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Developing an Activity Theory-Informed WIL Framework for South African TVET Teacher Education

Petrina Niipindi Batholmeus*  and Nothemba Joyce Nduna 
 Cape Peninsula University of Technology
 Cape Town, South Africa

Abstract. The 2013 South African policy on professional qualifications for lecturers in Technical and Vocational Education and Training (TVET) emphasises the importance of both school-based teaching practice and industry-based work-integrated learning (WIL). The dual requirement of the policy poses a challenge, however, to faculties of education that are accustomed to school-based teaching practice as their form of WIL. Given that Industry-based WIL in TVET teacher education is a new concept there is, therefore, a gap in its implementation. Adopting an activity theory perspective, this qualitative study aimed at closing this gap by developing a framework to guide education providers in implementing industry-based WIL in TVET teacher education. Purposive sampling was used to select 16 participants from the faculties of education at eight South African universities who were responsible for implementing the WIL component in TVET teacher education qualifications. One workplace mentor was selected from each of 16 organisations. Data collection, which was followed with thematic analysis, involved semi-structured individual interviews for workplace mentors, two focus group interviews for lecturers, and perusal of curriculum documents. The findings revealed systemic contradictions between two systems that possess different objectives, rules, cultures and expectations, namely: 1) the university teacher education system that prioritises learning and professional formation, and 2) the industry workplace system that prioritises productivity and operational performance. As such, a framework was developed to strengthen partnerships and guide WIL implementation, within South African university-industry partnerships.

Keywords: Activity Theory; Implementation Framework; Policy Implementation; Professional Development; Qualitative Research; South Africa; TVET Teacher Education; Work-Integrated Learning.

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*Corresponding author: Petrina Niipindi Batholmeus; nbniipindi@gmail.com

1. Introduction

Globally, technical and vocational education and training (TVET) systems are expected to produce graduates who possess knowledge, skills, and workplace competencies aligned with labour market requirements (Zegwaard et al., 2023). Central to achieving this objective is preparing TVET lecturers capable of integrating occupational expertise with effective pedagogical practice. In South Africa, the Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training introduced a significant shift by requiring lecturer education programmes to include both teaching practice and industry-based workplace learning (DHET, 2013; Van Der Bijl, 2021). The policy states that "a strong workplace component must be built into TVET lecturer qualification programmes that prepare lecturers to teach the practical or workplace-based component of programmes. The purpose is to enable college lecturers to prepare TVET college students for the demands and requirements of the workplace" (DHET, 2013, p. 12).

This policy reflects international trends that require vocational educators to possess dual professionalism, with expertise in both teaching and learning and in occupational practice in their vocational fields. Although the dual requirement represents a structural innovation in TVET lecturer education, its successful implementation depends, however, on the capacity of faculties of education to coordinate multiple activity systems and establish sustainable industry partnerships. The implementation presents significant challenges, as the historical focus of faculties of education has been on school-based teacher preparation rather than workplace learning.

Unlike schools, which have long-standing partnerships with universities for teaching practice, many industries are not accustomed to hosting TVET lecturer trainees. Some of the challenges that arise include a lack of expertise in developing appropriate partnerships for workplace learning and in preparing college lecturers as both occupational practitioners and educators (Maluka & Mulaudzi, 2025). These challenges have resulted in identity tensions within the faculties of education, while additional difficulties include curriculum integration, assessment difficulties, resource and cost implications, shortage of academics with dual expertise, rapid technological change in industry and quality assurance across diverse workplaces with varying technologies, safety standards, training cultures and supervisory practices (Adam & Mengistie, 2026).

