

# International Journal of Vocational Education and Training

Volume 31  
Number 1  
Summer 2026

Chibueze Tobias Orji  
Editor

Official Publication of the  
International Vocational Education and Training Association  
[www.iveta.global](http://www.iveta.global)



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# International Journal of Vocational Education and Training

Volume 31, Number 1

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**International Journal of Vocational  
Education and Training**

**Volume 31, Number 1**

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Articles do not necessarily reflect the position or policy of the International Vocational Education and Training Association or the Journal's editorial staff, and no endorsement by the association or editorial staff should be inferred.

## Contributors

**Abia Mutumbwa** currently works at Zimbabwe Open University within the Department of Teacher Development.

**Dr. Tawanda Chinengundu** currently works at University of Pretoria, South Africa within the Department of Science, Mathematics and Technology Education.

**Donna K. Crouch, Ed.D** is currently an Assistant Professor and Director of Career and Technical Education within the College of Education and Human Services at Murray State University.

**Dr. John S. Gaal** is an Adjunct Professor in the School of Business and Technology at Webster University in St. Louis, Missouri, USA. He is currently entering his 30th year in higher education, bringing decades of experience in workforce development, labor relations, and technical education.

**Rev. Sister Chinaemerem Clarice Orji** is a PhD Research Student in the Department of Home Economics, College of Applied Food Science and Tourism, Michael Okpara University of Agriculture, Umudike. She specialises in Family and Human Development. A Catholic Nun and current High School Principal for over two decades, she has mentored countless adolescents and counseled numerous couples.

**Dr. Uju Bridget Ejinkeonye** is an associate Professor in the Department of Home Economics, College of Applied Food Sciences and Tourism, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria. Her research interests are in Skill development in Home Economics, Curriculum Development in Vocational Home Economics, Nutrition, Caring for elderly, children and youth, Entrepreneurship Education, Youth and Women Empowerment.

**Dr. Anthonia Omanebu Obeta** is an Associate Professor in the Department of Home Economics, Michael Okpara University of Agriculture, Umudike – Umuahia, Abia State. She holds a doctor of Philosopher degree in Home Economics with specialization in Clothing and Textiles.

**Dr. Ngozi Blessing Mariagoretti Asadu** is a Senior Lecturer in the Department of Sociology and Anthropology, University of Nigeria, Nsukka. She specialises in Women Studies and Development Studies, with a strong focus on gender, social change, and community development. A committed teacher and researcher, she has published extensively in reputable international journals.

**Nduvazi Mabunda** currently work in the Department of Technology and Vocational Education, Tshwane University of Technology, Soshanguve North Campus, South Africa

**Moses Makgato** currently work in the Department of Technology and Vocational Education, Tshwane University of Technology, Soshanguve North Campus, South Africa

**Jerald Hondonga** currently work in the Department of Technology and Vocational Education, Tshwane University of Technology, Soshanguve North Campus, South Africa

## Message From the Editor

It is my pleasure to welcome readers to Volume 31, Number 1 of the International Journal of Vocational Education and Training. This issue continues the journal's commitment to publishing rigorous and relevant research that advances vocational education and training across diverse national, institutional, occupational, and community contexts.

The contributions gathered here share a common reminder: the effectiveness of vocational education cannot be judged by enrolment, completion rates, certification, or examination performance alone. A credible system must also ask whether learners acquire the competencies that contemporary workplaces demand, whether assessment supports meaningful learning, whether training environments are safe and responsive, and whether institutions attend to the social and emotional conditions that shape participation and performance.

The opening article, by Abia Mutumbwa and Tawanda Chinengundu, questions conventional approaches to measuring internal efficiency in TVET construction engineering programmes. Drawing on evidence from Zimbabwe, the authors introduce the concept of qualitative efficiency and expose the limits of relying on graduation and completion indicators alone. Their central concern is whether graduates have in fact acquired the competencies their curricula specify, particularly emerging digital and technological skills.

Donna K. Crouch extends this discussion of quality toward safety and learner wellbeing. Her proposed Trauma-Responsive Technical Education Framework recognises that workshops, laboratories, barns, construction spaces, and clinical settings place demands on learners that differ markedly from those of the conventional classroom. The article offers a valuable foundation for strengthening teacher preparation, institutional safety systems, and inclusive vocational pedagogy.

John S. Gaal turns attention to workplace wellbeing and the need for structured postvention support within the United States construction industry. By highlighting the role of trained peer supporters and coordinated organisational responses, the article broadens the conversation beyond technical preparation to include the systems of care that sustain workers, colleagues, families, and workplace communities through difficult circumstances.

The study by Chinaemerem Clarice Orji, Uju Bridget Ejinkeonye, Anothonia Omanebu Obeta, and Ngozi Blessing Mariagoretti Asadu examines caregiving, elderly wellbeing, and community support systems in Southeast Nigeria. It demonstrates the continuing importance of families, faith-based organisations, and community associations, while also revealing the limits of formal institutional support. The findings carry clear implications for vocational preparation in home economics, community health, caregiving, social care, and related service occupations.

The closing article, by Nduvazi Mabunda, Moses Makgato, and Jerald Hondonga, investigates the assessment strategies that lecturers use in Report 191 engineering vocational subjects at South African TVET colleges. The study underscores the value of sound formative and summative assessment, clear policy guidance, effective moderation, and continuing professional development. It reminds us that assessment should do more than determine whether students pass or fail; it should provide credible evidence of learning and occupational competence.

Taken together, the articles present vocational education and training as a multidimensional field in which competence, assessment, safety, wellbeing, institutional responsibility, and community participation are closely connected. They invite us to look beyond narrow measures of performance and to build systems that are technically relevant, socially responsive, and attentive to human dignity.

I thank the authors for entrusting their research to the journal, and the reviewers for the time, expertise, and constructive guidance they gave to the publication process. I also acknowledge the Co-Editor, Style Editor, Editorial Board, IVETA leadership, and all those whose commitment made this issue possible.

I trust that these articles will stimulate further research, inform policy and practice, and strengthen international dialogue on the future of vocational education and training.

Dr Chibueze Tobias Orji

Editor

International Journal of Vocational Education and Training

# **A Qualitative Efficiency Approach to Internal Efficiency in TVET Construction Engineering Programmes**

**Abia Mutumbwa**

**&**

**Tawanda Chinengundu**

## **Abstract**

Research across Sub-Saharan Africa indicates a gap between certification and actual graduate competencies. However, internal efficiency in Technical and Vocational Education and Training (TVET) is still measured using traditional metrics such as graduation rates and coefficients of internal efficiency, which focus exclusively on the quantitative aspects of students' throughput and do not account for competency attainment. This shows a gap in the measurement of internal efficiency in TVET. The purpose of this study was therefore to address this gap by introducing and empirically testing the concept of Qualitative Efficiency as a complementary measure of internal efficiency in TVET. The study used a convergent parallel mixed-methods design to investigate internal efficiency in Carpentry and Joinery, Wood Technology, and Building Technology programmes in three public TVET institutions in Harare, Zimbabwe. Quantitative data were collected from 161 students and 22 lecturers and integrated with qualitative data from interviews with three Heads of Department and seven Lecturers-in-Charge. Results revealed a paradox where all programmes exhibited high quantitative internal efficiency, yet students displayed deficits in modern competencies such as AutoCAD and CNC operation, which were located in the Critical Failure quadrant of the proposed Strategic Competency–Efficiency Matrix, while traditional craft skills remained in the Efficiency Zone. The study concluded that when quantitative metrics are used alone, they provide a misleading picture of TVET internal efficiency. The study therefore proposed integrating competency attainment auditing as a Fourth I (Indicate) within the UNESCO-UNEVOC BILT framework.

**Keywords:** Qualitative Efficiency, TVET, Internal Efficiency, Strategic Competency-Efficiency Matrix.

## Introduction

A challenge exists in the global TVET systems regarding their ability to prepare graduates for employment in the labour market. This challenge pertains to how the internal efficiency of these systems is measured. Historically, assessing internal efficiency through the ratios of inputs to outputs is frequently performed with quantitative metrics such as graduation rates, dropout rates, repetition rates, and coefficients (Chiedozié & Chidi, 2021; Okinyi et al., 2021). The UNESCO Institute of Statistics (UIS, 2017) has also identified standard ways of evaluating educational systems by using a combination of enrolled students and graduating students as outputs. Despite the dominance of quantitative metrics as measures of internal efficiency, findings from some studies suggest that these traditional metrics may not adequately measure all the dimensions of internal efficiency. For instance, studies conducted in some Sub-Saharan African Countries indicated gaps between graduation rates and actual graduate competencies. Studies conducted in Tanzania (Mgaya, 2022), and Rwanda (Rwamu, 2019) have shown that graduate competencies are sometimes low despite the students progressing through programmes and obtaining qualifications. In Zimbabwe, Maireva et al. (2021) also observed that TVET graduates, who specialised in Accounting, lacked adequate accounting skills. These situations raise compelling questions about the relationship between certification and the actual capabilities students attain. The disagreement between student certification and the type of competencies attained by such students suggests limitations in how efficiency is measured in TVET. The BILT programme initiated by UNESCO-UNEVOC attempted to address this problem by developing a three-part framework involving identifying new competencies demanded by changing labour markets, integrating these competencies into curricula and training programmes, and implementing training that develops these competencies (UNESCO-UNEVOC, 2023). Nonetheless, the framework appears to have omitted a method of verifying whether competencies have actually been attained. This study addressed this gap by introducing the concept of Qualitative Efficiency (QE), defined as the ratio of intended competencies specified in curricula to actual competencies demonstrated by graduates through systematic assessment. This proportional measurement approach is derived from results-based management practices, which require that performance indicators include a numerator and denominator expressed as a percentage of a target (Global Affairs Canada, 2015).

The concept of internal efficiency examines how inputs are transformed into outputs (Bwalya, 2022; Hashakimana, 2022). In the context of TVET, inputs include students, lecturers, facilities, equipment, and time. On the other hand, outputs include graduates, pass rates and competencies attained by graduates (Adu & Ajogbeje, 2022; Ngari, 2020). A metric that summarises how efficiently students' progress through the education cycle without wastage from dropouts and repetitions is the coefficient of internal efficiency. This is calculated as the ratio of ideal student-years to actual student-years required for a cohort to complete a programme (Egwunatum et al., 2021b; Hashakimana, 2022). These metrics have been used extensively in research across Africa. In Kenya, Okinyi et al. (2021) obtained a coefficient of internal efficiency of 24.3 per cent in public vocational training centres. Likewise, Makinde and Adu (2022) reported 33.75 per cent in Colleges of Education in Nigeria. In Rwanda, Dufitumukiza also (2020) found coefficients of 63.2 per cent and 59.7 per cent in public day schools. These studies showed that internal efficiency problems potentially exist in TVET systems across the continent.

Similar to the literature on internal efficiency, research on competency-based education and training has documented the competencies that TVET graduates should possess. Competencies include the knowledge, skills, attitudes, and values acquired during training that enable individuals to perform expected tasks in their field (Omar et al., 2020). In Zimbabwe, HEXCO syllabi for construction engineering programmes specify detailed competency outcomes. In Wood Technology and Carpentry and Joinery, some of the stipulated competencies include roof construction, shuttering, joinery, woodworking machine operation, including CNC, while in Building Technology, these include setting out, concrete work, brickwork, and building drawing, among others (MHTESTD, 2023a, 2023b, 2023c). Yet despite the stipulations of these competencies, literature on their attainment is limited. Most studies conducted to measure efficiency, rarely include competency data, while those studies conducted to determine students' competencies rarely engage with efficiency metrics. This disconnect means there is no established framework for measuring the qualitative dimension of efficiency regarding how effectively programmes transform students into graduates with the full range of intended competencies.

Relying only on quantitative metrics to measure internal efficiency in TVET may result in an inaccurate picture of the system's performance. Such an inaccurate picture will result when high graduation rates occur, yet the graduates could leave the system without the skills and competencies that their qualifications certify. On the other hand, a programme may have low efficiency caused by high dropout rates, but still produce exceptionally skilled and competent graduates. Consequently, without establishing a framework that jointly considers both dimensions in place, it may be difficult to determine if TVET systems are successfully training students without issues like dropouts and repetition while also effectively equipping them with the competencies required by the labour market. This dual perspective is essential for ensuring that investments in TVET translate into meaningful human capital development.

This paper, therefore, sought to address this gap by introducing the concept of Qualitative Efficiency. The study had four research questions. First, what is the quantitative efficiency profile of Construction Engineering programmes in Zimbabwean TVET as measured through traditional metrics? Second, what is the qualitative efficiency profile of these programmes as measured through graduate competency attainment across stipulated skill areas? Thirdly, what explains the relationship or disjuncture between quantitative and qualitative efficiency in these programmes? Fourth, what are the implications of these findings for TVET measurement frameworks internationally?

## **Theoretical and Conceptual Framework**

This study was grounded in the Systems Theory. The Systems Theory views organisations as integrated systems of interconnected components that include inputs, processes, outputs, and feedback loops (Abdullahi, 2022; Ngari, 2020). In the case of TVET, inputs comprise teaching and learning materials, lecturers and students. Processes are the training conducted, including the instructional processes, such as the assessments. Outputs are the outcomes of the training processes, including the number of graduates, pass rates and competencies attained. This theory enables systematic analysis of how resources, including students, are transformed through teaching and learning activities into graduates with specific competencies (Ottan, 2018). The innovation in this study is to extend the systems framework by distinguishing between two dimensions of the

output component. The first dimension includes quantitative output measured as the number of graduates produced through graduation rates and pass rates, while the second dimension includes qualitative output measured as the competency profile of graduates through systematic assessment against curriculum standards.

Qualitative Efficiency is defined as the ratio between intended competencies specified in official curricula and syllabi and actual competencies demonstrated by graduates through systematic assessment. Following results based management practices (Global Affairs Canada, 2015), this ratio is expressed as a percentage:

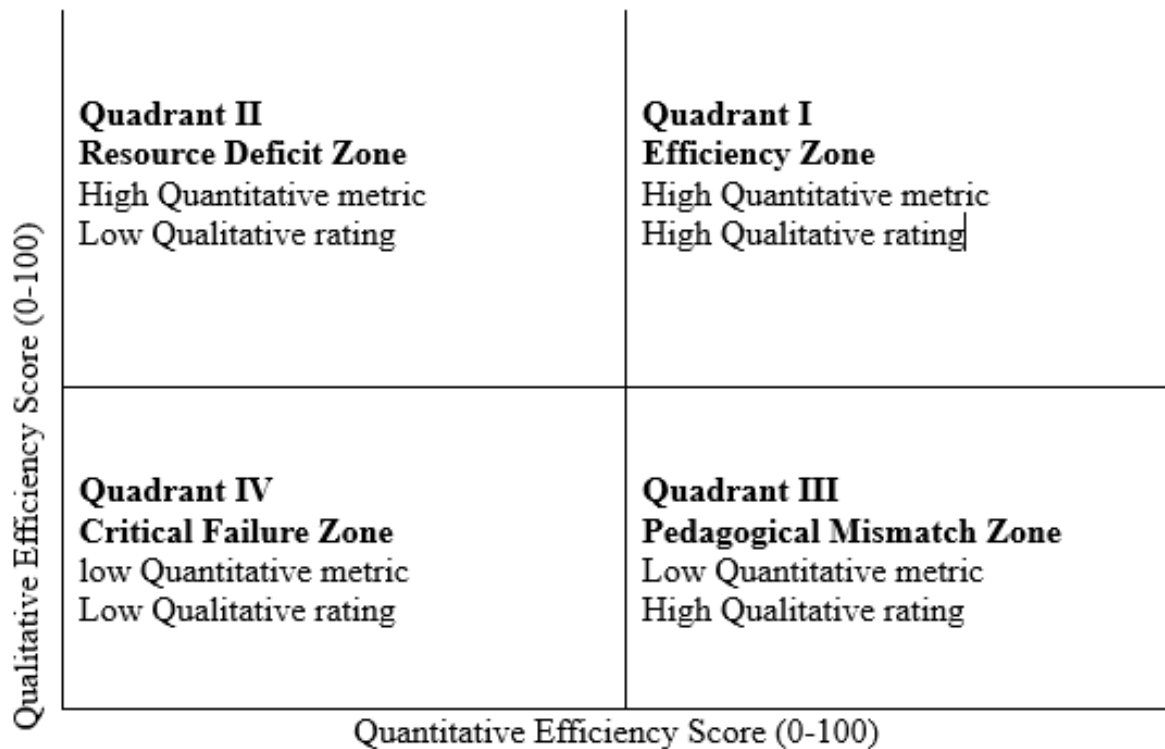
$$QE = (Ca/Ci) \times 100\%$$

Where:

Ca = Actual competency level achieved by graduates (measured on a standardised scale)

Ci = Intended competency level specified in curriculum (established as the benchmark standard)

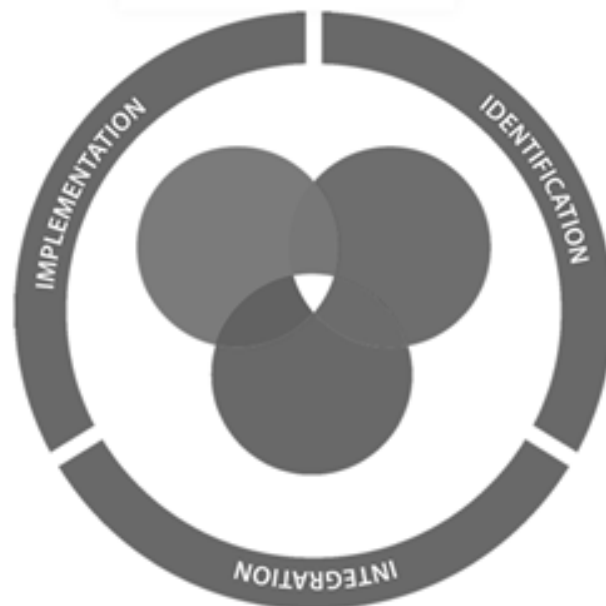
This formula is applied across the full range of skills a programme is designed to develop. For any given competency area, qualitative efficiency can be calculated as the actual competency level achieved divided by the intended competency level specified, multiplied by 100 per cent. When aggregated across all competency areas within a programme, the mean QE score provides an overall measure of qualitative efficiency. To operationalise this measure, the study introduces the Strategic Competency-Efficiency Matrix (SCEM), shown in Figure 1.



*Figure 1.* The Strategic Competency-Efficiency Matrix

Figure 1 shows the SCEM, a framework that researchers self-developed in this study to analyse programme performance across qualitative and quantitative efficiency dimensions. The SCEM TVET programmes on two dimensions. The x-axis represents the Quantitative Efficiency Score, an aggregate coefficient of internal efficiency measure, numbered using a zero to one hundred scale. The y-axis represents the Qualitative Efficiency Score, an aggregate measure of competency attainment across all stipulated skill areas numbered using a zero to one hundred scale. The matrix creates four strategic quadrants named Quadrant I which is the Efficiency Zone (High quantitative metric / High qualitative rating). This zone contains truly efficient programmes, having both high throughput and high competency attainment. Quadrant II is the Resource Deficit Zone (High quantitative metric / Low Qualitative rating). This zone contains programmes that are quantitatively efficient but qualitatively deficient. The zone represents the paper graduate problem where students graduate efficiently but lack critical competencies. This quadrant typically indicates resource constraints that limit competency development despite smooth progression. Quadrant III is the Pedagogical Mismatch zone (Low Quantitative metric / High Qualitative rating). This zone contains programmes that develop strong competencies but struggle with retention and completion. This may indicate that curricula are demanding but effective where students persist, or that assessment is rigorous, but support systems are inadequate. Lastly, Quadrant IV is the Critical Failure Zone (Low Quantitative metric / Low Qualitative rating). This zone contains programmes that are inefficient according to both quantitative and qualitative ratings. Programmes that fall in this quadrant neither graduate students efficiently nor develop competencies. These require comprehensive intervention.

The UNESCO-UNEVOC BILT framework currently comprises three components: Identify, Integrate, and Implement as shown in Figure 2.



**Figure 2.** The UNESCO-UNEVOC BILT Framework

Source: <https://unevoc.unesco.org/bilt/BILT+-+New+qualifications+and+competencies>

This study argues that the framework is incomplete without a fourth component named as the “Indicate” component in this study. This is a systematic competency attainment auditing that verifies whether the intended competencies outlined by the syllabus outcomes have actually been developed. Adding “Indicate” as the fourth component transforms the BILT framework from a linear implementation model into a true learning system with feedback for ongoing adaptation, creating accountability for outcomes rather than just for activities. It also facilitates the identification of when implementation is failing to produce intended results. This provides data for continuous improvement of curriculum, resourcing, and pedagogy.

## Method

The study was embedded in the pragmatist paradigm, which emphasises practical problem-solving and justifies the integration of quantitative and qualitative methods to comprehensively address research questions (Creswell & Plano Clark, 2011; Shannon-Baker, 2016). It used a mixed-methods approach and a convergent parallel design. The population of the study comprised 270 students, 23 lecturers and 15 administrative staff, comprising Heads of Departments (HODs) and Lecturers-in-Charge (LICs) of specialisation areas in Carpentry and Joinery, Wood Technology, and Building Technology programmes across five public TVET institutions in Harare, Zimbabwe. Three institutions were purposively selected to represent the range of TVET institution types, including a polytechnic, a technical teachers’ college, and an industrial training centre. The sample for the quantitative phase of the study had 161 students, comprising 72 Building Technology students, 59 Carpentry and Joinery students, 30 Wood Technology students and 22 lecturers. The sample for the qualitative phase of the study was made up of three HODs and seven LICs. One LIC per specialisation per institution and one HOD per institution were chosen, resulting in a total of ten participants. Stratified proportionate random sampling was used to select respondents for the quantitative phase of the study. Lecturers were sampled using a census technique where all lecturers were selected due to small numbers. For the qualitative phase of the study, the stratified purposive sampling technique was used.

