainers in co-designing development roadmaps. Institutions should adopt clear monitoring and evaluation frameworks to track CPD effectiveness. Indicators must capture outcomes such as changes in teaching practices and learner performance, with results shared transparently.

Sustainable funding for CPD should be prioritized in institutional and government budgets, with additional support mobilized from private sector partnerships and donors. Resources should cover training infrastructure, facilitator support, and content development. Structured student feedback systems should be institutionalized through anonymous course evaluations, focus group discussions, and feedback analysis. Departments should use these insights to adjust training priorities and address gaps in teaching practices. TVET master trainers should actively participate in identifying their own training needs and work collaboratively with departmental heads to determine priority areas for capacity development. Agreed training needs should then be addressed through internal programs or by engaging external experts from the world of work to ensure that identified skill gaps are effectively bridged.

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