The challenges facing the faculties of education are understood and comparable to global TVET trends. What is not known, however, is how to address them and enable faculties of education to deliver on their expected mandate. This study attempts to address some of the challenges by developing an activity theory-informed framework to strengthen collaboration between universities and industry partners and enhance the effectiveness of industry-based WIL in TVET lecturer education. The study focuses on developing a framework for implementing industry-based WIL in TVET lecturer qualifications, which were first developed in South Africa in 2018. These qualifications comprise the NQF level 6 Diploma in Technical and Vocational Teaching (Dip TVT), the NQF Level

7 Bachelor of Education in Technical and Vocational Teaching (BEd TVT), and the NQF Level 7 Advanced Diploma in Technical and Vocational Teaching (Adv Dip TVT). In the African context, WIL in the TVET sector is particularly important, as the sector is expected to develop skilled citizens to contribute to the country's socioeconomic development (DHET, 2013). Hence, by adopting an activity theory-informed framework, this study aims to contribute to the production of qualified TVET lecturers who will, in turn, produce employable graduates, thereby reducing unemployment and boosting the country's socioeconomic development. The research problem, rationale, aim and objectives are presented in the following section.

1.1 Research Problem

Although the policy requires industry-based work-integrated learning (WIL) to develop the occupational competence of technical and vocational education and training (TVET) lecturers, there is currently no nationally accepted framework that specifies how such learning should be designed, implemented, supported, assessed, monitored and quality-assured within TVET teacher education qualifications. More than a decade after the policy's introduction, the implementation of industry-based WIL within TVET teacher education programmes remains inconsistent, poorly conceptualised and fragmented across institutions, limiting the effectiveness of industry-based WIL. This study addresses this gap by generating an empirically grounded framework that integrates policy requirements, stakeholder collaboration and expectations, workplace learning principles, and implementation mechanisms to support the effective preparation of industry responsive TVET lecturers in South Africa.

1.2 Rationale for the Study

Existing frameworks provide strong justification for lecturer workplace exposure but offer limited guidance on how WIL should be planned and implemented, across institutions and workplaces. Consequently, implementation is often fragmented, inconsistent and dependent on local arrangements. This gap between policy intentions and implementation practices can be closed by an implementation framework that identifies the actors, processes, resources, rules, partnerships and outcomes required for effective industry-based WIL in TVET lecturer education. Such implementation framework is proposed in this article.

1.3 Aim

The following question was formulated to achieve the aim and objectives of the study. How is industry-based WIL implemented and supported, and what enables or constrains it?

The study aimed:

to develop an activity theory-informed framework for strengthening the implementation of industry-based work-integrated learning in South African TVET lecturer educational qualifications.

1.4 Research Objectives

- To examine the university and industry activity systems involved in the implementation of industry-based work-integrated learning for TVET lecturer education.
- To identify and analyse the contradictions and tensions that emerge within and between university and industry activity systems during the planning and implementation of industry-based work-integrated learning.
- To align the two activity systems and identify the critical success factors, barriers, and enabling conditions for effective implementation of industry-based work-integrated learning in TVET teacher education qualifications.
- To propose an activity theory informed implementation framework for strengthening collaboration of industry-based work-integrated learning in TVET teacher education.

The structure of this article is as follows. First, a literature review examines international and South African perspectives on work-integrated learning (WIL), TVET lecturer education and industry engagement in teacher preparation. Second, is the theoretical framework that draws on activity theory to analyse the planning, implementation, of industry-based WIL. Third, is the research methodology that outlines the qualitative methods employed in the study. Fourth, findings are presented and discussed in relation to the experiences of key stakeholders involved in TVET lecturer education. Based on these findings, a framework for implementing industry-based WIL in TVET lecturer education is proposed. Finally, the article concludes by highlighting the implications for faculties of education.

2. Literature Review

2.1 International and South African perspectives on WIL in TVET lecturer education

Several studies describe work-integrated learning (WIL) as structured educational experiences that intentionally connect academic learning with workplace practice (Massyn et al., 2025; Mudaly, 2025; Reddy, 2024). Globally, WIL is regarded as a vehicle for employability enhancement, professional competence and occupational identity formation. Within vocational education, WIL is viewed as a mechanism for integrating theoretical knowledge and practical application while exposing learners to authentic workplace environments (Mesuwini et al., 2023; Oosthuizen et al., 2022).