Data collection instruments included structured five-point Likert-type lecturers’ and students’ questionnaires for the quantitative phase of the study. To collect quantitative data on internal efficiency, document analysis of enrolment registers, examination results, and graduation records for cohorts from 2018 to 2023, was used. This facilitated the calculation of graduation rates, pass rates, dropout rates, repetition rates, stagnation rates, and coefficients of internal efficiency following the UIS (2017) formulae. Students rated their own competencies across all skill areas stipulated in their respective syllabi. Competencies were also rated using marks obtained from lecturers’ and external assessors’ assessments that used skills proficiency profiles developed by HEXCO to enable triangulation.

In the quantitative phase of the study, descriptive statistics (including means) and analysis of variance (ANOVA) were used to analyse the data. Quantitative efficiency metrics were calculated using standard UIS (2017) formulae. These included graduation rates, pass rates, and coefficients of internal efficiency. QE scores were calculated using the formula that we developed. The formula was  $QE = (Ca/Ci) \text{ times } 100\%$ . Intended competency levels ( $C_i$ ) were established at 4.0 on the five-point scale, and actual competency levels ( $C_a$ ) were derived from the mean of student and

lecturer ratings. These scores positioned programmes within the SCEM framework. Qualitative data were analysed thematically using Braun and Clarke's (2006) six-stage thematic analysis techniques involving familiarisation, coding, theme identification, theme review, theme definition, and reporting.

## Results

### Quantitative Efficiency Profiles

Carpentry and Joinery demonstrated high quantitative efficiency across all cohorts studied. Graduation rates were high with 90.7 per cent for the 2018 to 2020 cohort, 88.9 per cent for 2019 to 2021, and 92.68 per cent for 2020 to 2022. Dropout rates were very low, ranging from zero to 2.2 per cent across cohorts. The coefficient of internal efficiency was exceptionally high at 95.74 per cent for 2018 to 2020, 95.45 per cent for 2019 to 2021, and 97.61 per cent for 2020 to 2022.

Building Technology showed similarly high quantitative efficiency. Graduation rates were 93.7 per cent for 2018 to 2020, 93.3 per cent for 2019 to 2021, and 92.7 per cent for 2020 to 2022. Dropout rates ranged from zero to 4.2 per cent across cohorts. The coefficient of internal efficiency was 93.7 per cent for 2018 to 2020, 99.25 per cent for 2019 to 2021, and 99.19 per cent for 2020 to 2022.

In Wood Technology, graduation rates were 96 per cent for 2018 to 2020, 88 per cent for 2019 to 2021, and 84 per cent for 2020 to 2022. Dropout rates ranged from zero to 8 per cent across cohorts. The coefficient of internal efficiency was 98.7 per cent for 2018 to 2020, 96.2 per cent for 2019 to 2021, and 97.2 per cent for 2020 to 2022.

### Qualitative Efficiency

To evaluate the qualitative dimension of this efficiency, Qualitative Efficiency (QE) scores were used to systematically evaluate the qualitative dimension of internal efficiency. These scores were calculated by comparing actual competency means ( $C_a$ ) against the proficiency benchmark ( $C_i$ ) of 4.0 that the researchers had predetermined.

In Carpentry and Joinery, data obtained from questionnaires showed that students were proficient in traditional skills like partitioning ( $C_a = 3.90$ ) and joinery construction ( $C_a = 3.53$ ). However, data from interviews revealed that the acquisition of these competencies depended on the context. For instance, LIC 2 explained that students achieved high competencies in traditional wood-frame partitioning but faced difficulties when using modern materials, which included aluminium channel frames and drywall systems.

The shuttering competencies received a low average rating of 2.98. The lecturers rated this competency higher than students, but the interview results demonstrated that students lacked precision. Competencies in AutoCAD had a combined mean of 2.42, indicating low proficiency. This was mostly attributed to a lack of computer literacy. HOD 1 observed that most level one students had very little prior knowledge of computers. This acquired AutoCAD skills a major hurdle to most students. These findings are synthesised in Table 1.

**Table 1.** Mapping of Technical Competencies into the SCEM Framework (Carpentry and Joinery).

Competency Area	Student Mean (Ca)	Lecturer Mean (Ca)	Combined Ca	QE Score a/4.0×100%	SCEM Quadrant	Primary Constraint Identified
Shuttering	2.63	3.33	2.98	74.5%	II: Resource Deficit	Inadequate formwork materials, formwork often fails
Partitioning	3.47	4.33	3.90	97.5%	I: Efficiency Zone	Adequate hand tools, traditional methods, well-resourced
Joinery Construction	3.72	3.33	3.53	88.3%	I: Efficiency Zone	Strong traditional joinery skills
AutoCAD	2.50	2.33	2.42	60.5%	IV: Critical Failure	Insufficient computers, limited software access

In Building Technology, results from both students' and lecturers' questionnaires showed that students were competent in core practical skills, with Brickwork and Block Laying having a mean score of 4.00, Concrete Works (Ca = 3.95) and Setting Out being rated as (Ca = 3.83). These competencies were confirmed in qualitative data where some participants revealed that final-year students could interpret site plans as well as execute the setting out process with minimal supervision. However, concerns were raised regarding quantitative techniques and digital competencies. The mean for competencies in quantitative techniques was 2.75. Some participants said that students often avoided quantitative calculations unless they were necessary since they lacked confidence. The situation was also similar to AutoCAD, which also received a low mean of 2.43. A participant (LIC 2) noted that many students barely grasped the basics. These results are mapped in Table 2.

**Table 2.** Mapping of Technical Competencies into the SCEM Framework (Building Technology)

Competency Area	Student Mean (Ca)	Lecturer Mean (Ca)	Combined Ca	QE Score /4.0×100%	SCEM Quadrant	Primary Constraint Identified
Setting Out & Excavation	3.65	4.00	3.83	95.8%	I: Efficiency Zone	Adequate surveying equipment
Concrete Works	3.70	4.20	3.95	98.8%	I: Efficiency Zone	Basic materials available
Brickwork & Block Laying	3.60	4.40	4.00	100%	I: Efficiency Zone	Traditional skills well-developed
Quantitative Techniques	2.90	2.60	2.75	68.8%	II: Resource Deficit	Weak numerical foundations, insufficient practice
AutoCAD	2.26	2.60	2.43	60.8%	IV: Critical Failure	No dedicated CAD lab, limited software

In Wood Technology, the competency profile was uneven. Results from questionnaires produced a combined mean of (Ca = 3.35) for Machine Operation. CNC Operation had a combined mean of 2.07, showing very low competencies. A participant (HOD 1) said that students could explain CNC operation theoretically, but could not write or modify codes because they only experienced these machines during factory visits. Similarly, AutoCAD had a low mean rating (Ca = 2.57). A Lecturer-in-Charge (LIC 3) noted that most students did not understand layer management or dimensioning by the end of their studies. These findings are summarised in Table 3.

**Table 3.** Mapping of Technical Competencies into the SCEM Framework (Wood Technology)

Competency Area	Student Mean (Ca)	Lecturer Mean (Ca)	Combined Ca	QE Score a/4.0×100%)	SCEM Quadrant	Primary Constraint Identified
Cutter Development	2.63	3.40	3.02	75.5%	II: Resource Deficit	Inadequate sharpening equipment
Machine Operation	3.90	2.80	3.35	83.8%	I: Efficiency Zone	Basic machines functional but overestimation by students
CNC Operation	1.73	2.40	2.07	51.8%	IV: Critical Failure	No CNC machines in institutions
AutoCAD	2.77	2.37	2.57	64.3%	IV: Critical Failure	Limited computers, theoretical only

The preceding results showed that there was an efficiency paradox in the selected Construction Engineering programmes. High quantitative throughput coexisted with severe qualitative deficits. The results showed that most traditional craft skills fell within the efficiency zone in quadrant I of the SCEM Framework. On the other hand, modern digital and technological competencies fell into the critical failure zone in quadrant IV or the resource deficit area in quadrant II. As shown by data obtained from interviews, this paradox was caused by several systemic factors. One of the factors was that the HEXCO examination system allowed students to pass without demonstrating true proficiency in the syllabus-stipulated competencies, as terminal examinations comprised written papers without a practical component. The second factor relates to the shortages of training resources. As noted by LIC 1 high-end machinery was not acquired because it would be under-utilised given small student cohorts. The last factor was related to the institutional environment, which rewarded graduation rates over competency assessment. This practice potentially created an incentive to move students through the system even when their mastery of modern technology-mediated competencies is incomplete.

## Discussion

The first research question focused on the quantitative efficiency profile of construction programmes. The findings showed that graduation rates for all specialisation areas exceeded 89% while coefficients of internal efficiency reached 99.25%. This suggested that the Construction Engineering programmes were training students with minimum wastage from dropouts and repetition. In line with the Systems Theory, this shows that the training processes in these areas were highly efficient. However, when the coefficient metrics are compared to those of other

African countries, they contrast with the regional averages. For instance, Okinyi et al. (2021) in Kenya and Makinde and Adu (2022) in Nigeria reported very low efficiency coefficients of 24.3% and 33.75%, respectively. This meant that while TVET systems in other African countries seem to be struggling with wastage caused by dropouts and repetitions, the Construction Engineering programmes in Zimbabwe do not have this problem. However, although this situation looks like an absolute efficiency of the system, the subsequent qualitative findings suggest that this smooth flow of students through the education cycle may have been achieved by lowering the barriers to programme completion, rather than by elevating the level of competency mastery.

The second and third research questions looked into QE and why it was different from the quantitative state of internal efficiency. Modern skills like AutoCAD and CNC operation were classified in the critical failure category. This showed that the system was inefficient insofar as training these digital competences is concerned. In Systems Theory, a system is only as strong as its weakest link. In this case, the input of modern equipment like CNC machinery and AutoCAD-compliant computers was missing, which compromised the production of a competent graduate. These findings align with the findings about the lack of competencies by graduates in Tanzania (Mgaya, 2022), as well as Rwanda (Rwamu, 2019), where graduates were certified as possessing a diploma in a given trade but were still unable to exhibit industry-specific competencies necessary in modern work. This gap exposes a major flaw in the UNESCO-UNEVOC BILT Framework. The framework is based on Identifying, Integrating, and Implementing new competencies, but there is no system in place to “Indicate” the result of this implementation. By proposing “Indicate” as a “Fourth I,” this paper argues that there should be an audit system in place to determine competency levels. Without the “Indicate” component, the system lacks the feedback loop necessary to recognise that while it is “Implementing” a curriculum, it is failing to produce the actual competency intended by the syllabus.

The Strategic Competency-Efficiency Matrix (SCEM) is the tool that finally offers the diagnostic clarity needed to understand the reasons behind the simultaneous reality of the programme being both efficient in terms of student flow rates and yet also failing at the same time when it comes to training some skills. As shown in the results, most of the traditional craft skills studied are located in the Efficiency Zone. This situation obscures the problems in the other quadrants. Because the students are proficient in traditional craft skills such as brickwork or joinery, it is assumed that the training is effective; yet competencies in modern skills such as AutoCAD and CNC are located in the resource deficit and critical failure zones. In the long term, this implies that Construction Engineering programmes are successfully producing paper graduates who are optimised for the statistics of the parent Ministry but ill-equipped for the demands of the modern labour market.

The study also examines the impact of this research on global measurement frameworks. Currently, the UIS formulas have only been used to assess the efficiency of TVET, giving a one-dimensional view of how TVET is doing. Therefore, using the SCEM framework as a performance measurement tool and an effective method for measuring this QE of other countries’ TVET systems will allow countries to use qualitative measures of efficiency in addition to the traditional measures of efficiency. The SCEM framework increases the focus on the actual capabilities of the graduates rather than the number of graduates, and provides an avenue for countries to evaluate whether the efficiencies being achieved from graduating students are being achieved without sacrificing the quality of students being produced.

## **Conclusions and Recommendations**

The study concludes that standard internal efficiency measurements, which assess students' progression rates, cannot effectively measure the internal efficiency of TVET systems. Although the most commonly used metrics may indicate a smooth flow of students through the training cycle, they do not show whether students develop the skills needed for current job markets. It is also concluded that Zimbabwean construction engineering programmes efficiently move students through the training cycle but remain weak in training advanced digital and technical skills required by the modern labour market. This gap reflects a challenge driven by resource constraints and the absence of competency auditing, which allows students to graduate without mastering key industry-relevant skills.

The study makes the following recommendations: The SCEM framework should be used by educational planners to evaluate the internal efficiency of programmes through both their quantitative and qualitative aspects and identify hidden resource deficits. At the international level, UNESCO-UNEVOC must enhance the BILT framework by adding a system to monitor competencies.

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### **Authors' Note**

This Article was derived from a PHD thesis where Abia Mutumbwa was the student and Dr. Tawanda Chinengundu was the Supervisor

# Trauma-Responsive Technical Education: A Conceptual Framework for Classroom, Laboratory, Workshop, Barn, and Clinical Environments

Donna K. Crouch

## Abstract

This conceptual article introduces the Trauma-Responsive Technical Education (TRTE) Framework, the first model to explain how trauma-linked behaviours emerge in high-risk vocational and technical learning environments. It addresses a longstanding gap in vocational education and training (VET) scholarship by examining how trauma manifests within welding booths, construction workshops, agricultural barns, engineering laboratories, manufacturing facilities and health science simulation spaces, settings characterised by sensory intensity, physical hazards and procedural complexity. Drawing on trauma science, neurodevelopment, occupational safety research, experiential learning theory, and VET pedagogy, the manuscript argues that existing trauma-informed models, largely designed for academic classrooms, are insufficient for technical contexts. It proposes a conceptual structure that integrates emotional regulation, sensory conditions, safety routines, relational interactions, and educator wellbeing. Five trauma-responsive domains, regulation-to-safety alignment, sensory modulation, procedural stability, relational micro-interactions, and educator wellbeing, are identified as fundamental to safe and effective technical learning. These domains interact dynamically with the sensory, mechanical, relational, and procedural demands unique to technical education. The TRTE Framework establishes a foundation for future empirical research, teacher preparation redesign, safety system development, and policy innovation centred on equity, wellbeing and workforce participation.

**Keywords:** trauma-responsive education; vocational education and training; technical education; safety and behaviour; workshop and laboratory pedagogy; trauma-informed practice; teacher preparation; student wellbeing

## Introduction

### **Trauma, Technical Learning Environments, and the Need for a New Framework**

Trauma-informed education has gained international attention in recent years, yet existing models overwhelmingly reflect the conditions of mainstream academic classrooms. These frameworks prioritise predictability, emotional regulation, and restorative practice in environments characterised by controlled sensory input, low physical risk, and stable routines (Cavanaugh, 2016; Chafouleas et al., 2016; Cole et al., 2013). Technical vocational education and training (VET), however, unfolds within fundamentally different instructional landscapes. Training places include welding booths emitting heat and light, construction workshops filled with movement and noise, barns with unpredictable livestock, engineering laboratories with high-frequency machinery, and health science simulation rooms with emotionally evocative cues. These environments are defined not only by applied learning, but by the constant interplay of sensory intensity, procedural complexity, and immediate safety demands (Billett, 2014; Lucas et al., 2012).

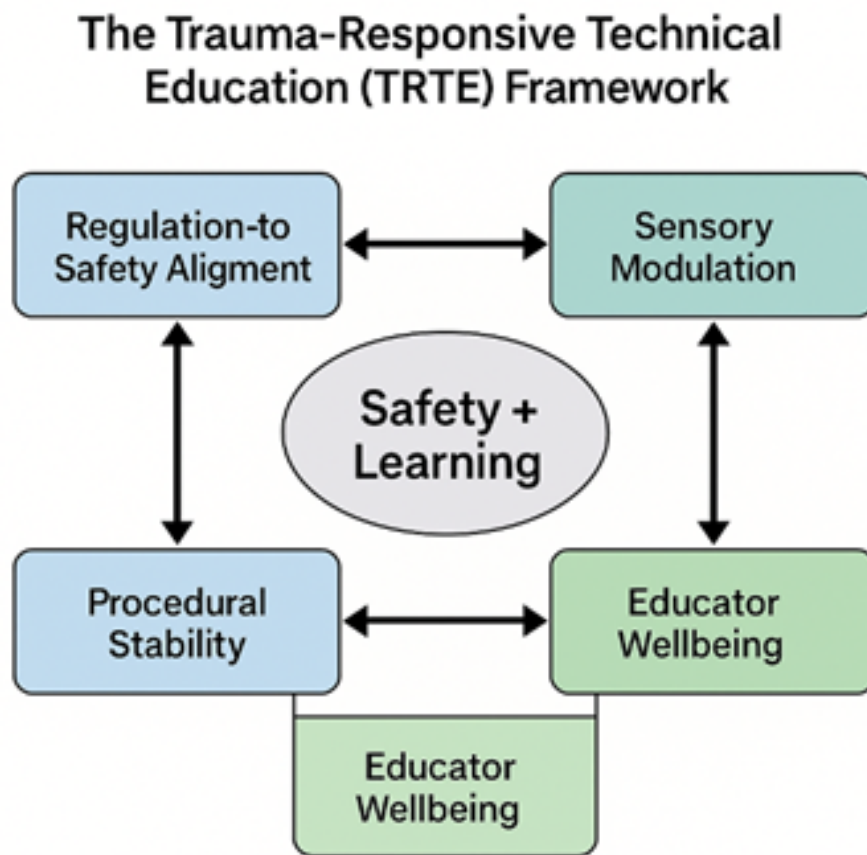
The demographic profile of VET learners intensifies concern about trauma responsiveness. Across many regions, vocational programmes disproportionately enrol students who experience structural disadvantage, including poverty, educational marginalisation, and disability-related adversity (Theobald et al., 2019; UNESCO-UNEVOC, 2021). These learners often thrive in applied, hands-on learning environments that allow them to connect skills with purpose, but the same sensory and procedural features that make VET immersive can also amplify trauma-linked responses (Morgan et al., 2015; Perry & Winfrey, 2021).

Traditional trauma-informed strategies, such as quiet corners, flexible seating or restorative conversations, are insufficient for spaces where a moment of dysregulation can result in immediate danger. A freeze response during metalwork, a dissociative episode near machinery or an exaggerated startle reaction in a functioning workshop is not simply a behavioural concern; it is a safety hazard requiring immediate, informed interpretation and response (Perry & Winfrey, 2021; van der Kolk, 2014). Yet most VET teachers, particularly those entering through occupational certification routes, receive minimal training in trauma, neurodevelopment, or sensory processing (Grollmann & Rauner, 2007; Lucas et al., 2012).

This article introduces the Trauma-Responsive Technical Education (TRTE) Framework to address this gap. The framework synthesises trauma science, experiential learning theory, safety culture research, and VET pedagogy, offering the first conceptual model tailored specifically to technical learning environments. It positions trauma-responsive practice as a critical dimension of safety, pedagogical effectiveness, equity, and workforce preparation. The following part elaborates the framework's five domains: regulation-to-safety alignment, sensory modulation, procedural stability, relational micro-interactions, and educator wellbeing, illustrating their relevance across welding, agriculture, construction, engineering, manufacturing, and health science contexts. This foundational model establishes the groundwork for future empirical studies, policy development, and the redesign of teacher preparation systems (Lucas et al., 2012).

### The Trauma-Responsive Technical Education (TRTE) Framework

The TRTE Framework builds on the premise that trauma is expressed differently depending on the structure, demands and sensory qualities of the environment. Vocational Education Training (VET) settings are immersive, embodied learning spaces shaped by sound, light, movement, heat, hazard, and physical proximity. These conditions influence learners' regulatory states and behavioural responses in ways distinct from traditional classrooms. Rising attention to learner mental health in VET internationally has led to greater recognition of dysregulation, attentional fragmentation, and sensory sensitivity among students whose backgrounds include adversity or instability (Maynard et al., 2019; UNESCO-UNEVOC, 2021). The five domains of the TRTE Framework: regulation-to-safety alignment, sensory modulation, procedural stability, relational micro-interactions, and educator wellbeing, provide a coherent structure through which these dynamics can be understood and addressed.



**Figure 1.** The Trauma-Response Technical Education (TRTE)

*Note.* A conceptual diagram showing the five TRTE domains (regulation-to-safety alignment, sensory modulation, procedural stability, relational micro-interactions, educator wellbeing) arranged around a central core labelled “Safety + Learning,” with arrows indicating their bidirectional relationships.

**TABLE 1.** TRTE Domains and Supporting Theoretical Foundations

TRTE domain	Supporting theory	Relevance to technical education
Regulation-to-safety alignment	Executive function; neurodevelopment; trauma theory	Ensures emotional/physiological regulation necessary for technical sequencing
Sensory modulation	Sensory integration; polyvagal theory	Addresses overstimulation from welding arcs, machine noise, livestock, alarms
Procedural stability	Predictability theory; cognitive load theory	Supports memory-intensive, multi-step technical procedures
Relational micro-interactions	Attachment theory; relational pedagogy	Builds trust essential to real-time safety correction
Educator wellbeing	Secondary traumatic stress; resilience theory	Directly affects learner regulation and lab safety climate

*Note.* The five TRTE domains operate dynamically across technical learning contexts.

*Source:* Author-developed conceptual framework drawing on interdisciplinary scholarship in trauma science, vocational pedagogy, and safety culture research (e.g., Morgan et al., 2015; Billett, 2014; Lucas et al., 2012).

Regulation-to-safety alignment highlights the link between neurobiological regulation and safety performance in technical tasks. Trauma affects working memory, inhibition and cognitive flexibility, capacities essential for complex sequencing, and hazard assessment (Blodgett & Lanigan, 2018; Perry & Winfrey, 2021). In settings requiring sustained attention and precise tool engagement, even mild dysregulation can produce errors with significant consequences. Learners who enter a technical environment in a dysregulated state may experience difficulty following sequences, processing instructions or maintaining situational awareness. Subtle signs, slowed response times, over-intensity in posture, hesitancy before tool engagement, may signal cognitive overload rather than disinterest or defiance. When educators recognise these cues and adjust pacing or scaffolding accordingly, they reduce both immediate risk and longer-term disengagement. Research demonstrates that regulation, modelling, and scaffolded learning are central to consistent task performance in VET contexts (Durlak et al., 2015; Lucas et al., 2012).

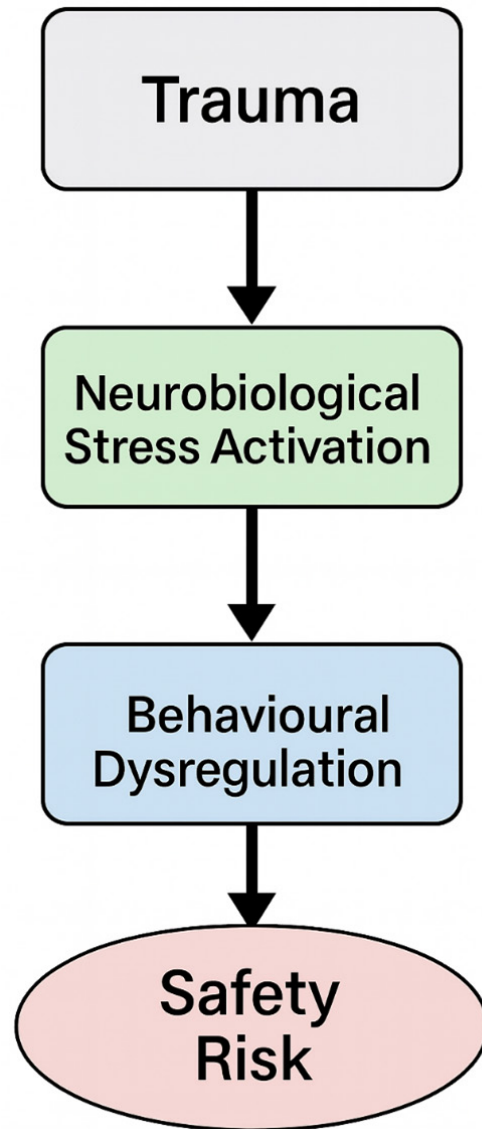
**TABLE 2.** Trauma-Linked Responses and Technical Environment Demands

Trauma-linked student response	Impact in technical environment	Safety risk level	Example pathways
Hypervigilance	Divided attention during multi-step tasks or equipment operation	High	Welding, Construction
Dissociation / Freeze Response	Pausing or failing to disengage tools; delayed reactions	Critical	Agriculture, Manufacturing
Irritability / Agitation	Reactivity when corrected for safety procedures	Medium	Carpentry, Engineering
Withdrawal / Avoidance	Avoidance of equipment; inability to initiate tasks	Medium	Health Science, Welding
Over-compliance / Rushing	Skipping safety checks; hurrying through sequences	High	Machining, Robotics

*Note.* This table illustrates how trauma-related behaviours uniquely compromise safety and performance within technical laboratories and workshop environments.

*Source:* Author-developed conceptual synthesis based on trauma and vocational education literature (e.g., Blodgett & Lanigan, 2018; Lucas et al., 2012; Perry & Winfrey, 2021).

Sensory modulation acknowledges that trauma shapes how individuals interpret and respond to sensory input. Technical environments contain high levels of sensory stimulation: abrupt noises, shifting light, machinery vibrations, odours, and movement. Trauma can heighten sensory vulnerability, disrupting the nervous system's filtering mechanisms, and triggering survival-based responses (Perry & Winfrey, 2021; van der Kolk, 2014).



**Figure 2.** Trauma → Dysregulation → Safety Risk Pathway

*Note.* This figure depicts the pathway through which trauma history influences student behaviour in a technical environment. Boxes should read: “Trauma Exposure” → “Neurobiological Stress Activation” → “Behavioural Dysregulation” → “Technical Task Interference” → “Increased Safety Risk.”

*Source:* Author conceptualization informed by trauma neurobiology literature (e.g., Perry & Winfrey, 2021; van der Kolk, 2014).

Learners may experience startle reactions, withdrawal or dissociation in response to sensory stimuli that peers find manageable. These reactions affect concentration, fine-motor control, and overall task readiness. Trauma-responsive sensory modulation does not require altering the authenticity of technical environments but involves structuring transitions more deliberately, preparing learners

for sensory changes, and providing temporary regulatory spaces. Subtle modifications, predictable routines for equipment start-up, advance warnings before sensory shifts, staged exposure during early training, can prevent sensory overload without reducing instructional rigour.

Procedural stability emphasises the importance of predictable routines and transitions. Technical programmes often require fluid movement between whole-group demonstration, independent practice, equipment setup, and safety verification. For learners with trauma histories, procedural unpredictability may be interpreted as threat, leading to withdrawal, irritability or freeze responses (Chafouleas et al., 2016; Felitti et al., 1998). When procedural changes coincide with tasks requiring complex sequencing, the risk of error increases as cognitive resources are diverted toward emotional regulation. Predictable routines, clear visual schedules, transparent transition cues, and consistent equipment protocols help stabilise learner expectations. VET scholarship repeatedly finds that procedural clarity, modelling, and scaffolded participation enhance both performance and safety, particularly for novice learners or those managing elevated cognitive load (Billett, 2015; Lucas et al., 2012). Within trauma-responsive frameworks, procedural stability thus serves both pedagogical and protective functions.

Relational micro-interactions reflect the inherently interpersonal nature of technical instruction. Teachers frequently intervene in close physical proximity, provide real-time corrective feedback, and issue immediate safety directives. Trauma-affected learners are often highly sensitive to tone, approach speed, eye contact, and perceived judgement, making moment-to-moment interactions especially consequential (Morgan et al., 2015; Dweck, 2017). A corrective cue intended as neutral may be interpreted as anger, rejection or humiliation. Trauma-responsive relational practice requires clarity, neutrality, and predictability in communication. Following safety interventions, brief relational repair, acknowledging the correction without criticism, supports trust, and continued engagement. Scholars emphasise that relational stability is foundational to persistence and confidence within vocational pathways (Grollmann & Rauner, 2007; Lucas et al., 2012). In trauma-responsive technical environments, relational dynamics directly influence emotional safety and hazard awareness.

Educator wellbeing forms the final domain and acknowledges that trauma-responsive VET practice must account for the emotional and cognitive demands placed on teachers. Technical educators manage hazard assessment, equipment monitoring, behavioural incidents, pastoral care, and complex demonstration-based teaching. The cumulative load increases vulnerability to burnout, fatigue, and secondary traumatic stress (Dreer, 2023; Sweeney et al., 2016). When educators experience reduced wellbeing, their ability to maintain regulatory steadiness, relational clarity or accurate risk judgement is compromised. Trauma-responsive systems must therefore include institutional supports such as shared safety protocols, manageable class sizes, structured professional development, and administrative recognition of the emotional labour inherent in technical teaching. Emerging literature emphasises that teacher wellbeing is integral to school climate, learner engagement, and sustainable instructional practice (Dreer, 2023).

Collectively, these five domains illustrate the complex interplay between trauma, sensory experience, relational cues, procedural structure, and emotional labour within technical learning environments. The TRTE Framework argues that trauma responsiveness in VET is not an optional enhancement but an essential safety mechanism that supports equitable participation, consistent

skill development, and safe performance across vocational pathways. It provides a conceptual foundation for future empirical research, teacher preparation reform, and policy innovation across international VET systems.

### **Conceptual Model Structure and Propositions**

The Trauma-Responsive Technical Education (TRTE) Framework conceptualises trauma responsiveness in vocational learning environments as an interaction between learner regulation, environmental stimuli, instructional structures, relational dynamics, and educator wellbeing. The model proposes that these domains operate simultaneously within high-risk technical environments and collectively influence both learning outcomes and safety performance.

The framework advances the following conceptual propositions:

**Proposition 1.** Learners' emotional and physiological regulation directly influences their ability to safely perform complex technical tasks requiring sustained attention and procedural sequencing.

**Proposition 2.** High levels of sensory stimulation common in technical environments interact with trauma-related sensitivity to sensory input, increasing the likelihood of behavioural dysregulation when sensory conditions are not managed or anticipated.

**Proposition 3.** Procedural stability, including predictable routines and transparent task sequences, reduces cognitive load, and supports both learner regulation and safe technical performance.

**Proposition 4.** Relational micro-interactions between instructors and learners influence the interpretation of corrective feedback and, therefore, affect both emotional safety and willingness to engage in technical skill development.

**Proposition 5.** Educator wellbeing moderates the effectiveness of trauma-responsive instruction by shaping teachers' capacity to maintain regulatory stability, relational clarity, and accurate safety judgement.

Collectively, these propositions suggest that trauma-responsive technical education operates as a multidimensional system in which instructional structure, environmental conditions, and relational dynamics interact to influence both safety and learning outcomes.

### **Application Across Technical Education Contexts**

Practical application of the TRTE domains varies across technical education environments. In welding laboratories, instructors may reduce sensory overload by gradually introducing arc exposure and providing clear procedural sequencing during equipment setup. In construction workshops, teachers can reinforce regulation-to-safety alignment through structured tool checklists and staged demonstrations before independent equipment use. Agricultural educators working in barns or animal facilities may anticipate startle responses and prepare students for unpredictable

livestock behaviour through pre-task briefings and clear spatial safety boundaries. In engineering or manufacturing laboratories, sensory modulation strategies such as equipment start-up warnings and noise protection routines support learner regulation. Health science instructors can support relational micro-interactions through calm, structured feedback during simulation exercises where emotional intensity may be high. Across these environments, consistent routines, predictable transitions, and supportive communication reduce the safety risks associated with trauma-linked dysregulation while promoting effective technical skill development.

### **Conclusion**

The TRTE Framework offers the first trauma-responsive conceptual model specifically designed for technical and vocational education. By linking emotional regulation, sensory processing, procedural stability, relational dynamics, and educator wellbeing to the realities of high-risk learning environments, the framework extends trauma-informed scholarship into a domain that has been largely overlooked. Its contribution lies not only in identifying the unique challenges faced by trauma-affected learners in technical settings, but in providing a coherent structure for responding to those challenges through pedagogy, preparation, and policy. As VET systems worldwide seek to support learners' wellbeing, safety, and workforce readiness, the TRTE Framework establishes a foundation upon which future research, programme design, and institutional practices can be built.

## **Compliance Statements**

### **Conflict of Interest Statement**

The author declares no conflicts of interest associated with this manuscript.

### **Funding Statement**

This work received no external funding and was undertaken as part of the author's scholarly research agenda.

### **Ethics Declaration**

This conceptual manuscript did not involve human participants and therefore did not require ethical approval. A separate empirical study (Article 2) is currently undergoing formal IRB review.

### **Data Availability Statement**

No empirical data were generated for this article; conceptual materials are available upon request.

### **Author Contribution Statement**

The author solely conceptualised, developed, wrote, and revised this manuscript.

### **Acknowledgements**

The author acknowledges technical educators, vocational faculty, and CTE leaders whose professional insights contributed to the development of the TRTE Framework.

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# **Acute Suicide Postvention in the U.S. Construction Industry: Addressing the First 48 Hours Following Suicide**

**John S. Gaal**

## **Abstract**

This pilot study focuses on the need for an acute suicide postvention response in the US construction industry. This author proposes that it is necessary to rethink suicide research and prevention due to the disconnect between the three legs of the Suicide Triangle: Prevention, Intervention, and Postvention. A series of related calls, in Q3-2024, served as the impetus for this author's attempt to partially shift the construction industry's focus from suicide prevention and intervention to also include postvention care for loss/attempt survivors. It soon became clear that suicide postvention was an under-researched area of study, in general, and, more specifically, pertaining to the construction industry—not to mention the acute phase following a suicide.

By means of a mixed methods approach, the aim of this pilot study is to establish if there is a need for the construction industry to address suicide postvention. After consulting with the author's mentor, a mixed methods approach was undertaken. This included designing a three-phase process involving surveys, interviews, and a focus group that sought input from 79 stakeholders spanning 5 countries. The findings from Phase 1 (surveys) & Phase 2 (interviews) indicated a need to address the issue of suicide postvention in the construction industry—in the short term/acute phase—with trained peer supporters. A Focus Group was recruited from a sampling of participants in Phases 1 and 2 and served as Phase 3 of this study. It provided an opportunity to cross-pollinate views and set the stage for producing related article(s), guidebook(s), training(s), and a video to capture and disseminate this study's findings.

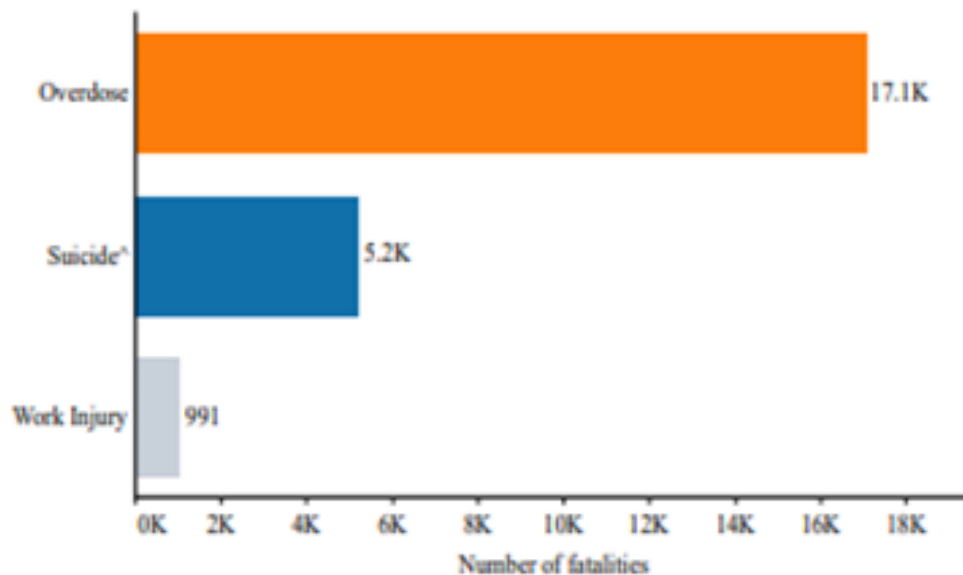
This results of this study provide evidence that the time has come for the U.S. construction industry to address the 3rd leg of the Suicide Triangle: Postvention. In so doing, the industry can link the 3 legs of the Suicide Triangle to help ensure Postvention plays a part in current Prevention and Intervention efforts.

As this was a pilot study, it involved a small sample size of participants. Therefore, one should exercise caution when extrapolating the findings presented herein.

**Keywords:** Postvention, Construction, Acute, Loss Survivors, Peers, Suicide Triangle

## Introduction

Before the end of the 20th Century, researchers studied a variety of aspects related to job site safety in the U.S. construction industry with intentions to decrease/eliminate unsafe conditions/habits. Many of these efforts focused on the physical aspects of safety (Centers for Disease Control and Prevention, 1999). However, in the past decade, more research attention has been paid to the mental aspects of safety in construction. In 2017, the U.S. Centers of Disease Control and Prevention (CDC) reported that in 32 states—as an industrial sector—Construction ranked #2 for suicide deaths just behind Mining & Extraction (Peterson et al., 2020). While, in 2020, the U.S. Department of Health and Human Services revealed that in 46 states and New York City—as an industrial sector—Construction ranked #1 for drug overdose deaths (Billock et al., 2023). Not long after, Trueblood et al. (2024), via The Center for Construction Research and Training (CPWR), published a report that indicated U.S. construction workers (16-64-years-old), in 2022, died five times greater by suicide and 17 times greater by drug overdoses than by workplace related injuries/accidents (See Figure 1).



*Figure 1.* (Source: CPWR, 2024)

DeMarco (2025, para 8) asserts, “As mental health becomes a growing concern across industries, construction leaders are being challenged to respond with both compassion and strategy.” Before the Great Recession fully receded, in the early 2010s, progressive leaders in the St. Louis construction industry began paving a path for dealing with the mental health issues in their local construction industry. While early efforts may have served as a means to address recruiting and retention issues, the major impetus resulted in moving the U.S. Occupational Safety & Health Administration’s (OSHA) from their Focus Four strategy pertaining solely to the physical aspects of job safety to also include the mental aspects of safety on and off the job. As such, in 2021, days prior to the beginning of Suicide Prevention Awareness Month, Deputy Assistant Secretary of Labor, Jim Frederick, addressed the construction industry in what is now known as the “Moonshot”. Herein,

he laid the groundwork for placing psychological safety in construction on the same plane as physical safety (Occupational Health and Safety Administration, 2021). Since then, efforts have been disseminated by national labor organizations, management associations, and professional societies and serve as models across the industry. However, when it comes to a strategy for dealing with suicide postvention in the construction industry, this remains an obscure matter when compared to the training and programs available for suicide prevention and intervention. In fact, AFSP launched a suicide prevention program in 2025 called Talk Saves Lives-Construction while QPRI implemented a virtual QPR-Gatekeeper suicide intervention program in 2023 addressing the construction industry. As of mid-2025, a formal program to specifically address suicide postvention in the construction industry did not exist.

In brief, suicide prevention mainly focuses on issues related to statistics and awareness such as risk factors and protective factors; suicide intervention is basically what someone (gatekeeper) does when they see/hear a person in crisis; and suicide postvention is the care provided to survivors after a suicide or suicide attempt has taken place. Since 2017, after the suicide death of this author's oldest son, the gap between prevention/intervention and postvention became clearer. The author's own personal experience with a lack of emergency outreach for postvention assistance was further entrenched in 2021 and 2024. In 2021, an industry colleague reached out to share that he just lost his 21-year-old son hours earlier to suicide and was seeking support. And, in the third quarter of 2024, the author took eight similar suicide calls over a 12 week period. All nine of these callers were seeking assistance immediately after they just lost their loved ones. This period is referred to as the acute phase: the first 48-72 hours following the death. The aforementioned rash of calls convinced the author that the time for a change was now, with respect to suicide postvention services as it pertains to the U.S. construction industry, in general, but with a focus on the acute phase. However, designing and developing a program that delivers such services requires people trained to fill that need. Being a Certified Peer Specialist in the state of Missouri for many years, the author proposed that trained Peer Supporters could be positioned to serve as a resource for suicide loss survivors, like the nine encountered in 2021 and 2024.

By identifying the aforementioned gap in services/programs, this author proposed the following research questions:

1. Should the U.S. construction industry address the aftermath of suicides?
2. Is there a need for a postvention program that focuses on the acute phase?
3. If so, might a Peer Supporters serve this need?

With these questions in mind, the author sought the guidance of a mentor and two subject matter experts (SME) to assist in the design, development, and implementation of a multi-phase pilot study that consisted of surveys, interviews, and a focus group seeking input from industry-related stakeholders.

## Literature Review

### Suicide Prevention

Regarding the first leg of the Suicide Triangle, a brief overview will provide general context pertaining to the topic of suicide prevention in the U.S. As per The Ness Center (n.d.), there are a few milestones worth mentioning:

1. in 1968, the American Association for Suicidology was founded to advance suicide prevention research and advocacy;
2. in 1987, the American Foundation for Suicide Prevention (AFSP) was founded as the first national non-profit dedicated to suicide prevention;
3. in 1999, the U.S. Surgeon General's 'Call to Action to Prevent Suicide' formally recognized suicide as a public health problem. This led to the development of a National Strategy for Suicide Prevention that was issued in 2001. This document addressed both Prevention and Intervention. However, it did not mention Postvention until its third edition in 2024, as follows: Strategic Direction 1: Community Based Suicide Prevention: Conduct postvention and support people with suicide-centered lived experience. Its goal is to provide postvention after suicide deaths and support for people with suicide-centered lived experience (U.S. Department of Health and Human Services, p.34).

With respect to suicide prevention in the workplace, Milner, et al. (2015, p. 35) proclaimed, "Very few workplace suicide prevention initiatives had been evaluated in terms of effectiveness..." However, they noted that there were citable examples of prevention activities in a few occupations and non-school workplace settings, including but not limited to the armed forces, police, farming, and construction. In the meta-analysis performed by Milner et al., they identified 212 such initiatives but upon further review narrowed their pool down to 13. Four of these prevention programs utilized training for buddies or gatekeepers: Working Minds: U.S.A., Mates in Construction: Australia, IncoLink: Australia, and ASIST: Canada. And, two of these four focused specifically on the construction industry (Mates and IncoLink). Findings included the importance of union support, having a multi-faceted approach that ensures those at risk can be identified and treated in a timely manner, and employers' concerns over the extent of which it is their responsibility to implement suicide prevention programs.