While previous studies have focused on student learning, recent literature suggests that vocational educators themselves require workplace exposure to maintain occupational currency and industry relevance (Mesuwini et al., 2023; OECD, 2021; Tyle & Dymock, 2019). This is particularly important in the South African context, which is characterised by new policy developments, rapid technological change, evolving workplace practices and increasing demands for industry-responsive curricula. Most WIL research focuses on students (Molele et al., 2024; Ngubane et al., 2024; Schnobel, 2024) rather than lecturers, hence this study's focus on lecturers.

2.2 Professionalisation of TVET Lecturers

Internationally, studies suggest that effective vocational educators require dual competence comprising both occupational expertise and pedagogical knowledge (OECD, 2021; Puerta & Garcia, 2025; Weller et al., 2025). These studies indicate that countries such as Germany, Finland, Australia and Canada have developed systems that support professional dualism by encouraging lecturer engagement with industry through placements, professional development and workplace partnerships (References).

Within South Africa, the professionalisation of TVET lecturers has received attention since 2013 (DHET, 2013) and research highlights concerns about lecturers with strong teaching qualifications but limited industry experience (Khammounty et al., 2024; Misusing & Mokoena, 2023), as well as those with occupational expertise but insufficient pedagogical preparation (Bünning, 2025; Maluka & Mulaudzi, 2024; Van der Bijl, 2019). Consequently, lecturer development initiatives increasingly emphasise the need to strengthen workplace engagement and industry partnerships. As such, the proposed framework in this study aligns with initiatives that promote university-industry partnerships in teacher education.

2.3 Benefits, Challenges and Partnerships for Work-Integrated Learning

Studies examining lecturer participation in workplace learning demonstrate several benefits, including enhanced occupational competence, improved understanding of workplace technologies, stronger industry networks and greater curriculum relevance (Majola & Geduld, 2025; Nthako & Khumalo, 2025; Rosnan & Ahmad, 2024; Vasilev, 2024). Lecturers who participate in workplace placements often report increased confidence in teaching practical content and improved ability to contextualise learning through authentic workplace examples (Govender & Dhurumraj, 2024).

However, significant general WIL implementation challenges remain relating to: disjointed and insufficient preparation of learners for industry (Chad, 2020; Kosman et al., 2023; OECD, 2018; Winchester-Seeto & Piggott 2020); lack of placement opportunities (Jackson, 2017; Mokibelo & Seru 2020; Rook 2017; Vu et al., 2021); uncoordinated monitoring (Billette 2022; Grollmann et al., 2021; Simper et al., 2018); the complexity of coordinating and assessing students' workplace learning (Aijawi et al, 2020; Boud et al., 2023; Scholtz 2020); and weak WIL partnerships (Adam et al., 2018; McGill et al., 2021; Rook, 2017). WIL implementation challenges do not only reflect inadequate lecturer preparation by universities, but also weaknesses in the education system.

Consequently, recent studies emphasise the importance of strengthening WIL partnerships between education institutions and workplaces (Mesuwini & Mokoena, 2024; Njengele et al, 2024). to strengthen collaboration in lecturer development. Such collaboration needs intervention and support by government and other relevant stakeholders at systemic level, hence this article places emphasis on an activity theory-informed framework that reveals systemic contradictions. The proposed framework fills the gap in existing frameworks

which frequently focus on student outcomes and employability and not on the implementation of workplace learning in lecturer education.