King et al. (2025, p. 2) asserted, "The Construction industry is one that experiences higher rates of suicide, and therefore a higher need for workplace suicide prevention interventions." In the King et al. analysis of the IncoLink program mentioned above, they attempted to understand the factors that influenced a successful of a suicide prevention program. This model launched the Bluehats Suicide Prevention program in 2018. It involves providing General Awareness Sessions (GAS) to all workers on the job site (i.e., recognizing suicide and mental health concerns in themselves and others). Afterwards, those trained are asked if they would like to be Bluehats. This requires training to become peer supporters with the promise of ongoing support from IncoLink. The GAS program has reached over 7000 workers which includes 300 Bluehats. Surveys and interviews served as the means to gather data from 'Bluehat workers', management, and other industry stakeholders. Findings included understanding the importance of the role the workplace plays in the broader

context of industry and society, opportunities to improve the Bluehat program (i.e., additional delivery formats, improvements to diversity and language issues), and providing more education to foster increased industry commitment.

### **Suicide Intervention**

Regarding the second leg of the Suicide Triangle, suicide intervention is often referred to as suicide prevention intervention. This mixing of ‘legs’ may be cause for some confusion with the general public but a brief explanation of how and why this works follows. With suicide being recognized as a national public health issue, Quinnette (2007) noted, in general, gatekeepers are properly trained to recognize and refer persons identified to be potentially at risk of suicide. To clarify, the recognizing of warning signs—awareness—emanates from the prevention domain while the ability to properly refer someone in need—taking action—stems from the intervention domain. As such, gatekeepers must be knowledgeable in both prevention and intervention domains. Since 1995, Quinnette is credited with developing the 60-90-minute training program called QPR: Question, Persuade, Refer, that has been utilized in more than 40 countries. Quinnette’s goal was to “Conceptually link QPR to CPR—a well-known, universal intervention for emergent medical crises that can be executed by trained lay persons” (2007, p. 5). Quinnette asserts, “It is up to those in an already existing and strategic relationship with the suicidal person to observe this journey and to make an effort to interrupt it with helpful, hopeful intervention.” It is important to note that the QPR Institute developed QPR programs focusing on a variety of high-risk population including the Construction Industry in 2023 and, more specifically, for Iron Workers in 2025.

While QPR serves the purpose of training large groups of people, a more intense version of suicide intervention was developed in the mid-1980s, in Canada, known as Applied Suicide Intervention Skills Training (ASIST). In Evans and Price (2013, p. 214), according to Living Works, “The program is a two-day workshop aiming to help ‘caregivers’ (gatekeepers) feel more comfortable and competent in helping to prevent the immediate risk of suicide.” These researchers explored influences that moved gatekeepers to intervene with at-risk individuals via 305 surveys and 94 follow up interviews involving workers at various levels and types of large and small organizations. Upon analysis of the data, Evans and Price identified the following two approaches:

1. organizations that were committed to training most of their employees;
2. organizations that identified small pockets of employees to attend training.

Evans and Price (2013, p. 215) posited, “These approaches were largely determined by the discourse espoused by the organization regarding suicide and its recognition of a ‘collective responsibility’ for intervention.” To this end, three influences were ascertained:

1. ASIST democratized intervention—prior to training, many employees were not sure about the legality of intervening with at-risk individuals;
2. Leveraging opportunities—interventions increased when those in need were provided a safe space and interacted with an empathetic and trusted gatekeeper;

3. Enhancing the experience—providing help should not be the domain of one employee. As such, gatekeepers can provide support to one another and reduce emotional strain while improving future interventions.

### **Suicide Postvention**

Postvention is often referred to as after-care or, in other words, what do we do after a suicide incident—whether it was an attempt or death. This is the third leg of the Suicide Triangle and is considered an under-developed area of study. In fact, a recent Google inquiry revealed the following, with respect to total PubMed articles available:

1. Prevention: ~38500
2. Intervention: ~21000
3. Postvention: ~1200

Causer et al. (2022, p. 1) state, “Suicide affects the physical and psychological health of the bereaved and, when compared to other causes of sudden death, those bereaved by suicide report higher levels of rejection, shame, stigma, and a need to conceal the method of death.” By definition, bereavement is the period of mourning following the loss of a loved one. It is important to note that some people bereaved by suicide are also considered at risk of suicide. Furthermore, Causer et al. suggest that while effective postvention has been shown to improve mental health and grief-related outcomes, guidance is limited and often not evidence-based. Accordingly, Causer et al. performed an integrative review of 17 related articles—10 from peer reviewed (PR) journals and seven from professional organizations (PO)—by means of thematic analysis. The PR focused on the following occupations: police, fire, armed services, health care, and higher education. While the PO offered general and specific industry guidance in the form of tool kits, guidebooks, etc. A few highlights require mentioning. The first is organizational unpreparedness to address a suicide death in the workplace which places the onus on individuals to seek support while leaving some staff angry and confused. The second is the need to train leaders to positively impact work culture without placing undue pressure on managers who often function in an under-resourced system. The third is the role stigma plays. Causer et al. (2022, p. 15) declare, “It leads to inadequate postvention since, if an organization cannot talk about suicide, it cannot properly support those impacted by it.” The fourth worth noting is, “Currently, workplaces do not provide the time and support required by employees to undertake the emotional work that arises following a colleague suicide” (Causer et al., 2022, p.15). The fifth is that postvention guidance needs acknowledge managers face competing needs: supporting their workers while running a business. Finally, consideration should be given to developing a postvention team that includes members from both inside and outside the organization.

While, historically, most consider Edwin Schneidman the Father of Suicidology, one of Schneidman’s mentees, Dr. Frank Campbell is recognized by many as the contemporary Godfather of Suicide Postvention. Campbell et al. (2004, p., p. 30) stated, “Postvention services have historically been

delivered via a passive model, requiring survivors of the suicide death of a loved one to learn about the available resources in some indirect way and often by sheer chance.” In 1997, a Baton Rouge based pilot program replaced the aforementioned passive model with an active postvention model that became known as the Local Outreach to Suicide Survivors (LOSS) program. LOSS team members are trained in responding to the scene of the suicide, crime scene procedures, bloodborne pathogens, and supportive counseling. The team includes para-professional volunteers (with lived experience) who—as close to the time of death as possible—reach out to survivors in order to provide support and resources. Worth mentioning is the fact that it takes time to build trust with the First Responders (police, fire, and medical examiners) on the scene to gain access to the loss survivors. It is important to note that Campbell et al. (2004) found that when LOSS Teams reach out soon after the suicide death—proactively vs reactively—loss survivors seek assistance in less than two months vs ~4.5 years for those who do not receive survivor assistance.

The Tragedy Assistance Program for Survivors (TAPS) model, per Ruocco et al. (2022) was developed—in 1994—for survivors by survivors and has brought comfort, hope, and healing to more than 90,000 survivors in the past +25 years. Ruocco et al. (2022, p. 1898) noted that around 2008, it “...became apparent that specialized programming for suicide loss survivors was increasing.” In fact, new survivors began asking for assistance beyond the scope provided by the military while longer term survivors reached out because they felt stuck or alone in their grief. The TAPS model provides a three-phase template:

1. Stabilization immediately after a suicide death  
\*With the intention of mitigating risks and promoting healing
2. Offer guidance on how to navigate grieving  
\*Integrating grief in one’s life constructively since grief is a process that lasts a lifetime
3. Establishing a pathway toward post traumatic growth.  
\*Offers opportunities for survivors to make meaning from their loss and, thus, re-channel their grief into instruments of good.

The aforementioned phases are not intended to be linear as issues may arise later on which allows phases to be revisited out of sequence. According to Ruocco et al. (2020, p. 1899), “The model provides guidance on how to navigate an adaptive journey of grieving and establishes a pathway toward intentional posttraumatic growth.” Specifically, Ruocco et al. (2020, p. 1905) proclaim, “...it is critical during the Stabilization phase to ask clearly and directly about suicide risk and then connect survivors to appropriate resources.” Peers with lived experience connect with loss survivors which assists in normalizing emotions, validates the need to seek additional care, and serves as an important form of suicide prevention. To this end, TAPS utilizes both thoroughly trained peers and licensed professionals to deliver care to survivors. Finally, Ruocco et al. (2020, p. 1906) stress, “The TAPS Suicide Postvention Model is broadly applicable to anyone grieving the loss of a loved one to suicide and is applicable to other traumatic events.”

The literature review above provides an overview of what is offered in all three aspects of the Suicide Triangle. Some of the common themes between suicide prevention, intervention, and postvention are highlighted below:

1. Training in each area may be available but not always based in evidence.
2. Training is being tailored to specific organizations, occupations, and special interest groups.
3. Caregivers, Bluehats, para-professionals, in other words, peer supporters, must be willing and available, trusted, and offer resources.
4. Aspects of suicide prevention, intervention, and postvention are interlinked.

While the work of evidence-based training and trained peers in other industry sectors are supported, when it comes to literature focusing on suicide postvention in the U.S. construction industry that specifically targets providing assistance to loss survivors during the acute phase—the first 48 to 72 hours following a suicide death—a gap in research appears to exist. However, if one is able to bridge the divide between occupations, the evidence-based TAPS model could serve as the basis to leverage the use of trained peers in the acute phase in the construction industry. This pilot study attempts to help fill that gap.

*Notes:* Appendix A provides additional information on industry-based programs, etc. relevant to workplace postvention. Appendix B offers background gathered from the author's related research tour in June 2025.

## Methods

This research was based on a mixed-methods approach that consists of surveys, interviews, and a Focus Group. It was designed in three phases, as follows:

**Phase 1:** Surveys

**Phase 2:** Interviews

**Phase 3:** Focus Group

### Surveys

With respect to the survey phase, 70 participants were recruited via email invitations based on convenience sampling. The author utilized his +40 years in the construction industry to identify potential candidates for this portion of the pilot study. The backgrounds of these people ranged from construction industry professionals (white- and blue-collar), consultants, First Responders, and researchers/practitioners. Upon completing the literature review, the author developed a questionnaire consisting of 34 questions. Questions were designed to obtain stakeholders' input on the Suicide Triangle and their views on the need/desire to create an industry Postvention program with a focus on timing and delivery issues. In order to obtain face validity, the author worked with his mentor in an iterative manner—Dr. Hatton—who provided guidance regarding content and context. The aforementioned email consisted of a brief overview of the proposed study, timelines, and an opportunity to obtain informed consent. Sixty-four participants opted-in

to complete the online survey hosted by SurveyMonkey. The survey included close-ended and open-ended questions regarding demographics, professional background, personal/professional awareness of the topic, training approaches, and another opportunity to obtain informed consent. The survey was designed to allow participants—who were not comfortable or supportive of the Postvention concept—opportunities to exit without completing the 34 questions and without negative repercussions for doing so. At the end of the survey, participants were provided space to comment, make suggestions, share ideas, etc. Note: The survey tool was available for two weeks (Nov-Dec 2024).

## Interviews

Upon analyzing the survey data, the author shared a written report of the findings with Dr. Hatton. After making minor adjustments based on his mentor's edits, the author was advised to move on to Phase 2: Interviews. At this point, the author reached out to enlist two Subject Matter Experts (SME) with deeper backgrounds in qualitative research techniques and/or mental health. Both Luke Steinke, PhD (Eastern Illinois University: EIU) and Bryan Zoran, CEBS (International Foundation of Employee Benefit Plans: IFEBP) agreed to assist on this portion of the pilot study. With their guidance and input, the author designed an interview instrument in MS Word. This tool took into account constructive comments from the end of the aforementioned survey. There were 14 General interview questions that all participants were asked—one of which involved informed consent. Depending on how one self-identified, s/he would be asked an additional series of specific questions (typically 2-4) related to each of the five categories selected: Loss Survivor, Attempt Survivor, Construction Professional, First Responder, and Researcher/Practitioner. It is important to note that one participant could be asked 17 to 25 questions depending on the categories s/he selected above. In order to obtain face validity, the author worked with the two SMEs and Dr. Hatton in an iterative manner. All of which provided guidance regarding content and context. A recruiting email was sent to 22 potential participants describing the overall project and the interview process. Potential candidates were selected via a convenience sample based on referrals from the survey participants and attempted to maintain a balance in the aforementioned categories. Information was provided to these candidates regarding consent, privacy, and self-care. Fifteen (15) interview candidates opted-in. Once a potential participant agreed, a one-hour online semi-structured interview was scheduled typically weeks in advance. All interviews were recorded and transcribed in Teams (14) or Zoom (1). Each participant was sent a copy of the transcription for editing and/or clarifications. Afterwards, the author collated and then deidentified the 15 interviews for thematic analysis in parallel with one SME: Luke Steinke (LS). After which, these two reviewed the aggregated interview data utilizing a Reflexive Thematic Analysis framework: coding data, identifying patterns, and generating initial themes. The second step involved sharing each other's findings for review and comments. Followed by the third step of jointly revisiting and revising themes. Once agreement was obtained, each researcher utilized an Artificial Intelligence (AI) tool—LS (Claude) and the author (Gemini)—for the sake of separately comparing their findings to AI's findings. Upon further discussion, minor edits were made. The fourth step involved sending a draft of these findings to the second SME, Bryan Zoran (BZ) for his input. Upon receiving BZ's comments, the author edited the draft. In the fifth step, the author forwarded the aforementioned revised draft to Dr. Hatton for comments. Once feedback was received from Dr. Hatton, a final report pertaining to the interview phase was produced.

*Notes:* There was no crossover of participants between Phases 1 and 2. The interviews took place over a four-week span (May 2025). See Appendix C for discussions with Global Thought Leaders beyond the interview process.

## **Focus Group**

After making minor adjustments to the interview's findings—based on his mentor's edits—the author was advised to move on to Phase 3: Focus Group. The goal of this phase was to allow a sampling of participants from Phases 1 and 2 the opportunity to jointly examine the findings from the first two phases of this pilot project and, then, work in small groups to set the course for future actions. Recruiting potential candidates for this phase consisted of a convenience sample; it targeted participants from—in and around—the Greater St. Louis area. Eighteen (18) candidates were sent emails explaining the third phase of the pilot project's process: Focus Group. Twelve (12) responded and eight (8) showed up for a scheduled two-hour Focus Group session. Note: One of the participants allowed for the Focus Group meeting to take place at his office's meeting rooms. All participants signed in before the session began and this document included an informed consent notice. After reviewing the highlights from the findings in Phases 1 and 2, the room was then divided into two groups of four each to ensure a good mix of viewpoints from those in attendance (i.e., personal and professional backgrounds, loss survivors, labor v management, survey participant v interview participant, etc.). Directions were provided by the author to groups 1 and 2: four stations, 10 minutes per station, etc. Groups were instructed to enter each station and address/brainstorm the ideas around the identified theme for that specific station, based on their backgrounds, while acknowledging the results from this pilot study's survey and interview data just shared. Furthermore, when they entered a given station that the other group just exited, they could validate the other group's input with a check mark while still adding to their own input to that list. The topics at each station were based on the highlights from the literature review and key findings from Phases 1 and 2 and checked for face validity by LS. Each Station's topic was assigned, as follows:

**Station 1:** End Products

**Station 2:** Targeted Audiences

**Station 3:** What's Missing?

**Station 4:** Name It

Near the end of the Focus Group session, each group was provided an opportunity to share their input/insights regarding this exercise. The author drafted a report of the proceedings and shared it with the two aforementioned SMEs for input. Upon editing, a report was forwarded to Dr. Hatton for her inspection and comments. This focus group session was two hours long (August 28, 2025).

*Note:* Ethical approval for this pilot project was gained from Warnborough College's Institutional Review Board (WCI-1201).

## Findings

### Surveys and Interviews

The findings below will focus on the three aforementioned research questions:

1. Should the U.S. construction industry address the aftermath of suicides?
2. Is there a need for a postvention program that focuses on the acute phase?
3. If so, might a Peer Supporters serve this need?

With respect to research question 1 (RQ1): Should the U.S. construction industry address the aftermath of suicides? Both survey participants (SP) and interview participants (IP) indicated a very high need for the construction industry to intervene after a workplace suicide, with 95% of SP expressing that “the industry has an opportunity to act” and, from a thematic perspective, 100% of the IP pointing out that “the industry needed to take action.”

Regarding RQ2: Is there a need for a postvention program that focuses on the acute phase? Both SP and IP demonstrated a moderately high need for a postvention program in the construction industry, with 77% of SP indicating that “the industry should focus on the short term” and, from a thematic perspective, 73% of the IP insisting that “the emphasis should be in the 0-24 hour timeframe.”

With respect to RQ3: If so, might a peer support program serve as this model? While the SP indicated a high need (81%) to consider a peer support model to deliver postvention services in the construction industry but only “if trained”, from a thematic perspective, only 47% of the IP stated a moderate need “due to shared experience.”

*Notes:* From a demographic standpoint, the survey participants consisted of 36% females and 64% males while the interview participants consisted 53% females and 47% males. Some or all data pertaining to the surveys and interviews are available upon a reasonable request within the constraints of ethical clearance.

### Focus Group

Following is a thematic overview of topics from both groups’ input at the aforementioned four stations.

With respect to Station 1 (End Products), Group 2 identified seven items of which Group 1 agreed to all seven but added another five distinct items to consider. From a thematic perspective, both groups agreed that developing training programs for the field and office workers as well as a Train-the-Trainer program for Industry Specific Certified Peer Supporters were necessary as soon as possible. In addition, recommendations were made to produce articles and promotional activities to raise the awareness regarding the need for addressing suicide postvention in the construction industry with a focus on the acute phase. This links to the need for addressing the acute phase of postvention (Campbell et al. 2004) as well as the need to do so with trained peers in the literature (Ruocco et al. 2020) as well as findings regarding peer support (RQ2; RQ3) from the SP and IP in the previous section.

Regarding Station 2 (Targeted Audiences), Group 2 identified 13 items of which Group 1 agreed to all 13 but added a drawing to depict a concise web of these connections. From a thematic perspective, both groups agreed that the outreach of postvention services should include family, friends, co-workers (white- and blue-collar), unions, employers/managers/staff, management associations, schools, and First Responders. This links to the need to address postvention in the workplace in the literature (Causser et al., 2022) as well as findings regarding the need to address postvention in the construction industry (RQ1) from the SP and IP in the previous section.

With respect to Station 3 (What's missing?), Group 1 identified 2 items of which Group 2 agreed to both but added 14 more items. From a thematic perspective, both groups agreed that the outreach of postvention services should include family, friends, co-workers (white- and blue-collar), First Responders, schools, unions, and management associations but provided an opportunity to think beyond the details so far presented. While not directly related to RQ1, RQ2, or RQ3, this station allowed for focus group participants to reflect on and discuss related issues of personal concern as well as details regarding the potential for customizing an existing evidence-based program from another sector for this industry, funding, rollout, and program sustainability. This station focused on the future operational needs related to this pilot study.

Regarding Station 4 (Name It), Group 1 identified seven items of which Group 2 did not agree to any of those items. However, they added five more items. From a thematic perspective, both groups did include a few suggestions that touched on life and living in the proposed program titles. While not directly related to RQ1, RQ2, or RQ3, this station allowed for focus group participants to reflect on and discuss an important aspect of marketing: branding. As such, LOSS and TAPS are examples of catchy titles (Campbell et al. 2004; Ruocco et al. 2020 ).

*Notes:* From a demographic standpoint, the focus group participants consisted of 13% females and 87% males. Some or all data pertaining to the focus group are available upon a reasonable request within the constraints of ethical clearance.

## Discussion

The analysis of the data from the surveys, interviews, and focus group pertaining to the three research questions provides support for moving ahead with implementing a program that addresses suicide postvention in the U.S. construction industry. The work of Causser et al. (2022) suggests that if management does not act after a workplace related suicide, a vacuum exists and can cause fear and anger among staff. Without proper guidance from leadership, this can be cause for a spike in 'suicide contagion' related deaths affiliated with the recent suicide loss. Herein, family, friends, or employees already struggling with mental health issues may move towards carrying out their own suicide. In addition, the findings in this pilot study's RQ1 further substantiate the need to address the need for a postvention program in the construction industry. A related theme and comment from the interview process worth noting is as follows, Action: "I would say the industry has more than an opportunity to act...I would say they have an obligation."

While a holistic postvention program, like TAPS addresses the entire postvention eco-system, this pilot study seeks to more precisely focus on the acute phase of postvention in the construction industry—as TAPS refers to as the Stabilization phase (Ruocco, 2020). To this end, Campbell

et al.'s (2004) observation that people who receive immediate peer support, after a suicide death of a loved one, tend to seek therapy in less than 60 days as opposed to more than four years for those who do not. In so doing, this serves as a protective factor and, thus establishes a connection between the three legs of the Suicide Triangle. In doing so, postvention becomes prevention! In addition, the findings in this pilot study's RQ2 support the need to focus on the acute phase of postvention in the construction industry. A related theme and comment from the interview process worth noting is as follows, Emphasis on the 0-24 hour timeframe: "I think touchpoints need to happen within the first 24 hours."