2.4 International Models on WIL in Teacher Education

Several studies highlight international frameworks from countries that include Germany, Australia, Canada, United Kingdom and Finland (Aakrog, 2020; Billett, 2020; Martínez-Morales & Marhuenda-Fluixá, 2020; Vaughan, 2017). These countries have established vocational education and workplace learning systems that are useful for comparing lecturer industry exposure requirements and providing a benchmark for integrating workplace learning and vocational education in South Africa. One example is the dual system in Germany which has strong employer involvement, alternation between workplace and vocational school, formal industry supervision, and shared responsibility among state, industry and education providers (Billett, 2020). Another example is the Nordic model in Finland that requires lecturers to have substantial industry experience before entering teaching (Rintala & Nokelainen 2020).

Unlike Germany, Finland, or Australia, studies indicate that South Africa faces unique challenges associated with uneven industry participation, resource constraints, varying workplace availability (Jackson, 2017; Mokibelo & Seru 2020; Rook 2017), and the recent introduction of occupational qualifications within TVET colleges. Therefore, existing international models cannot be transferred directly without adaptation. A comparative analysis of the proposed framework and other international frameworks is reflected in Table 1 and 2, to indicate adaptation and influence in the proposed implementation framework.

Table 1: A comparative analysis of the proposed activity theory-informed framework and other international frameworks

Dimension	Proposed framework	Germany	Australia	Canada	Finland
Policy support	✓	✓	✓	✓	✓
Industry partnerships	✓	✓✓	✓	✓	✓
Workplace immersion	✓	✓✓	✓	✓	✓
Activity theory perspective	✓✓	No	No	Limited	Limited

Table 1 indicates that the proposed framework adds value because it allows for systematic comparison using activity theory, which is an adaptation to existing international frameworks. Table 2 focuses on two WIL models that influenced the development of the proposed framework, namely, the German dual system and the Canadian model.

Table 2: The German dual system and the Canadian model

The German Dual Model/System				
WIL purpose in TVET lecturer education	Industry involvement	Pedagogical integration mechanism	Lecturer competency focus	Lessons learned for South Africa
To ensure vocational teachers possess current occupational expertise and can bridge theory and workplace practice	Strong and institutionalised through the dual system. Employers, Chambers of Commerce, and vocational schools jointly support vocational education and teacher development.	Workplace experience is integrated into teacher preparation and professional development. Reflection on occupational practice informs teaching and curriculum design.	Vocational pedagogical knowledge, reflective practice, curriculum innovation, and partnership competence.	WIL should be embedded as a systemic and compulsory component of lecturer education rather than a once-off placement activity.
The Canadian Model				
WIL purpose in TVET lecturer education	Industry involvement	Pedagogical integration mechanism	Lecturer competency focus	Lessons learned for South Africa
To enhance employability-oriented teaching through experiential learning and industry partners	Collaborative partnerships between colleges, employers, professional bodies, and communities	Structured internships, apprenticeships, industry projects, mentorships, and reflective learning activities.	Experiential learning facilitation, industry collaboration, curriculum responsiveness, and learner employability.	Strong partnerships and clearly defined learning outcomes can improve the relevance and quality of lecturer WIL programmes.

Tables compiled by authors from the literature, including Vaughan (2017), Billett (2020) Wheelahan (2022).

The lessons that can be learned for South Africa from these models are reflected in the last columns of the tables. Influenced by the German dual system, the proposed implementation framework presents WIL as a systemic activity that needs the attention of all relevant stakeholders. The Canadian model emphasises strong partnerships which form an integral part of the proposed framework. By adapting these frameworks, the proposed activity theory-informed framework becomes internationally informed and locally relevant. The framework has a theoretical contribution because it shifts attention from the value of workplace learning itself towards the systemic conditions required for its successful implementation.

2.3 Theoretical Framework

The study was underpinned by Engeström's (2001) activity theory which allows the researcher to explore "who is doing what, why and how" (Hasan, 2014, p. 9). Activity theory conceptualises human activity as a socially mediated system consisting of six interrelated elements: subject, object, tools, rules, community, and division of labour. The theory was used to examine how university and industry stakeholders interact to achieve the shared object of implementing industry-based WIL for TVET lecturer development.