While results for RQ3 appear not to be as fully supported as in RQ1 and RQ2, they do reveal a high to moderately high support for imploring the use of peers to deliver postvention support services. It is important to note that while peers play a large role in both the Bluehats and TAPS postvention programs, a mix of trained peers and other related professionals round out intervention and postvention teams, respectively (King et al. 2025; Ruocco, 2020). There are two related themes and comments from the interview process worth noting is as follows, Shared experience/ Understanding: "There's just no substitute for someone who gets it and has been there."; and Immediate support/Presence: "I think if you've got a properly trained peer support program, it can be far more immediate and far more effective than even a mental health professional."

### **Conclusion**

With annual suicide rates in the U.S. nearing the 50,000-mark, and in light of the crisis within the construction industry, this author set out to explore how to better address the acute phase of suicide postvention in this industry—especially in light of the fact this sector is losing >1 worker to suicide approximately every 2 hours—each day, every day of the year! Guidance and input were sought by an array of subject matter experts across 5 countries. Each step of this process was overseen by the author's mentor—who over the past several decades has obtained a steeped academic and professional background in mental health counseling. By undertaking a mixed-methods approach, this author was able to tweak each following phase with lessons learned from the previous phase.

The 100% (64/64) return rate of Phase 1 Surveys indicated that the participants were interested in this under-researched topic. Key findings addressed the 3 research questions pertaining to need, timing, and method of delivery. Wrap-up comments from this phase assisted the author in sculpting the Interview instrument in Phase 2 with the assistance of two SMEs having backgrounds in qualitative methods and mental health. This allowed (15) participants to identify in more than one category and, thus, provide more robust discussions than the Survey instrument. As such, these findings helped in the development of the Phase 3 Focus Group. In an attempt to cross pollinate findings between the first two phases, a balanced mix of participants were invited to participate in a 2-hour (in-person) session with the intention of laying out a 'road map' of End Products. As a result, this article serves as the first step in a long journey over the next year, wherein, guidebooks and training will be developed for specific audiences (rank & file field/office workers vs Peer Specialists) as well as a training video strategically housed on a local university's website to reach the masses.

By incorporating the following findings from this pilot study:

1. Take action now to address suicide postvention in the construction industry;
2. Focus on the acute phase following an attempt or death; and
3. Utilize trained Peer Specialists to fill this void;

this author argues that postvention efforts undertaken will assist in completing the suicide triangle connections between prevention and intervention. Thus, allowing for a more comprehensive and un-siloed approach to addressing the suicide crisis—specifically in the acute phase in the aftermath of a suicide death. Regardless of the industrial sector—military, healthcare, or construction—it is time to acknowledge that Postvention is Prevention (Be Connected Program, 2025). To this end, McDonnell et al. (2020, p. 356) proclaim, “The development of evidenced-based suicide bereavement training is in its infancy but is a key aspect of suicide prevention, requiring postvention policies worldwide to support it.”

In closing, the author recognizes the limitations regarding this pilot study that is focused on acute suicide postvention in the U.S. construction industry. In order to obtain more data to support generalizing findings, it will be necessary for further research into this topic which includes more diversity in people, sectors within the industry, and geographic locations. While more recent efforts have been made to address postvention in this industry (i.e., AFSP’s After a Suicide Toolkit, Vital Cog’s Postvention Guidance, and MATES’ Response Training Program), this original work is focused on the hours/days vs weeks, months, or years following a suicide incident. Why? Because loss survivors tend to be in shock and disbelief and need immediate support in order to help stabilize the space around themselves, loved ones, and co-workers, etc. so as to more immediately prevent suicide contagion while gradually and compassionately guiding survivors towards the grieving and post-traumatic growth phases of suicide postvention. As such, the TAPS (military) postvention model can serve as the framework for the U.S. construction industry to adopt and address this current unmet need.

### **Acknowledgements**

The author wishes to thank those kind people who shared their time and talents to bring this research project from concept to reality. First and foremost, Dr. Pamela Hatton was an important asset in providing guidance throughout the entire process. In addition, the author tips his hat to Luke Steinke, PhD and Bryan Zoran, CEBS who both served as SMEs and readers at critical stages of this three phase process. To all of the survey and interview participants, your insights, thoughtfulness, and kindness will be shared in various formats to assist others. To the global thought leaders, I am grateful and hope to return the generosity in the not too distant future. Finally, to the author’s loving wife and children, the past +9 years have taught us many lessons—most of all, how our resilience can benefit others by turning tragedy into triumph!

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## APPENDIX A

### **Mates in Mind** (General Workplaces)

Post-Suicide Response Guide and Continuum of Survivorship.

This UK-based charity provides frameworks for businesses to manage trauma and identify how varying levels of exposure affect employees.

- **Preventative Focus:** Enables mental health support before crisis points occur through industry partnerships.
- **Survivorship Levels:** Categorizes impact from “Suicide Exposed” (aware) to “Suicide Bereaved” (intense, long-term grief).
- **Response Tools:** Prepares businesses for the traumatic event of a suicide to ensure effective change.

For more information:

Mates in Mind (2025). Post-suicide response guide. <https://www.matesinmind.org/media/uhij1f3p/post-suicide-response-guide.pdf>

### **K-12 Schools**

Program: After a Suicide: A Toolkit for Schools

A comprehensive guide providing practical tools and reliable information to help schools protect students and return to their educational mission.

- **Stigma Reduction:** Recommends treating all student deaths equally to avoid reinforcing negative stigmas surrounding suicide.
- **Contagion Management:** Focuses on avoiding the glamorization of death while acknowledging adolescent resilience and coping capacity.
- **Holistic Approach:** Accounts for cultural differences and recognizes that suicide often stems from multiple complex causes.

For more information:

American Foundation for Suicide Prevention and Suicide Prevention and Resource Center. (2018). After a suicide: A toolkit for schools (2nd edition). <https://sprc.org/wp-content/uploads/2022/12/AfteraSuicideToolkitforSchools-3.pdf>

## **Veterinarians**

### VetLife Postvention Support

A Scotland-based program combining public health, crisis management, and peer experience to support the veterinary community.

- **Peer Engagement:** Highlights that active engagement with usual support mechanisms is most critical in the first month.
- **Core Support:** Relies on active, non-judgmental listening and empathy to help colleagues navigate the professional realm.
- **Communication:** Stresses the need for clear, honest, and flexible communication following a workplace suicide.

For more information:

Allister, R. (2022). Suicide postvention guidance for veterinary workplaces. VetLife. [https://www.vetlife.org.uk/wp-content/uploads/2022/05/Suicide-postvention-guidance\\_16May22.pdf](https://www.vetlife.org.uk/wp-content/uploads/2022/05/Suicide-postvention-guidance_16May22.pdf)

## APPENDIX B: Research Tour

Since the author has been intensely studying the spectrum of Suicide Prevention/Intervention/Postvention topics for nearly a decade, he has had opportunities to learn from some of the leading experts in the Suicidology field. Often these connections were made via follow-up emails after participating in related webinars. One such encounter was with Dr Susie Bennett via the Karolinska Institutet's platform. Days prior to her defending her doctoral dissertation, she presented on the topic of "Why men die by suicide" in the late fall, a few years ago. Susie opened the door to a variety of other researchers in this space for the author. This led to the author visiting Scotland and England in early June 2025 for training, research, and presenting opportunities.

One such contact was Dr. John Whitebrook at the University of West London. He lost his 24-year-old son to suicide years ago and has been researching the topic of postvention for men. Dr. Whitebrook invited the author to a suicide researchers' conference in Glasgow, Scotland on June 2-3, 2025. This two-day event was hosted by Professor Rory O'Connor—a leading Suicide Prevention researcher. At this event, the author was introduced to Dr. Rosie Allister. Dr. Allister is a veterinarian by trade who went on to become a suicide researcher.

Another contact made was with Dr. John Gibson via Dr Bennett. Dr. Gibson is located in Dunblane, Scotland. He lost his 24-year-old son to suicide a few years ago as well. His family created The Canmore Trust (TCT) in honor of their son, Cameron, who was also a veterinarian. Among other services, TCT is a charity that offers Postvention trainings for the general public and workplace. Dr. Gibson invited the author to attend their two-day training for Workplace Postvention on June 4-5, 2025.

From there, the author went to Canterbury, England to address a group of stakeholders at Canterbury Cathedral hosted by Warnborough College. Efforts were made months in advance to invite a variety of Suicide Prevention organizations (i.e., Samaritans, Mates in Mind, St John Ambulance, Lighthouse Construction Industry Charity), in the near-London area, to participate. Herein, the author presented findings from Phase 1 of this pilot study.

### APPENDIX C: Discussions with Global Thought Leaders

During the author's journey to obtain answers to the three research questions proposed in this study's Introduction, a number of names kept re-appearing as more connections were made during the Literature Review process. The author via email, upon consent, arranged one-on-one Teams recorded discussions—each lasted approximately one-hour. Below are brief summaries captured following the Focus Group phase.

**Dr. Rosie Allister** was the keynote speaker at a suicide research conference at the University of Glasgow on June 3, 2025. She did not participate in Phase 1 or 2 of this study. Her story intrigued the author as she essentially researched, designed, developed, and launched a Postvention project for veterinarians in 2009. The author shared this study's findings that focused on research questions 1-3 from Phase 1 and Phase 2 with Dr. Allister. And, followed up by asking for her guidance in preparing End Products. Here are some suggested highlights:

1. Structured peer support was helpful in her work
2. Training for volunteers covers three 2.5-hour modules spread over time to provide reflection
3. Help must be available immediately
4. Use the 'paired' model for visits
5. Be flexible
6. Be ready for 'grief' responses
7. Be aware of 'space' where person died
8. If you provide Critical Incident Response, you may trigger PTSD  
\*Use licensed mental health professionals
9. Listen vs Fix
10. Look for those 'missed' out and with elevated risks
11. Do not assume who 'needs' help
12. Consider uneven burden (impact) based on staff positions
13. Management needs to set up Postvention team before an incident
14. Have a low threshold for employees seeking help

**Dr Carla Stumpf Patton** is the Senior Director of TAPS, a researcher, and loss survivor. She did participate in Phase 1 of this study. Her doctoral work in the early 2010s contributed to the development of the military's TAPS Suicide Postvention program. The author shared this study's findings that focused on research questions 1-3 from Phase 1 and Phase 2 with Dr. Stumpf Patton. And, followed up by asking for her guidance in preparing End Products. Here are some suggested highlights:

1. TAPS is not linear or in stages—it is meant to be fluid
2. When to provide assistance: The sooner the better
3. Third Phase: Post Traumatic Growth is on a spectrum based on each person
4. Leading with peers builds trust
5. By offering services you may close the gap and reduce risks
6. Don't give up
7. Ask: Focus on 'micro' needs
8. Develop a guidebook and toolkit
9. Be mindful of burnout and self-care

**Dr. Anna Mueller** is a professor, sociology researcher, and author. She did not participate in Phase 1 or 2 of this study. Her recent co-authored book, *Life under pressure*, intrigued the author because it addressed K-12 suicides but, more importantly, completed the suicide triangle mentioned earlier. The author shared this study's findings that focused on research questions 1-3 from Phase 1 and Phase 2 with Dr. Mueller. And, followed up by asking for her guidance in preparing End Products. Here are some suggested highlights:

1. Tailor the End Products to the context of participants
2. Don't treat suicide as taboo
  - \*Talk about it
  - \*Don't promote myths
  - \*Offer onsite help
3. Utilize trained peer supporters
4. Grief takes a toll—It reshapes us
5. Consider 'safer' memorializations
6. Avoid too much sharing (details)
7. Respect grieving family's privacy but allow space to discuss suicide

8. Develop & distribute a one-pager

\*What is Postvention

\*Why it matters

\*What can you do to assist

**Dr. Rory O'Connor** is a professor, researcher, and author. He did not participate in Phase 1 or 2 of this study. His book, *When it is darkest*, discusses factors that lead people to consider suicide (thoughts vs behaviors) and was recommended by two of the three researchers mentioned above. The author shared this study's findings that focused on research questions 1-3 from Phase 1 and Phase 2 with Dr. O'Connor. And, followed up by asking for his guidance in preparing End Products. Here are some suggested highlights:

1. Best mode of delivery is co-created with all stakeholders
2. Content should be developed based on evidence, evaluated to 'do no harm', reviewed and tweaked
3. Consider how proper support will be in place
4. First 24 hours will require professional assistance
5. Embed sensitivity and compassion in training
6. Start small and adopt continuous improvement approach
7. Look at other models
8. Be mindful of self-care

**Dr. Sharon McDonnell** is a researcher, trainer, and consultant who led the 4-year PABBS (Postvention Assisting those Bereaved by Suicide) research study at the University of Manchester (England) and then translated those findings into evidence-based training. She did not participate in Phase 1 or 2 of this study. The author shared this study's findings that focused on research questions 1-3 from Phase 1 and Phase 2 with Dr McDonnell. And, followed up by asking for her guidance in preparing End Products. Here are some suggested highlights:

1. With everything bad in life, there is some good
2. Post-traumatic growth allows us to make meaning out of something that is meaningless
3. Without proper training we do nothing or say the wrong things
4. It is important to develop guidelines for employees in the workplace but we need additional guidelines for managers

5. It is powerful that:
  - a. you are bereaved by suicide
  - b. you are from the construction industry
6. Industry peers are valuable vs trained ‘professionals’ without related-experiences
7. Dig into the construction deaths’ data: Falls may sometimes be intentional
8. Consult the newly created British Standards Institution: BS 30480(2025) for addressing suicides in the workplace (prevention/intervention/postvention)

**Nicholas Thompson** is the CEO of MATES in Queensland, Australia and a PhD student who played a key part in the development of the MATES (postvention) Respond Training Program. He did not participate in Phase 1 or 2 of this study. The author shared this study’s findings that focused on research questions 1-3 from Phase 1 and Phase 2 with Mr. Thompson. And, followed up by asking for his guidance in preparing End Products. Here are some suggested highlights:

1. Program must be flexible as needs for each person differ
2. When it comes to construction, Peer Support is most effective approach
3. Peer Supporters (Responders) must take a variety of training courses to help ensure Mental Health literacy (i.e., safeTALK, PFA, ASIST, etc.)
4. A need for more ‘practice’ conversations to better prepare Responders for reality
5. Important to provide assistance to Responders after the event (i.e., self-care, etc.)
6. Access to Mental Health professionals for clinical matters whether they are immediate or long term for survivors and/or Responders

For more information:

Biggs, A., Townsend, K., Loudoun, R., Robertson, A., Mason, J., Maple, M., Lacey, J., & Thompson, N. (2024). Towards as evidenced-based critical incidents and suicides response program in Australian construction. *Buildings*, 14(2797), 1-27. <https://doi.org/10.3390/buildings14092797>

# Caregiving, Wellbeing, and Community Support Systems for the Elderly in Southeast Nigeria

**Chinaemerem Clarice Orji**

**Uju Bridget Ejinkeonye**

**Anothonia Omanebu Obeta**

**&**

**Ngozi Blessing Mariagoretti Asadu**

## **Abstract**

Healthy ageing in Southeast Nigeria is increasingly shaped by the quality of caregiving and community support systems, as traditional kinship structures weaken under sustained economic and social pressures. This study examined the role of family caregiving, faith-based organisations, and community associations in sustaining elderly wellbeing across the five Southeast states of Nigeria: Abia, Anambra, Ebonyi, Enugu, and Imo. A mixed-methods design was adopted, combining surveys, Key Informant Interviews (KIIs), and Focus Group Discussion Guides. Results revealed that family caregiving, faith-based organisations, and community association membership significantly enhanced psychosocial wellbeing, while institutional support remained inadequate. The study concludes that these systems are indispensable yet under-resourced and recommends their integration into formal policy frameworks through caregiver training, cash transfers, formalisation of community associations, and structured engagement of faith-based organisations in psychosocial care.

**Keywords:** caregiving, community support, elderly wellbeing, healthy ageing, Southeast Nigeria

## Introduction

Ageing is both a biological transition and a social phenomenon, representing a critical stage in the human life course (United Nations, 2020; UNDESA, 2023). In sub-Saharan Africa, population ageing is accelerating due to declining fertility rates and longer life expectancy, unfolding within contexts of poverty, weak health systems, and limited social protection (World Health Organization [WHO], 2017, 2020). Nigeria, Africa's most populous country, is particularly affected. Projections indicate that by 2050, individuals aged 60 years and above will account for nearly 6% of the national population, compared to approximately 3% today (National Population Commission [NPC], 2020).

The Southeast region of Nigeria, comprising Abia, Anambra, Ebonyi, Enugu, and Imo States, is predominantly inhabited by the Igbo ethnic group and is characterised by strong kinship systems that emphasise respect for elders, communal living, and family-based caregiving (Nwachukwu & Eze, 2020). Historically, ageing was integrated within extended family structures, with elders revered as custodians of wisdom and culture. However, economic hardship, rural–urban migration, and globalisation have weakened intergenerational bonds and disrupted caregiving norms (Olajide, 2021; Onu & Nwafor, 2022). As younger generations migrate to urban centres or abroad, many elders are left behind, facing heightened risks of social isolation, neglect, and unmet healthcare needs (Akintayo & Olorunsola, 2018; Eboh & Nnamani, 2021).

These evolving caregiving realities also carry important implications for Technical and Vocational Education and Training (TVET), particularly within home economics, community health support, social care, and community-based welfare practices. Contemporary TVET scholarship increasingly emphasises community-responsive and care-related competencies that promote social wellbeing and sustainable livelihoods (UNESCO-UNEVOC, 2020). In many African contexts, caregiving knowledge is transmitted through informal and intergenerational learning systems rooted in communal responsibility and indigenous support traditions (Aboderin, 2019). Consequently, caregiving represents not only a social responsibility but also a culturally embedded form of community-based vocational practice relevant to workforce preparation, community support services, and sustainable social protection systems. However, despite the social and vocational significance of these indigenous caregiving systems, elderly wellbeing in Southeast Nigeria continues to be undermined by broader structural and infrastructural deficiencies that weaken both formal and informal support mechanisms.

Beyond healthcare and financial constraints, infrastructural barriers further undermine elderly wellbeing. Most public and private buildings are not designed with ageing in mind, resulting in limited ramps, elevators, safe pedestrian pathways, and accessible transport systems (Ugwu & Ene, 2025). Caregivers and community-based support systems therefore remain central to elderly survival in Southeast Nigeria. Family members, neighbours, religious organisations, and local associations provide the bulk of care, yet they are often under-recognised and under-resourced (Okoye & Asa, 2019; Ikeorji & Ubani, 2024). This study investigates how caregiving and community support systems influence elderly wellbeing, highlighting both their strengths and the systemic gaps that undermine their sustainability.

## Theoretical Background

This study is guided by three complementary frameworks. Continuity Theory (Atchley, 1989) posits that successful ageing depends on maintaining consistency in social roles and values; in Southeast Nigeria, caregiving and community support preserve cultural continuity by sustaining elders' roles within family and community. Activity Theory (Havighurst, 1961) explains how active participation in caregiving networks and community associations enhances psychological wellbeing. Political Economy Theory of Ageing (Estes, 1979) situates caregiving outcomes within broader socio-economic structures, highlighting the inadequacy of pensions and healthcare services that force the elderly to depend on informal systems. Together, these theories provide a robust framework for examining how caregiving and community support systems influence elderly wellbeing in Southeast Nigeria.

## Review of Related Literature

### *Caregiving and Elderly Wellbeing in African Contexts*

Caregiving within African societies carries cultural, spiritual, and moral dimensions that transcend functional assistance. In Nigeria, the Igbo cultural ethos rooted in collective responsibility constructs caregiving as a moral obligation rather than a discretionary act (Eze, 2020). Ejinkonye (2019) further emphasises that caregiving practices in Southeast Nigeria are not only shaped by kinship obligations but also by evolving socio-economic realities, underscoring the need for policy frameworks that recognise informal caregivers. Globally, the World Health Organization (2021) identifies caregivers as strategic partners in promoting functional ability and emphasises community-based systems that integrate health services with social participation. Empirical studies reveal that elderly persons increasingly rely on informal caregivers, including neighbours, religious groups, and social clubs, who fill the gaps left by overstretched families (Akor & Eboh, 2022). These caregivers, though largely untrained, provide psychosocial support, companionship, and minor health assistance, serving as the connective tissue of community-based ageing resilience.

In contrast to Western contexts where formal long-term care institutions are the norm, Southeast Nigeria's eldercare ecosystem is almost entirely informal (Lundberg, 2017). This reliance on informal systems is both a strength and a vulnerability: it preserves cultural continuity but exposes caregivers to burnout, financial strain, and lack of professional support. South Africa's integrated home-based care model, which provides training and compensation to community caregivers, demonstrates how institutional investment can transform informal care into a sustainable component of the health system (Lloyd-Sherlock, 2020).

### *Faith-Based Organisations and Community Associations*

Religious institutions occupy a uniquely powerful position in Southeast Nigeria's social fabric. Churches and mosques provide emotional sanctuaries and organise welfare committees that deliver food, healthcare visits, and spiritual counselling to elderly members (Krause, 2021; Okoye, 2020). Some parishes have formalised Elderly Care Ministries that coordinate home visits and income-generating projects for older parishioners. Community associations, including age-grade unions, cooperatives, and peer networks, reduce loneliness, provide financial solidarity, and reinforce

cultural identity (Mbam et al., 2022; Omosefe & Mukhtar, 2023). Holt-Lunstad et al. (2015) demonstrated that social isolation increases mortality risk comparable to smoking or obesity, underscoring why these community structures are life-sustaining rather than supplementary.

### ***Policy and Institutional Gaps***

Despite the documented value of informal caregiving, Nigeria's formal welfare infrastructure for the elderly remains deeply inadequate. The National Policy on Ageing (Federal Ministry of Women Affairs, 2021) has been revised but remains largely unimplemented at the subnational level. Most primary healthcare centres lack trained geriatric personnel, essential drugs, and diagnostic capacity (Onwujekwe et al., 2020). The majority of elderly persons depend on informal labour and family remittances for survival, as pension systems primarily benefit retired civil servants and exclude the large informal workforce (Akor & Eboh, 2022). These structural deficits force community and faith-based organisations to perform welfare functions that belong to the state, yet they do so without formal recognition or resource allocation.

### ***Research Questions and Hypothesis***

The following research questions guided the study:

**RQ1.** In what ways do caregiving practices influence elderly wellbeing in Southeast Nigeria?

**RQ2.** How do community support systems sustain elderly wellbeing?

**RQ3.** What gaps exist between informal caregiving and institutional support?

**H<sub>01</sub>:** Caregiving and community support systems do not significantly influence elderly wellbeing.

## **Methodology**

### ***Research Design***

A descriptive survey design was adopted, complemented by qualitative methods including Key Informant Interviews and Focus Group Discussion Guides. This mixed-methods approach provided both quantitative breadth and qualitative depth, ensuring triangulation of findings.

### ***Population, Sample, and Sampling***

The study population comprised elderly people aged 60 years and above residing across the five Southeast states. Using Taro Yamane's formula with  $N = 3,800,000$  and  $e = 0.05$ , a sample size of 400 was computed. A multistage sampling technique was employed to ensure representation across rural and urban contexts. Churches, pension offices, and community associations served as primary points of contact.

### ***Instruments and Data Collection***

Three instruments were used. The structured SEHAWESN questionnaire was administered both physically and online via Google Forms. KIIs were conducted with health workers, social welfare officers, and community leaders. FGDs were organised with elderly men and women in rural and urban settings. Reliability was established using Cronbach's Alpha, yielding coefficients of 0.82 for the questionnaire and 0.79 for the FGD guide, indicating high internal consistency.

### ***Ethical Considerations***

Voluntary participation, anonymity, and confidentiality were strictly observed. Written and verbal informed consent was obtained from all participants prior to data collection. Respondents were informed that their information would be used solely for academic purposes and that they could withdraw at any stage without penalty. The study complied with the Declaration of Helsinki and the APA Ethical Principles on Research and Publication.

### ***Data Analysis***

Quantitative data were analysed using descriptive statistics (mean, SD) and independent samples t-tests at the 0.05 significance level, with a criterion mean of 2.50. Qualitative data from KIIs and FGDs were transcribed, coded, and thematically analysed following Braun and Clarke's (2006) six-phase framework.

### ***Results***

Of 400 questionnaires administered, 350 were valid, yielding a response rate of 87.5%, which Wyse (2012) considers excellent at the 95% confidence level. Table 1 presents the descriptive results for caregiving and community support systems.

**Table 1:** Mean Ratings of Caregiving and Community Support Systems Influencing Elderly Wellbeing (n = 350)

Support System	Mean	SD	Decision
Family caregiving	3.72	0.41	Accepted
Faith-based organisations	3.68	0.42	Accepted
Community associations	3.65	0.44	Accepted
Peer group participation	3.59	0.43	Accepted
Storytelling / mentorship	3.51	0.45	Accepted
Institutional support	2.89	0.47	Rejected

*Note.* Source: Field Survey, 2025. Criterion mean = 2.50.

Table 1 shows that all informal and community support indicators were accepted, with family caregiving receiving the highest rating ( $M = 3.72$ ,  $SD = 0.41$ ), followed by faith-based organisations ( $M = 3.68$ ,  $SD = 0.42$ ) and community associations ( $M = 3.65$ ,  $SD = 0.44$ ). Institutional support was the only item rejected ( $M = 2.89$ ,  $SD = 0.47$ ), confirming the dominance of informal systems. Table 2 presents the hypothesis test.

**Table 2:** Independent Samples t-Test Results for  $H_{01}$ : Caregiving and Community Support Systems and Elderly Wellbeing

Variable	n	Mean	SD	t-value	p-value
Caregiving & community support	350	3.61	0.43	13.84	< .001

*Note.* Source: Field Survey, 2025.

Table 2 shows  $t(349) = 13.84$ ,  $p < .001$ .  $H_{01}$  is therefore rejected. Caregiving and community support systems significantly influence elderly wellbeing in Southeast Nigeria.

## Discussion

The rejection of  $H_{01}$  ( $p < .001$ ) confirms that caregiving and community support systems significantly influence elderly wellbeing in Southeast Nigeria. This finding aligns with Nwakoby et al. (2019) and WHO (2021), which identified community-based systems as strategic partners in sustaining functional ability among older persons. Ejinkonye (2019) similarly argued that caregiving practices in Southeast Nigeria are deeply embedded in socio-cultural obligations but increasingly strained by economic realities, reinforcing the need for policy frameworks that recognise and support informal caregivers.

### ***Family Caregiving***

Family caregiving received the highest mean rating ( $M = 3.72$ ), reflecting the enduring Igbo cultural ethos of filial responsibility. Adult children, spouses, and extended relatives provide daily assistance, emotional support, and financial aid. However, caregiving is gendered, with women disproportionately bearing the burden, often at the cost of their own health and economic stability (Okoye & Asa, 2019; Ikeorji & Ubani, 2024). This mirrors global evidence that women carry the majority of unpaid care work (Warburton & Goozee, 2021). FGDs captured caregiver exhaustion plainly: “We care with love, but we are tired.” Countries such as Brazil and Thailand have introduced caregiver subsidy programmes that stabilise household finances and reduce burnout (Lloyd-Sherlock, 2020); similar mechanisms warrant adoption in Southeast Nigeria.

### ***Community Associations***

Age-grade unions, cooperatives, and peer networks reduce loneliness, provide financial solidarity, and reinforce cultural identity (Mbam et al., 2022; Omosefe & Mukhtar, 2023). Their mean rating of 3.65 ( $SD = 0.44$ ) affirms their psychological and social value. These structures function as the connective tissue of community-based ageing resilience, particularly where formal welfare systems are absent.

### ***Faith-Based Organisations***

Churches and mosques offer spiritual comfort, home visits, and health outreach, enhancing resilience and belonging (Krause, 2021; Okoye, 2020). Some parishes in Anambra and Imo States have established Elderly Care Ministries that coordinate home visits and income-generating projects for older parishioners. These informal models echo Japan’s Silver Human Resource Centres, where retirees maintain purpose through structured community contribution (Plouffe & Kalache, 2017). The qualitative data captured their significance vividly: “Ndi Sister Bia, Obi Adi Anyi Nma” (When the sisters visit, we are pleased).

### ***Cultural Practices***

Storytelling and mentorship integrate elders into community life, preserving cultural continuity and reducing caregiver burden (Okoye & Asa, 2020). These practices sustain identity and purpose in contexts where formal social engagement is limited. Elders expressed longing for cultural festivals, folklore, and opportunities to mentor youths, indicating that cultural inclusion is as important as material care in sustaining dignity.

### ***Systemic Gaps and Challenges***

Despite their significance, informal caregiving and community support systems face serious structural constraints. Caregivers lack training and financial compensation, community organisations operate

without institutional backing, and the Nigerian state provides minimal elder welfare (Onwujekwe et al., 2020; Hailu et al., 2025). Institutional support was the only item rejected in Table 1 ( $M = 2.89$ ), confirming the policy vacuum. Without formalisation and resourcing, these systems remain fragile and risk collapse under continuing demographic and economic pressure.

These evolving caregiving realities also carry important implications for Technical and Vocational Education and Training (TVET), particularly within home economics, community health support, social care, and community-based welfare practices. Contemporary TVET scholarship increasingly emphasises community-responsive and care-related competencies that promote social wellbeing and sustainable livelihoods (UNESCO-UNEVOC, 2020). In many African contexts, caregiving knowledge is transmitted through informal and intergenerational learning systems rooted in communal responsibility and indigenous support traditions (Aboderin, 2019). Consequently, caregiving represents not only a social responsibility but also a culturally embedded form of community-based vocational practice relevant to workforce preparation, community support services, and sustainable social protection systems. However, despite the social and vocational significance of these indigenous caregiving systems, elderly wellbeing in Southeast Nigeria continues to be undermined by broader structural and infrastructural deficiencies that weaken both formal and informal support mechanisms.

This study contributes to global caregiving discourse by demonstrating how indigenous systems rooted in kinship, religion, and culture sustain wellbeing despite structural barriers, contrasting with the Western reliance on institutional long-term care (Lundberg, 2017). The evidence calls for a shift from reactive, informal arrangements toward coordinated, rights-based systems that recognise and resource caregivers and community networks.

### ***Contribution to Knowledge***

This study contributes to African ageing scholarship by demonstrating how caregiving and community support systems sustain elderly wellbeing within contexts of economic hardship, weak institutional welfare structures, and changing family relations in Southeast Nigeria. The findings show that caregiving extends beyond private family obligation and functions as a culturally embedded system of psychosocial support, home management, health assistance, and intergenerational responsibility sustained through indigenous community structures.

The study further contributes to TVET scholarship by positioning caregiving and community support within broader discussions of indigenous vocational traditions, community-responsive skills development, and socially oriented workforce preparation in African contexts. The evidence suggests that many caregiving activities already involve practical competencies associated with home economics, community health support, and social welfare practice, yet these competencies remain largely informal and insufficiently integrated into formal vocational training systems. By exposing this gap, the study foregrounds the need to recognise caregiving and elder-support services as emerging areas of vocational relevance within contemporary African societies.

In addition, the study provides context-sensitive insights that connect ageing, community wellbeing, social protection, and vocational capacity development. In doing so, it offers a multidisciplinary contribution relevant to researchers, policymakers, and practitioners concerned with sustainable care systems, community development, and inclusive workforce preparation in Africa.

## Conclusion

This study examined the role of caregiving and community support systems in sustaining the wellbeing of the elderly in Southeast Nigeria. The findings demonstrate that while elders remain symbolically respected within Igbo society, they face increasing vulnerability due to weakening family support systems, inadequate healthcare provision, and economic insecurity. Informal caregivers, faith-based organisations, and community associations collectively fill the gaps left by limited institutional welfare structures, yet they continue to operate under considerable financial, emotional, and institutional strain. The erosion of traditional caregiving structures, coupled with inadequate government intervention, places many elderly persons at heightened risk of social isolation, neglect, and poverty.

Despite these challenges, the resilience of the elderly and their continued role as custodians of cultural heritage remain evident. The findings further suggest that caregiving should no longer be viewed solely as an informal domestic responsibility but also as an emerging area of vocational relevance within African societies. As demographic pressures intensify, integrating caregiving and community support competencies into TVET and community-based skills development programmes may strengthen both workforce preparedness and sustainable elderly care systems. Consequently, there is an urgent need for policies that integrate traditional caregiving values with modern social protection frameworks. By addressing healthcare gaps, expanding pension coverage, training and supporting caregivers, and formalising the role of community and faith-based organisations, Southeast Nigeria can promote ageing systems that prioritise dignity, inclusion, and sustainable community wellbeing.

## Recommendations

Based on the findings of this study, several recommendations are proposed to strengthen caregiving and community support systems for the elderly in Southeast Nigeria. Pension schemes should be expanded to include informal sector workers, and the National Policy on Ageing must be fully implemented with adequate funding and accountability, particularly since institutional support was rated lowest in this study. Healthcare access should be improved through community-based programmes, mobile clinics, and subsidised medications tailored to elderly needs, alongside training of community health extension workers in geriatric care. Support for caregivers and community networks is essential, and this can be achieved by providing training, stipends, and respite services for unpaid family caregivers, especially women, while formally integrating faith-based organisations and NGOs into welfare delivery. Social inclusion should also be prioritised by creating structured platforms for intergenerational interaction through cultural festivals, mentorship initiatives, and community dialogues that preserve elder identity and purpose. Finally, further research is needed to investigate gender differences in caregiving, the impacts of urbanisation, and the effectiveness of existing social welfare and health insurance programmes, with continuous monitoring to ensure that interventions remain responsive to evolving demographic pressures.

### *Limitations and Suggestions for Further Research*

This study has several limitations that should be considered when interpreting its findings. First, the cross-sectional design limits causal inference; the data captures a snapshot in time and cannot establish the direction or trajectory of change in caregiving and community support over time. Second, respondents were recruited through churches, pension offices, and community associations, which may under-represent the most marginalised elderly people who are socially isolated, bedridden, or without family contact. Third, the use of self-reported data introduces the possibility of social desirability bias, particularly in responses about family caregiving quality.

Future research should adopt longitudinal designs to track how caregiving quality and community support evolve as demographic pressures intensify. Purposive sampling of vulnerable sub-groups, including childless elders, widows living alone, and those without pension income, would provide deeper evidence on the experiences of the most at-risk populations. Further studies should evaluate the effectiveness of faith-based eldercare ministries as scalable models of community support and investigate how digital inclusion through mobile phones and community radio extends care networks to isolated elderly people. Comparative studies across Nigeria's geopolitical zones would reveal regional variations in caregiving norms and inform context-specific policy design.

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# **Assessment Strategies Used by Lecturers in Report 191 Engineering Vocational Subjects at TVET Colleges**

**Nduvazi Mabunda**

**Moses Makgato**

**&**

**Jerald Hondonga**

## **Abstract**

The Technical and Vocational Education and Training (TVET) sector has the mandate to apply different assessment strategies to students' progress and achievement. The purpose of this study was to investigate the way lecturers applied assessment strategies in Report 191 Engineering vocational subjects at TVET colleges. The study was qualitative in nature and used semi-structured interviews coupled with observations to collect data. Only Report 191 engineering lecturers were selected to participate in the study, including one Senior Lecturer and Head of Department. Ten (n=10) lecturers, one (n=1) senior lecturer and one (n=1) Head of Department (HoD) were recruited for the data collection process. Purposive sampling was adopted for this study. Content analysis was followed and concluded with classifying the content based on the themes. While lecturers focused on examining students, the Senior Lecturer and Head of the Department engaged in facilitating moderation of assessment. The Transformative Learning Theory guided this study. The application of Transformative Learning Theory emphasises change, new ways of doing things, and additional, detailed assessment techniques. The study found that lecturers encounter some challenges in terms of the implementation of well-coordinated assessments, and there are assessment discrepancies which emerge during the setting of question papers. Lecturers encounter challenges in applying standardisation documents when setting assessment tasks. Although there is an acknowledgement of the existence of formative and summative assessments, lecturers are expected to apply them following policies and assessment guides. Some of the assessment challenges emanated from incorrect interpretation of the syllabi and lack of understanding that a syllabus is the source of assessment strategies. Lecturer development training is required on aspects of designing effective assessment tasks to help students obtain effective progress.

## Introduction

Technical and Vocational Education and Training (TVET) institutions in South Africa are required to use the Internal Continuous Assessment (ICASS) framework by the Department of Higher Education and Training (DHET) (Department of Higher Education and Training [DHET], 2026). ICASS is a required gateway for Report 191 (NATED) Engineering programs (Maluti TVET College, 2022). It makes up 30% of the final composite score, and for students to take the final external exams, they must pass with a 40% sub-minimum (DHET, 2026; Maluti TVET College, 2022). Additionally, a large number of engineering instructors do not have official vocational assessment qualifications or direct industrial trade exposure (Blom, Wedekind, Watson & Buthelezi, 2024; Buthelezi, 2018). This is unfortunately a negative experience that can eventually affect students' outcomes and development. If this gap remains unexamined, ICASS will continue to function as an administrative hurdle rather than a tool for producing skilled, industry-ready engineering artisans (Govender & Makgato, 2022). Thus far, the ICASS provision advocates for students' assessment on an ongoing basis in the normal teaching and learning environment, beyond the constraints of an examination process (DHET, 2026). The low certification throughput and growing technical skills deficit in South Africa are directly exacerbated by this trend (Blom et al., 2024). A serious mismatch between policy-driven conformity and genuine vocational competence were identified in the use of assessment techniques in Report 191 engineering topics. Although DHET regulations use pre- and post-moderation pipelines to enforce strict administrative compliance (Umalusi, 2023), lecturers' practical implementation is still disproportionately theoretical, abstract, and exam-focused (Buthelezi, 2025). This mismatch is caused by significant time restrictions during the 10-week trimester, an antiquated curriculum framework, and serious workshop infrastructure deficiencies on many college campuses (Blom et al., 2024). As a result, instructors frequently model practical engineering issues solely on paper (Mesuwini & Mokoena, 2024).

Some studies revealed that systematic and comprehensive evaluation method is essential to enhance the effectiveness of assessment strategies (Zou, Yuan, Mo & Mustakim, 2024; Agtarap, Januto, Aglibot & Toquero, 2024; Nagowah & Nagowah, 2009; and Dayal, 2021). In such circumstances, the assessment strategies assist in promoting student evaluations, clarify learning objectives and expectations and guide student learning behaviour (Zou et al., 2024). When conducting assessment, diversity assessment strategies should be used to best evaluate the worthiness of the student (Nagowah & Nagowah, 2009). Lecturers use a variety of assessment methods selected based on the educational context and instructor's perspectives, with some lecturers preferring formative assessment and others relying on summative assessment (Alaziby & Aldabbus, 2023). Both the two forms of assessment are commendable for teaching and learning, but their objectives seem different. This has led (Boud, Sadler, Joughin, James, Freeman, Kift & Dochy, 2010) to emphasise that assessment should be a core aspect of teaching and learning and not merely a process of testing and examination. A good assessment can be justified by reference to principles, and practices able to withstand external scrutiny as part of quality assurance (Gynnild, 2017). In TVET colleges, assessment is targeted at improving students' learning and lecturers' teaching to help students reach their full potential (Mukhtar & Ahmad, 2015). Students must be competently effective and efficient in the assessment tasks given to perform in the classroom or at home. Ideally, this implies that assessment should define its purpose, use appropriate methods to gather evidence of competence, interpret the evidence against competency standards, make judgements to infer competence and record as well as report outcomes of the assessment to key stakeholders (Gillis & Griffin, 2008).

In their study, Karakaya and Yilmaz (2022) explored teachers' views on assessment and evaluation methods in Science, Technology, and Engineering and Mathematics (STEM) education. Another study advocated for the importance of constructive alignment in assessment design which included usage of tutorials, assignments, feedback and group work (Hattingh & Dison, 2021). Based on the literature reviewed, there are few studies that have been conducted on the exploration of the application of assessment strategies by lecturers in the Engineering Vocational subjects. Among the few studies is the study conducted by Sebetlene (2016). The results of this study showed that assessment outcomes in TVET colleges display that some of the Integrated Continuous Assessment (ICASS) tasks in various subjects were of poor quality; there was a lack of or poor moderation of tasks; portfolios were incomplete, and there was a lack of structured remedial intervention after the tasks were conducted. Currently, it would seem there are few studies that explored the application of assessment strategies used by lecturers of the report 191 engineering vocational subjects at TVET colleges. Therefore, the current study sought to close this gap. In search of appropriate answers, this study aimed at finding ways upon which assessment strategies used by lecturers in Report 191 engineering vocational subjects at TVET colleges could be implemented.

To achieve this goal, the study sought to find answers to the following research questions:

- What are the various types of assessment methods used by lecturers during the teaching and learning of vocational subjects?
- How do lecturers apply their assessment strategies in Report 191 Engineering vocational subjects at TVET colleges?
- What are the various strategies that can be used by lecturers to improve assessment during teaching and learning of vocational subjects?

### **Literature review**

Assessment information is extremely important in that it provides informed decisions regarding students learning abilities, their placement in appropriate levels and their achievement (Fook & Sidhu, 2010). Abilities of students learning are visibly attained through levels with which students have achieved, which could only be feasible through the judgement by lecturers. The decision of the judgement is based on openness, fairness of the tasks and that of the lecturers' marking.

#### ***Various types of assessment methods***

The purpose of assessment carries similar weight across educational institutions including the vocational education. The rationale for assessment is embedded in the four stages: generating and collecting evidence of achievement, evaluating this evidence against the outcomes, recording the findings of this evaluation, and using this information to assist the learner's development and improve the process of learning and teaching (Department of Basic Education (DoE), 2001). However, it is common knowledge that parents and stakeholders send their students to TVET colleges to acquire vocational skills. This view aligns well with the objective perspective of the competency-based assessment. It focuses on learning outcomes to constantly improve academic

programs and meet labour market demands (Idrissi, Hnida & Bennani, 2016). In the process, lecturers are expected to collect students' evidence (in the form of formal tasks) which eventually enable lecturers to analyse progress and achievement of the same students. The two official tasks are therefore weighted on the scale of 30% and 70% to become the overall percentage of the ICASS mark. At this stage, the marks have reached measures of authentic assessment. Frey, Schmitt, & Allen, (2012) summarized authentic assessment in that it involves the context of the assessment (the task is cognitively complex); the role of the student (a defence of the answer or product is required, the assessment is formative and students collaborate with each other or with the teacher); and the scoring (the scoring criteria are known or student developed, multiple indicators or portfolios are used for scoring and the performance expectation is mastery). In the end, lecturers create space for consultation and development of students' network (Hattingh & Dison, 2021) for whom in their position possess limited ways of communicating expectations and feedback (Fernandes, Flores & Lima, 2012).