The study also drew on Engeström's (2010) theory of expansive learning, which proposes that contradictions within activity systems stimulate improvement in learning, innovation and transformation. Expansive learning provided an analytical lens for understanding how stakeholders collectively respond to implementation challenges and develop new practices that support effective WIL implementation.

While industry-based WIL is often treated as an individual lecturer development activity, activity theory revealed a coordinated system involving employers, SETAs, universities, and government agencies. The actors within the system included:

- Subjects (university lecturers)
- Object (industry competence development)
- Tools (placement plans, mentoring, logbooks, funding)
- Rules (policies and agreements)
- Community (employers, SETAs, universities)
- Division of labour (roles and responsibilities)

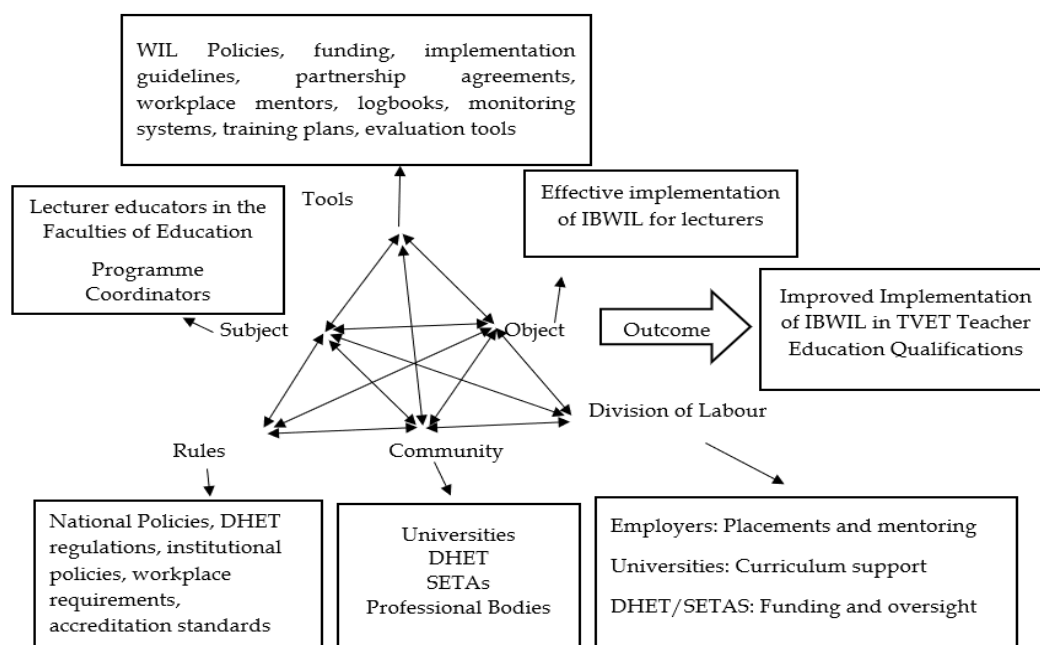


Figure 1: The university and industry activity systems

Figure 1 shows two interacting systems, the university teacher education system, and the industry workplace system, with subject, object, tools, rules, community and division of labour as the components of the system.

In Figure 1, many role players (e.g., universities, and workplaces), share one object (i.e., goal), which is effective implementation of IBWIL for TVET college lecturers. The role players are well-informed about policy requirements that emphasise the need for stronger industry engagement but have limited guidance regarding the processes, partnerships, resources and governance arrangements required for effective implementation. As a result, their industry-based WIL is characterised by fragmented practices, inconsistent stakeholder participation and uneven learning opportunities. While previous studies have largely focused on the benefits of workplace exposure, less attention has been paid to the systemic conditions that enable successful implementation.

Addressing this gap, this study draws on activity theory to conceptualise industry-based WIL as a collective activity system involving lecturers, employers, colleges, universities, government agencies and intermediary bodies. The study proposes an implementation framework that identifies the key components, relationships and processes required to support effective planning, coordination, monitoring and evaluation of industry-based WIL in TVET lecturer education.