A continuous assessment method linked to lecturers' constant use of question papers and memoranda to teach students seem inappropriate, as it reduces an opportunity for students to engage with content from the prescribed textbooks. Hence, it was noted that the lecturers consistently engage in traditional methods of assessment, which are dimmed outdated and do not comply with the newer principles of assessment (Ghazali, Rabi, Hassan & Wahab, 2018). However, a variety of assessment methods that could be incorporated into teaching and learning need no overlooking. The findings by Singh, Muhammad, Mostafa, Yunus, Noordin & Darmi (2022) advocated for the integration of alternative assessment, summative assessment, formative assessment, informal assessment via observation, online assessment, self-assessment, portfolio assessment, peer assessment and school-based assessment. All these assessment methods are aimed at developing students holistically because each assessment was designed with a specific objective in mind. As the lecturers possess the status of authority in class, they enjoy unparalleled moments of choosing the type of assessment suitable for students. The aim of all these assessment methods is to contribute towards the personal development of the lecturers for enhanced assessment and students for measuring understanding. Incorrect conducting of assessment bears negative consequences that may likely stall the linkage of previous and current teaching and students' progress and reduce educational benefits.

Ultimate activities undertaken in the teaching and learning process dictate that assessment be introduced to measure students' progress. Assessment can be conducted during teaching and learning but is not limited to the final stages of the lessons. Various definitions of assessment have been drafted and none of them were deemed incorrect considering contextual factors. According to Amua-Sekyi (2016), assessment is all the activities undertaken by teachers and students to get information that can be used to fortify teaching and learning. The assessment comes in many different shapes, in writing or oral form and has the potential to affect students' outcomes. Furthermore, assessment is demarcated into two parts: one that is conducted during lessons and the other at the end of the project. During lessons, assessment is focused on testing if students follow what is being presented, while at the end of the project, the assessment serves as a progression and promotional event. Without the necessary steps to complete the assessment, no amount of students' progression could be witnessed. Therefore, it is important that as lecturers conduct assessments, care should be taken to eliminate elements that weaken the process.

### *Lecturers' application of assessment strategies*

Realities of TVET colleges' assessment practices may be flawed in many ways due to pedagogical skills that seem lacking. In the study of Sajjad, Nasir, Nasir and Saif (2019), they found that lecturers were untrained in classroom assessment resulting in continuous incompetence. The lack of skills and knowledge of better assessment practices limits the horizon and thinking capacity of the students who are likely to stumble during assessment. Moreover, traditional assessment practices were viewed as most preferred by lecturers and found to contribute to low students' learning outcomes (Sajjad et al., 2019). It was further elaborated that traditional assessment practices were caused by a lack of knowledge and skills, restricted access to online resources and a lack of professional forums for teachers to share their successes and experiences (Sajjad et al., 2019), in addition, learners' diverse needs (Agawin & Alferez, 2024). A specific angle and context should be provided to comprehend the impact of the challenges pointed out in this section. This implies that, as stated by Agawin and Alferez (2024), it is important to practice effective methods which would eventually support efficient teaching and learning processes. All the details of understanding the assessment challenges provide enhancement of steps that could be taken to advance teaching and learning, ultimately the outcomes.

The role played by lecturers in the vocational classroom amounts to pedagogical and professional competence largely to provide supporting material understanding and student engagement (Rianti & Salsabilah, 2024). In this era of technology, partly, lecturers need to also enhance their technological abilities which can be used in and outside the classroom. Due to the nature of teaching in the vocational class, lecturers should possess a multifaceted set of competencies tailored to address the diverse needs of learners (Palei, 2024). Lecturers require training that would broaden their individual competencies coupled with the knowledge and skills to truly benefit students. The training event should demonstrate promotion of collaboration, empathy and critical thinking skills among students (Molina, Marauri, Aubert & Flecha, 2021). With lecturers so determined to face teaching challenges that may be encountered, TVET institutions should strive for increasing the limited resources and facilities and reducing the overwhelming teaching workload (Tsetetsi & Onaolapo, 2024). By protecting institutional image, TVET institutions deliver continuous supportive roles that enable lecturers to perform their teaching and assessment duties. An assertion was made that lecturer training provision for TVET lecturers and an appetite for wide ranging professional development with the focus on assessment should singularly support the quality TVET lecturer (Wedekind, Russon, Zungu, Liu & Li, 2024).

The idea of addressing assessment challenges would serve as a foundation towards improved teaching and performance. The assessment role, which in essence had become the operational centre of teaching, serves to attain educational goals (Mansor, Leng, Rasul, Raof & Yusoff, 2013). The expectation for the lecturers dictates that they become involved in the four phases of the assessment process, that is planning, gathering evidence, interpreting evidence, and using the results for decision-making (Mansor et al., 2013). When lecturers plan their assessment process, they involve students, and it includes informing the students of the date, venue and time at which the assessment will take place. During assessment, students are more active than the facilitators, who provide responses and solutions to problems designed in the form of questions. Given responses are allocated a tick for confirming the correctness of the information and finally translated into a certain percentage for recording. Eventually, the authorities can be able to judge performance as progression (moving to the next grade) or failure (repeating the same grade).

### *Various strategies lecturers use to improve assessment*

In any research study, a conceptual understanding is useful because it guides the researcher on functions, operational goals and findings. Assessment occurs within the teaching and learning environment with lecturers at the centre of the facilitation process. Within that context, Assessment for Learning (AfL) crops up as the core of teaching and learning. Budiyo and Mardiyana (2019) describe AfL as a procedure of gathering and analysing the data that students and their teachers use to identify the current academic destiny, the next immediate academic destiny, and the path to take towards that particular academic destiny. The meaning of assessment during teaching and learning warrants that lecturers ask questions, whether verbally, on the whiteboards or through overhead projectors. This allows lecturers to find out the amount of knowledge students have acquired and can apply. Lecturer teaching experiences permit lecturers to identify the knowledge vacuum which constantly demands different teaching approaches. It can be visible through the silence of the students when questions are posed, and there are no responses, and it widely occurs during formative assessment. Formative assessment is part of a holistic assessment comprising formative purposes, Assessment for Learning (AfL), Assessment as Learning (AaL), and summative functions, including Assessment of Learning (AoL) (Sumardi, 2017).

Constant assessment in class has various benefits wherein negatives turn into positives. Hidayat, Sujadi, Siswanto & Usodo (2023) agree that such benefits include that teachers use Assessment for Learning (AfL) to increase students' motivation and commitment to learning. Such a situation makes students have minimal issues of absenteeism with less likelihood of dropping out and uncontrollable failure. Throughout the whole process of assessment: A-Z, lecturers should be actively involved and in control. Broadfoot, Daugherty, Gardner, Harlen, James & Stobart (2002) asserted on the following that assessment for learning should focus on how students learn; be recognised as central to classroom practice; be regarded as a key professional skill for teachers, be sensitive and constructive because any assessment has an emotional impact; take account of the importance of learner motivation; should promote commitment to learning goals and a shared understanding of the criteria by which they are assessed; learners should receive constructive guidance about how to improve; develops learners' capacity for self-assessment so that they can become reflective and self-managing; and should recognise the full range of achievements of all learners. Although this view could not be entirely up for debate, the teacher remains in control and manages all class activities.

Ukoh & Onifade (2020) emphasize that an effective assessment strategy plays a crucial role in supporting students with varying levels of subject-specific skills and abilities. Before students could work on the assessment, lecturers ensure availability of assessment materials like question papers that goes together with the memorandum and additional materials like the rubrics. The role of the lecturers during the assessment process include that they follow a strict plan that ensures fairness in the assessment (Govaerts, Van der Vleuten & Schut, 2022). The following phase that comes after the assessment is the marking process where the memorandum and rubrics are utilized. It is therefore important that immediately after marking has been concluded, lecturers record students' performance and feedback in a timely manner to ensure the completeness and accuracy of the data (Govaerts et al., 2022). Lecturers check and evaluate the performance of the students by observing the number of students who wrote the assessment, number passed and number failed as well as identifying questions that were extremely difficult. In this way, the lecturers can understand

whether students require some emphasis on topics that were misunderstood or to another extend they need retesting.

Various forms of literature dealt with the conceptualization, purpose, challenges, importance and strategies to improve assessment. The ultimate goal, which would be enhancing assessment, requires the setting of clear assessment criteria that students understand as an assessment mechanism (Zou et al., 2024). Lecturers are bound to follow and use the syllabus as a guide and road map with which to make reference, outlining what to learn and activities that must be done. Lecturers make decisions on the time and structure of the assessment in line with the lesson schedule, teaching objectives and choice of appropriate assessment method in context (Govaerts, Van der Vleuten & Schut, 2022). For all the completed assessments, lecturers load students' performance into the TVET College Intelligent Transportation Systems (ITS). Prior to loading students' performance into the ITS, lecturers should provide students with feedback in a timely manner to ensure the completeness and accuracy of the data and areas of improvement (Zou et al., 2024). In this way, lecturers can evaluate whether the teaching method suits the students' cognitive ability level or can resort to other teaching techniques. Eventually, students can be evaluated, learning objectives clarified, and learning behaviour guided (Zou et al., 2024). At this point, the lecturer could decide on giving students a special examination due to the high failure rate during the assessment.

### **Theoretical framework**

A theory is a necessary instrument in research studies as it directs activities that eventually help reach appropriate findings. The choice of a theory that corresponds with the study objectives contributes to truthful findings and recommendations that later might be used to increase assessment outcomes. Although the Transformative Learning Theory (TLT) was developed nearly five decades ago, it still commands relevance in education to date. Jack Mezirow, seen as the father of transformative learning, describes TLT as the process of effecting change in a frame of reference, which is the structure of assumptions through which to understand people's experiences (Mezirow, 1997). TLT should progressively find its way to integrate with assessment strategies in the classroom of vocational subjects. According to Mezirow (1997), in relation to assessment strategies, the frame of reference sets lecturers' line of action wherein they move from one specific activity (mental or behavioural) to another during assessment activities. Such involvement enables students to accommodate new information, posing different points of view and linking previous knowledge with the current data.

TLT advocates for a more interactive and student-centred approach with a focus on interpersonal skills, creativity, collaboration, and critical thinking (Herman, 2023). At the core of TLT is the fact that it is in coherence with promoting students' personal growth, building critical thinking skills, increasing creativity, supporting diversity and inclusion, helps adaptability (Herman, 2023). Satisfactory results of effective and efficient TLT encourage students to feel independent while working on teaching and learning through assessment strategies. This theory was dimmed relevant to this study because it advocates for the understanding of people's experiences through which lecturers provide steps they use during the implementation of assessment strategies. Assuming that lecturers' assessment strategies were flawed, the implementation of the TLT would divert attention wherein lecturers change their assessment methods to try something newer strategies.

Now it is clear that the TLT has worked its way as new information that stands out as the only resource in the learning process (Mezirow, 1997) of TVET college students. This can only occur in the teaching and learning environment wherein students deliberate concepts guided by lecturers. The benefits highlight that the sharing of experiences and values within a comfortable group atmosphere can act as a stimulant for critical questioning (Cranton, 2016) during class discussions. The situation leads to students into making serious reflections of their own learning experience. Students, therefore, interpret their learning which is basically less biased because all aspects have been evaluated and filtered through their experiences and beliefs (Halupa, 2015). When students come across a difficult question, they consult the textbook, they believe the content can help provide direct responses. The role of the lecturers is to guide students take responsibility for their learning and creating a pleasant environment (Mezirow, 1997).

Coding is a specific portion of data analysis. The function conducted during coding revolves around organizing dense data into manageable amounts and helps to make sense of the data by revealing trends and patterns (Berthet, Gaweda, Kantola & Miller, 2023). Coding can be used for identifying similarities and highlighting differences through painting images as well as like ideas.

Data analysis is a process of examining and explaining collected data in order to extract an explanation, understanding, and establishing experiential knowledge and skills (Babbie, 2014). Immediately after collecting all forms of data, the collected data can be analysed utilizing the thematic data analysis.

Assessment practice is a process of monitoring students' learning to provide ongoing feedback that can be used by lecturers to improve their teaching and by students to improve their learning (Ngamba & Lumadi, 2025). Each assessment task that must be conducted, it has to follow certain procedures and other educational requirements or regulations. The idea of conducting assessment is embedded on determining how much learning and teaching has occurred (Mege, 2014) or to evaluate the learners' academic performance (Carless, 2015). Assessment can be done in various ways including verbal form, formal or informal and summative assessment.

## **Methods**

### ***Research Paradigm***

The research paradigm is viewed as an entity that shapes the entire research process, from framing the research question to deciding on methodologies and methods and finally analysing and reporting the results (Pretorius, 2024). Furthermore, a research paradigm is best described as the way researchers see the world and make sense of it (Mukherji & Albon, 2015). For this study, the constructivist paradigm was chosen as it comes out of the philosophy of phenomenology and hermeneutics which is generally the study of interpretive understanding (Mertens, 2010). Although the constructivist paradigm is broad, here it is reduced to discussion of its association with holistic assessment. According to Meylani (2024), holistic assessment integrates knowledge, skills, attitudes, and values, aiming to capture a broader and more nuanced representation of students' capabilities. Constructivist researchers embrace holistic assessment as an approach that focuses on portfolio evaluations, self-assessments, peer assessments, and project-based tasks that promote critical thinking, creativity, and the application of real-world skills (Arumugham, Gengatharan

& Zaini, 2025). In this way, lecturers are able to assess the effectiveness of their pedagogical techniques and adjust them as needed (Black & Wiliam, 2010) by the students.

### ***Research Design***

A research design is a logical and systematic plan prepared for directing a research study (Khanday & Khanan, 2019). This study employed the phenomenological research. The study is characterized by a focus on understanding the meaning of lived experience from the perspective of the affected individuals (McLeod, 2024) being studied. The aim is to examine the lecturers' assessment strategies in the vocational subjects they teach including the overall objectives or final products of assessing the students. This is further supported by the view that in phenomenological research, the researcher assumes that individuals use an essence of interpreting their experiences (McLeod, 2024). As lecturers assess the students, they must analyze whether the assessment met the standards at which students could measure whether the assessment was difficult or possibly a retest is required. It should be noted at this stage that the researcher must set aside any preconceived notions he or she may have regarding the experience (Groenewald, 2004). By doing so, the researcher is able to suspend any biases or even assumptions that may develop due to prior or previous experience.

According to Habib, Maryam & Pathik (2014), research methodology is a crucial aspect of academic writing, ensuring credibility and validity of the information presented. Of importance, it is plausible to note that the research methodology is determined by the research question and the subject being investigated (Denzin & Lincoln, 2005). This implies that research methodology has direct influence to the kind of answers provided by the participants based on how the research question was framed. It was extremely important for the researcher to identify population for the study from which sampling could be conducted. Population definition attests that it is a combination of group of people, events or things that the inquirer aims to investigate (Thieme, 2018). From the population, a sample was selected. A sample size of 12 participants was the minimum number used to extract data (Taderdoost, 2017) through face-to-face interviews. Data analysis and interpretation were conducted using thematic data analysis. Themes were developed and for the greater part contributed to the discussion.

### ***Data Collection Instruments***

Semi-structured interviews and observations were employed during data collection. Content analysis was used to analyse the collected data. The study required the content analysis method merely because it is entirely embedded on systematic classification process of coding and identifying themes or patterns as well as subjective interpretation of the content of text data (Hsieh & Shannon, 2005). The method of data analysis followed and involved identifying the research question; selecting the study sample; skimming through the selected material towards listing main themes; creating coding scheme; defining the themes and classifying the content based on the themes (Parveen & Showkat, 2017). The objective of assessment borders on familiarity of pedagogical feasibility to help students learn. Assessment requires Learning and Teaching Support Materials (LTSM), which, in essence, should be provided by the senior lecturer and HoD.

### ***Research Participants***

Recruitment of participants was done, and ten (n=10) lecturers who are actively involved with teaching vocational subjects, one (n=1) senior lecturer and one (n=1) Head of Department (HoD) were involved in the data collection process. Purposive sampling was adopted for this study on the basis that it involves lecturers in their capacity as assessors eligible for conducting assessment tasks within the vocational classroom environment. Lecturers provided answers that reflect on how they assess students and the tools they use. The senior lecturer and HoD would express their involvement between the preparation of the assessment and after the assessment.

The following diagram shown as table 1 provides details of research participants: the workplace, qualifications, experience and specialization.

**Table 1: Lecturer qualifications and teaching experience**

Lecturer Code	Vhembe TVET College Campuses	Qualifications	Year Obtained	Teaching Experience To 2026
OP9SLL	Musina Campus	N. Dip. in Civil	2014	Started lecturing in 2018. Eight years of teaching experience.
OP10MLDZ	Tshisimani Campus	N. Dip. in Electrical	2018	Started lecturing in 2014. Twelve years of teaching experience.
OP11MSS	Shingwedzi Campus	N. Dip. in Civil; PGCE	2013; 2021	Started lecturing in 2013. Thirteen years of teaching experience.
OP12MKMBN	Shingwedzi Campus	N. Dip. in Civil Adv. Dip in TVET	2017 2023	Started lecturing in 2017. Nine years of teaching experience.
OP3MTHG	Shingwedzi Campus	N. Dip. in Mech B.Tech in Mech	2009 2010	Started lecturing in 2016. Ten years of teaching experience.
OP8NTSHTNGL	Shingwedzi Campus	N. Dip. in Mech. B. Ed Trade in Boiler Making	2016 2024 2015	Started lecturing in 2016. Ten years of teaching experience.
OP7HKDAW	Shingwedzi Campus	STD in Technical ACE in Maths	1999 2007	Started lecturing in 2002. Twenty-Four years of teaching experience.
OP1SHRND	Shingwedzi Campus	N. Dip. in Civil Trade in Bricklaying	2017 2019	Started lecturing in 2019. Seven years of teaching experience.
OP5DEMLDZ	Shingwedzi Campus	N. Dip. in Civil; PGCE	2008 2019	Started lecturing in 2015. Eleven years of teaching experience.
OP4MTML	Shingwedzi Campus	N. Dip. in Mech. PGCE Trade in Boiler Making	2003 2021 2003	Started lecturing in 2019. Seven years of teaching experience.
OP2MLNG	Shingwedzi Campus	N. Dip. in Mech. Trade in Boiler Making	2011 2008	Started lecturing in 1994 - 2008; 2017 - 2023. Twenty-three years of teaching experience.
P23MMTH	Shingwedzi Campus	N. Dip. in Mech. PGCE	2005 2019	Started lecturing in 2006. Twenty years of teaching experience.

In the first column of Table 1, lecturer code represents identification of participants in the study with slight hints, a mixture of letters and numbers. The manner in which these lecturer codes have been framed works as an identifier that another researcher could be able to use the same individual participants for future research. The rest of the columns points at the study contexts, lecturer

qualifications in specific vocational fields, the year in which qualifications were obtained and number of years of experience in teaching vocational subjects. These lecturers are responsible for equipping the students with practical skills that help them to secure employment (Solomon, Luger & Ned, 2024). Lecturers are required to possess relevant qualifications and experience to afford the students an opportunity to develop in their vocational fields. Students are assessed in a wide range of activities, such as cooking, gardening, housekeeping, childcare, welding, motor mechanics, and carpentry (Solomon et al., 2024). The programmes are already part of the occupational programmes introduced by DHET which warrants future changes in the way students are assessed.

### **Findings and discussions**

The first research question sought to identify the various types of assessment methods used by lecturers during teaching and learning of vocational subjects. Below, the findings regarding this question are presented. Codes were used to hide the identity of the participants. For example, the P stands for participant, and the three letters of alphabet represent some parts of the participants' surnames. The following data is presented according to themes.

#### ***Types of assessment methods used by engineering lecturers in vocational subjects.***

Results of this study have shown that there are challenges faced by lecturers during assessment of students in vocational subjects. Students' performance in vocational subjects have for the past four (n=4) years recorded low pass percentage. If lecturers embark on their teaching and students are attending classes (lessons), generally one would shift thinking towards challenges on assessment. Zeneli (2003) had emphasized that assessment was a complicated process which needed accurate information and knowledge of what to assess. In addition, there is one value that should be commended that the basic function of assessment is to improve the educational work (Agaj, 2015).

A sense of dishonour in the way assessment is currently conducted by lecturers in Report 191 engineering programme was in full display. The lecturer identified as P9MKN outlined in his response how assessment was done.

*There is this thought that I have usually heard from lecturers saying that let us outsource from the previous QPs since now it's 2023 let's go from 2022, 2021 and 2020 which is wrong sir, the examiner will not bring anything beyond these years. So, I go beyond 2013 going backwards. (P9MKN).*

Information as provided by P9MKN highlights less innovation during assessment except that lecturers rely heavily on treating previous question papers during teaching and learning. This is a typical example that lecturers set a singular type of assessment tasks for all students regardless of their capabilities and challenges (Nkalane, 2018). The high marks obtained by the students are not a true reflection of students' performance but merely a sign of memorizing questions papers. Precisely, this could be dimmed unfit in the realm of knowledge acquisition on the basis that they keep guessing the type of questions that may be possible be included in the test. This is clearly an indication or proof that the lecturer has no clue on the knowledge students have achieved in class

(Agaj, 2015). It is undoubtful that lecturers inherited traditionalist methods of assessment. Lecturers neglect other forms of assessment such as discussions, practical demonstrations, observations, self-assessment, and peer assessment to assess other skills and to allow students to be innovative (Nkalane, 2018) in doing tasks. Without discovery of wrongly done assessments, students are placed in context where little attention is paid on how they understand and analyze knowledge, comment, critical and/or connect with another form of knowledge (Agaj, 2015).

In some assessments, a test writing process can be used where students provide answers to be marked by lecturers and marks awarded through ticks. One concept is introduced and called standardization. Standardization occurs when question papers are balanced so that it may not be difficult or easy. To conduct the standardization, examiners use tools such as analysis grid and pre-assessment moderation checklist. The analysis grid is a document through which examiners highlight the type of assessment, number of marks, amount of time spent, number of questions, names of examiners and moderators as well as instructions of test/examination. The pre-assessment moderation checklist is also a document that checks availability of supporting documents if they are attached to question papers, verifying correctness of marks awarded as well, correctness of numbering, sub-totals included, check if fonts and linespacing are correct. Assessment does not end when students have written the task, there is also marking of the task accompanied by awarding marks and providing feedback to students. Analysis grid on the other hand aligns marks against the amount of information provided as answers by students. The above process accounts for two assessment methods, formative and summative assessment outlined by participant (**P8MPHL**).

*We are using the formative assessment and also summative assessment. Firstly, I must tell them which chapter they will write with for Test 1 maybe they are writing two tests per trimester so firstly they should know for Test 2 we are going to write with Chapter 1 and Chapter 2 for example and then before I do that I must prepare the pre-assessment moderation I set the test QP and memorandum or marking guideline and then do the analysis grid then after that I give it to my senior lecturer with pre-assessment moderation checklist then after that he or she brings it back to me and if it is approved it's then that it is ready for the students to write. (**P8MPHL**).*

*As for the standardization we use the analysis grid. It balances the issue of marks against the time. When you look at the analysis grid it's gonna tell if may be I'm having 3 marks you might be possible that 3 marks is equivalent to 1,8 minutes how much time are you to spend on that question at the end of the day if it's 50 marks then we know that it's calculated correctly, it will give the correct time that we are looking for but cannot master how to design an analysis grid. (**P13MKBL**).*

Hence, while designing question papers, the question items have to be aligned with course learning outcomes and program learning outcomes, as this is now a focal point in education (Crespo, Najjar, Derntl, Leony, Neumann, Oberhuemer, Totschnig, Simon, Gutiérrez & Delgado-Kloos, 2010). Outcomes are greatly visible at the beginning of the lesson under various modules which are directly linked to topics. As lessons are presented in class, questions play the role of a link between the teacher, content and the students from which there are multiple benefits. Li (2020) asserted that control of the classroom is centred around questions. Lecturers capture the attention of students by creating a recurring little piece of inquiry throughout the lesson to test understanding of the

content. Lessons are continually improved when questions are asked appropriately, eventually producing motivation, communication, guidance, organization, and creativity (Gao, 2013). Students instinctively avoid not responding to lecturers' probing questions with the view of not creating embarrassing moment by not answering. The time spent between asking questions and responses given by students is hard to determine. Experiences gained throughout teaching life enable lecturers to notice that students are unable to give correct answers to questions. Immediately, on noticing non-response to the questions, the lecturer either should provide a clue or guide students towards the answer.

### ***Lecturers' methods of assessment strategies application in the vocational subjects.***

When students fail, lots of questions are asked for the lecturers to give answers. The lecturer has to account to the authority of the TVET college, to parents and students. General expectations are that when students have failed, lecturers would provide all sorts of excuses. By his own admission, lecturer PIMTHG accepted accountability of failing the students. His responses supported the views:

*I think that what we are failing is that we are failing to test if the students are understanding what has been taught I feel like we are expecting the kids to get the story and go and study by themselves and understand by themselves which I feel like that way we are letting the students down. (PIMTHG).*

*We have got new syllabus but when you check the QP mostly with the examiners they don't concentrate on the syllabus they even include some things that are not in the syllabus that is why we have a challenge. You don't know whether you should teach everything in the textbook or concentrate on the syllabus. We try to complain, isn't it when we write reports as to why students failed, it's one of the things we mention but we don't have the right channels to complain about it, we don't know where we stand. (P15MKEN).*

*I want to deal with the question paper (QP) that the students write when we are writing Test 2. I also sit down and write down that QP, when the final QP comes out I go home and treat that paper the same way the students would and that way I can gauge and feel that this paper is either too difficult or too easy for the students. (PIMTHG).*

Many factors may lead to students' high failure rate, some of which can exonerate the lecturers. Some of the issues could be social factors including that of students to students like bullying. When students bully one another, such happens far away from teachers or parents and could take longer periods to be detected. The absence of students has a negative bearing on performance (Lukkarinen, Koivukangas & Seppälä, 2016), because students may be unable to regain the knowledge transmitted in class. For students to make the most out of teachers' efforts, they must attend their classes. Lecturers will be able to provide necessary information to help students pass.

Struggles of technological usage has been going on for more than a couple of decades whether in teaching or some other professions. In teaching, especially the TVET college sector, with so much easy accumulation of resources, it would be unexpected that lecturers speak of technological knowledge difficulties. Unfortunately, things are not what they look like at face value as two lecturers revealed their technological experiences:

*Technology knowledge that one is difficult, I think as lecturers we lack knowledge of technology, of using technology that is why it's most difficult but I'm slowly learning on that but what I can say is that technology is the future but it needs time for us to adapt or adjust with it because it's gonna be much easier. Let me say when you are teaching something with drawings when you are good with inventor, auto-desk inventor or auto-desk CAD it's easy for you to teach with that without even showing them by writing on the board. You just design a model in that auto-CAD or auto-inventor and then you project it there, and then show them what you really talk about when you talk about coupling and things like that. (P12THM).*

*For me I can say technological knowledge is a challenge. I only attended one workshop for moodle. How to login to moodle how to access moodle how to put information through moodle. Training was not sufficient because the timeframe was very little. We didn't have enough time to go through each and everything there on moodle so that I can know everything on moodle. What we did we just only did the basics how to login how to put notes how to put tests, how to grade etc. those other things we didn't do such a thing. (P21MKML).*

Prior to speaking of assessment online, teaching and learning online had never for once received positive approval from lecturers. Lecturers' thoughts were that of suspicion online teaching would take students away from physical attendance and therefore cannot have full control of the classes. The rationale behind the thinking was that online learning challenged academic staff to exposure of their technological competency and proficiency (Gillett-Swan, 2017). Online teaching uses technology as the basis for accomplishing educational objectives and eventually gives birth to e-learning. Teaching and learning in that technological (e-learning) setting ensures students are involved as learning takes place together with texts, videos, sounds, collaborative sharing, and interactive graphics (Al Rawashdeh, Mohammed, Al Arab, Alara & Al-Rawashdeh, 2021). All these items to make online teaching possible demand recurrent presence of technological resources. TVET colleges should do a comprehensive budget to facilitate procurement initiatives to ensure the purchase of technology resources.

Technology educators agree that digital tools improve efficiency and student engagement while reshaping assessment practices (Okafor, 2025). Many of these technological tools can be utilized for various functionalities such as Learning Management Systems (LMS), collaborative platforms, assessment software, and on the other hand they are tools for communication (Okafor, 2025). In some quarters of education, the use of technology has become a dominant force through which to advance modern teaching and learning. In addition, these technologies enable personalization of learning, expand accessibility to educational resources, and increase student engagement through more engaging and interactive media (Gan, Menkhoff & Smith, 2015). In the context of this study, the Moodle platform had been promoted as the only digital technology which allowed lecturers to upload learning materials and conduct assessment tasks in a more efficient manner. This was amplified by the notion of blended learning whereby lecturers taught in their class while they have connected digital technology materials to accommodate students absent from the class. All the classes are fitted with the whiteboards, projectors and sliding projector boards that can be operated electronically to wipe off information as well as sliding projector boards. Technology permits that students can work on their assessments using their own personal cellphones during

their spare time in the comfort of their homes. Technology usage, specifically when online learning is encouraged during teaching and learning vocational subjects, it surely must enhance students' ability to achieve academically.

In the Report 191 engineering programmes have been designed to spend little time in preparation for the final examination and students' progress. Lecturers become confused in that it is expected of them to teach students while they hold a belief students need to watch machine operations. Participant P7SLBN shares the belief that students should be asked application questions. Therefore, this means that if the lecturer has not trained students during assessment on how to respond to application questions, they may find it hard answer the questions. Below herein is what participant [P7SLBN] had to say:

*The content you need to know more about what you are teaching, more so, if ever I can emphasize, see now if you are teaching about a machine you need not say what the book is saying, not coming out with some of the things that you know because you may find that this nowadays they ask application questions, if you find that now you are just looking at the content and focusing much on the content in the book. Then you are not bringing things that entail more about the machine. You might find that the students might be asked a question which may be an application question they say "what do you know about the machine?" and you find that students, you didn't teach them, that is the problem which they might have. (P7SLBN).*

The method of questioning using the knowledge application during assessment is visibly important because it ends up linking with real life situations. In practical terms, it means that lecturers design questions that allow students to perform implementable tasks that look concrete than imaginations. It is crucial that lecturers are acquainted with Blooms Taxonomy system which was introduced as a part of a regular feature in the assessment methods of exam/test questions (Sivaraman & Krishna, 2015). When designing an assessment, lecturers are advised to consider the following including writing and revising learning objectives; planning curriculum; identifying simple to most difficult skills; effectively aligning objectives to assessment techniques and standards; incorporating knowledge to be learned and facilitating questioning (Giesen, 2014). For example, the three questions below here were adopted to assist with elaborating how Blooms Taxonomy could be used on the aspect of application in exam papers assessment:

What is the Root Mean Square value of an alternating current?

Classify the soils based on the data given.

Design a pneumatic circuit for the application described (Sivaraman & Krishna, 2015).

The first question, students are forced to carry out calculations to arrive at the Root Mean Square value of an alternating current. This implies that the lecturer must have shown students steps to be followed to get the Root Mean Square value. The second question, students embark on reading the data given before classification of the soils and in the process looking at similarities, properties and certain features to complete the task. Similarly to the third question, instructions given direct students on which tools to use, measurements and time required for completion. Lecturers themselves are supposed to have practised what students are expected to achieve. This creates feasibility by way of removing disturbing data that may nullify the whole assessment due to minor errors.

### ***Strategies that can be used to assess Report 191 engineering vocational subjects.***

The views expressed by P18NMND are valid from the angle at which he stands. Trimester subjects are designed within the framework of assessment plans and schedules that must be followed. Trimesters run for the teaching duration 46-49 days, from which in the first 2-4 weeks, the first test must be written and 5-8 weeks, the second final test must be written after which classes come to halt (DHET, 2025).

*Another challenge is the timeframe; timeframe is only three months so three months is so little time for our learners because remember they were coming from secondary where they did one class for one year now they have come to three months only three months so it's so difficult for them to cope to do four subjects with the whole syllabus it's more difficult so we find that our learners failed just because of the timeframe. (P18NMND).*

Students are coming across new content in all levels, at N4, N5 and N6 unlike the lecturers where they teach the same content in every trimester. Lecturers raise this concern of short timeframe due to factors that include newly adopted fast paced teaching style students need to acclimatize with. Although this factor sounds authentic, it has never been tested scientifically through the eyes and thoughts of participant P18NMND. Lecturers are expected or must have at least set two tests that must be accompanied by the analysis grid and pre-moderation checklist. Furthermore, within the same timeframe, the tests must be marked and students' marks recorded into the TVET college system ready for submission to DHET. Lecturers also need to be in possession of subject file and an assessment file to keep records of scripts and/or as artifacts storage (DHET, 2025). Lecturers are bound to work within the policy framework and ICASS guidelines as this may never change anytime soon.

Lecturers are poised to develop appropriate instructional strategies that positively influence academic learning (Mills, 2022). Areas that appear to have embedded challenges is inadequate knowledge of fundamental assessment and measurement concepts (Bichay-Awadalla & Bulotsky-Shearer, 2022); Inadequate training in assessment (Stiggins, Conklin & Bridgeford, 1986) and failure of educators to correctly utilize guidelines for the learners in assessment courses (Di Liberto, Casula & Pau, 2022). Lecturers should constantly use assessment practices such as formative and summative assessment to enhance students' self-regulation, motivation and self-efficacy in assessment tasks (Jensen, Wallace, Steinberg, Gabriel, Dietiker, Davis, Kelcey, Minor, Halpin & Rui, 2019). Assessment can also be utilized as an icebreaker, the way to find out initial and additional knowledge possessed by the students. Lecturers should in the event when other means of assessment have never achieved desired outcomes, they can resort to providing a clue to help students regain the knowledge.

Formative and summative assessments are both strategies lecturers apply to promote effective learning in higher education (Basera, 2019). With formative assessment, it is expected that lecturers prepare students for real-world challenges rather than memorizing content for exams (Cheryl-Weston, Eadie, Croucamp, Morcowitz & James, 2024). Assessment in the vocational context should be the type that share attributes of employment which is drawn from the effectiveness of the lecturers. The summative assessment on the other hand, evaluates at the end of the semester whether student are examination ready and can reach a level of progressing to the next grade. Lecturers could fail in their attempt for learning if ever given inadequate support and professional

development (Govender, 2018). While formative assessment occurs during the class wherein lecturers dominate teaching and learning, summative assessment is more product-oriented and assesses the final product. TVET sector colleges provide ongoing, context-specific professional development to enhance teachers' confidence and skills in assessing competencies (Cheryl-Weston, Eadie, Croucamp, Morcowitz & James, 2024). As summative assessment continues, lecturers develop skills of identifying moment of error that require steps for corrections.

### **Conclusions**

The study aimed at developing strategies that could be useful in the implementation of assessment. For the efficiency and effectiveness of assessment, lecturers get proper guidance from the assessment policy. The assessment policy serves as a tool through which to administer, manage and conduct assessments (Ndleleni, Mollo & Mokhothu, 2023) without impediments. Furthermore, findings produced in this study are a direct reflection to ascertain withdrawal of discrepancies relating to the assessment. TVET colleges have got to design assessment policies in such a manner that discrepancies on vocational subjects are avoided and entirely removed. The present study supports correctly crafted assessments that avoid misleading students that potentially risk dropping of marks and eventually failing the vocational subjects. Lecturer development training regarding assessment in the local campuses, colleges within the province and at national level must be viewed as prerequisite at TVET colleges. Such training should pay attention to the development of innovative assessment strategies that support and enhance quality teaching and learning (Chibaya, Gcelu & Larey, 2025). Assessment is linked to practical competence that extensively connect to theoretical learning in the classroom towards the skills required to succeed in the workplace (Baartman, Gulikers & Dijkstra, 2013). In the design of assessment, clear instructions must be given to students, hence moderation cannot be disassociated with assessment. The reason all question papers go through the stage of moderation is that such a process is conducted for the purpose of editing language, correcting irrelevant questions and unmatching marks to the content provided. Given the situation where the syllabus had not been consulted, examiners are bound to commit mistakes when setting the question papers. It will obviously spoil the whole assessment in that subject, leading to another question paper. Moderation is meant to close such gaps wherein an examiner receives the question paper with all aspects that need correction and improvement.

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# Publication Guidelines for the International Journal of Vocational Education and Training

The *International Journal of Vocational Education and Training* reflects regional contributions and is international in scope. Its purposes are to provide a forum for the discussion of vocational education and training issues and practices; to assist in the dissemination of information on research and practice; and to strengthen the lines of communication among individual researchers and practitioners, institutions, and organizations. In addition, it provides a platform for individual views on relevant issues.

The Editorial Board passed a resolution requiring membership in IVETA in order to publish in the Journal, with effect from Volume 14.2. The Journal publishes feature articles on research, theory, and practice broadly related to international vocational education and training. The largest section of the Journal is devoted to empirical research articles. General articles and research manuscripts submitted for publication should be between 1,200 and 5,000 words in length and should adhere to rules in the most recent edition of the Publication Manual of the American Psychological Association (APA) with the exception of placing tables in-column in the text where you prefer them to appear. Articles should deal with some relevant aspect of educational opportunity such as educational research, evaluation, instruction, teaching methods, policy making, or theoretical discourses related to education and training.

In addition, the Journal solicits book, test, and computer hard/software reviews (500-700 words) and research in brief manuscripts (800-1,200 words) with similar publication goals. Authors interested in submitting a manuscript are required to follow the APA format as noted above.

## Style and Submission Requirements

**Copies.** Submit electronic copies to: <https://iveta.global/submit-your-abstracts-andarticles/>  
Or submit manuscripts directly to the editor via email at [theeditor-ivetajournal@iveta.global](mailto:theeditor-ivetajournal@iveta.global).

**Style.** Adhere to the most recent APA edition to format your manuscript. Please remember the exception: Place any tables or figures in-column where they should appear. Any paper that does not otherwise follow APA style will not be considered. Make certain that documentation (reference) format rules are double-checked. In addition, avoid footnotes, and do not include your name or affiliation on any page after the title page. No more than 5% of a paper's text should be direct quotations. Insert only one space after punctuation at the end of sentences.

**Tables and Figures.** Tables and figures should relate directly to the content of the manuscript and should not repeat information given in the text. Tables and figures can be produced in either color or black and white. Figures should be provided on high-quality, glossy white paper and should fit on one page. Tables should not exceed one page, and there should be no more than three tables per article. Also, do not place table or figure titles inside the table or figure.

**General Articles and Research Manuscripts.** General articles and research manuscripts must be between 1,200 and 5,000 words long, or not more than 25 typed pages (double-spaced). Authors should keep tables and figures to a minimum and include them in-column at the appropriate point(s) of insertion. Emphasis is placed particularly upon manuscripts that are research-oriented.

**Cover Page and Title.** Authors must include a removable cover page that is attached to each manuscript. This cover page should include the title of the manuscript and the name, address, phone number, email address, and institutional affiliation of each author. The title should be no more than 12 words.

**Abstract.** An abstract describing the manuscript should be included on a separate sheet. The abstract must be less than 120 words. Please follow APA guidelines when writing the abstract.

**Book Reviews.** Book reviews should be between 500 and 750 words in length and contain the following information: complete bibliographic entry, including cost (hard- and softcover, if available); the thesis of the book; a brief description of the argument (main ideas); sample passages quoted and/or commentary on writing style; shortcomings and strengths; intended audience (whom the book will most benefit in the international education and training community); your opinion of the book; and what you think the book contributes to the international vocational education and training community.

**Test Reviews.** Test reviews should be between 500 and 750 words in length and contain the following information: complete bibliographic entry, including cost; the main purpose(s) of the test; a brief description of the administration and time; shortcomings and strengths; intended audience (whom will the test most benefit in the international education and training community); your opinion of the test (citing similar tests and the pros and cons relative to those tests); and what you think the test contributes to the international vocational education and training community.

**Review Process.** Once your manuscript has been received, it will be checked for conformity to style and Journal requirements, then forwarded to up to three peer review readers who will read your manuscript and make recommendations as to whether to accept or reject it for publication. Unless the manuscript is inappropriate for review due to length and/or topic, manuscripts submitted to the International Journal of Vocational Education and Training are anonymously reviewed by a peer review reader group as noted above. You will receive a publication decision within a reasonable amount of time (normally 3 to 5 months). Do not submit manuscripts concurrently under consideration by another publication or manuscripts that were previously published. Indicate a statement on the cover page is the manuscript is being reviewed or has been submitted for publication elsewhere.

## Call For Papers

*The International Journal of Vocational Education and Training (IJVET)* accepts original manuscripts from scholars and practitioners worldwide focusing on technical and vocational education and training. Authors wishing to have their articles considered for publication in forthcoming volumes are encouraged to submit their manuscripts to [theeditor-ivetajournal@iveta.global](mailto:theeditor-ivetajournal@iveta.global), [tobias.orji@unn.edu.ng](mailto:tobias.orji@unn.edu.ng), or [jhondonga@gmail.com](mailto:jhondonga@gmail.com).

## Topic Areas of Interest

In general, *IJVET* accepts articles on all general aspects of TVET, however, the journal welcomes manuscripts that meet the general criteria of significance and scientific excellence, and will publish: original articles in basic and applied research, case studies and critical reviews, surveys, opinions, commentaries and essays including, but not limited to the following topic areas:

- Information and communication technologies and TVET
- Comparative studies in TVET
- Financing TVET
- Implementation and evaluation of TVET programs or education
- New and emerging practices in TVET
- TVET as continuing or lifelong Learning
- Transfer of Training
- Formal, Informal and Non-formal TVET
- TVET policies at local, national, and international levels
- Occupational competencies and TVET
- National Vocational Qualifications and Occupational Standards
- Occupational Certification, Licensing, Accreditation, and Micro Credentialing
- Cost Effectiveness and Quality Based TVET
- Instructional methods and TVET

For guidelines on submitting manuscripts, please visit:

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## Editorial Board Members

*IJVET* is also seeking members willing to serve as reviewers for the journal. If you are interested in joining our team of reviewers please, send your resume to IVETA JOURNAL, [theeditor-ivetajournal@iveta.global](mailto:theeditor-ivetajournal@iveta.global).