3. Methodology

3.1 Research Paradigm

The study is situated within the interpretivist paradigm, which seeks to understand how individuals and groups construct meaning from their experiences and social interactions. The interpretivist perspective was considered appropriate because the study aimed to explore how lecturers, workplace mentors, universities and industry partners experience and make sense of the planning and implementation of industry-based work-integrated learning (WIL) in TVET teacher education. Rather than measuring predetermined variables, the study sought to gain an in-depth understanding of the processes, relationships, tensions and contextual factors that influence the implementation of industry-based WIL.

3.2. Research Approach

A qualitative research approach was adopted to generate rich descriptions and explanations of stakeholder experiences and perceptions regarding industry-based WIL implementation. Qualitative inquiry was particularly suitable because the study sought to examine complex social interactions, collaborative practices and systemic challenges that cannot be adequately captured through quantitative measures alone. The study was further informed by cultural-historical activity theory (CHAT) and Engeström's theory of expansive learning. Activity theory provided a conceptual lens for analysing the relationships among actors, tools, rules, communities and divisions of labour within and between university and industry activity systems. Expansive learning complemented this perspective by explaining how stakeholders collectively identify contradictions, negotiate solutions and develop new forms of practice.

3.3 Research Design

The study employed a qualitative multiple-activity-system case study design. The case comprised the implementation of industry-based WIL within a TVET teacher education qualification that includes a workplace learning component. Two interacting activity systems formed the unit of analysis:

1. The university activity system responsible for designing, coordinating and supporting lecturer workplace learning; and
2. The industry activity system responsible for hosting, mentoring, and supporting lecturer workplace learning experiences.

The case study design enabled an in-depth examination of the interactions, relationships, and contradictions that emerged between these activity systems during the planning and implementation of industry-based WIL.

3.4 Research Site and Context

The study was conducted within a university-based TVET teacher education programme that incorporates a compulsory industry-based WIL component. The programme requires enrolled TVET lecturers to undertake structured workplace learning experiences in relevant industry settings. The study focused on the relationships between the university, participating workplaces, workplace mentors, and enrolled lecturers involved in the implementation of the WIL component.

3.5 Population and Sampling

The population of the study consisted of two stakeholder groups directly involved in the implementation of industry-based WIL:

- University lecturers responsible for developing and offering TVET lecturer qualifications for the first time in the history of South Africa; and
- Workplace mentors or supervisors responsible for supporting and monitoring TVET lecturer workplace learning.

Sampling was purposive because participants were selected based on their involvement in industry-based WIL. The sample included 16 university lecturers and 16 workplace mentors or supervisors.

3.6 Data Collection

Data were collected using semi-structured interviews and document analysis.

3.6.1 Semi-Structured Interviews

Data were collected through semi-structured interviews with university lecturers and workplace mentors. University lectures were divided into two focus groups of eight participants in an industry-based WIL capacity building workshop that was organised by the South African Department of Higher Education and Training (DHET) to explain policy and implementation requirements. Each university lecturer from 16 universities accredited to offer TVET lecturer qualifications was requested to submit the name of one organisation with one workplace mentor willing to provide placement opportunities for TVET lecturers. Individual semi-structured interviews were conducted with 16 suggested workplace mentors. Semi-structured interviews were selected because

they provided sufficient flexibility to explore participants' experiences while ensuring alignment with the research objectives. The sample of 16 university lecturers and 16 workplace mentors was appropriate for the purpose of this qualitative study, which was not to generalise the findings, but to examine the interactions, relationships and contradictions that emerged between two activity systems.

The following interview questions were explored:

- planning and implementation processes
- stakeholder roles and responsibilities
- workplace learning experiences
- collaboration between university and industry partners
- challenges and contradictions encountered during implementation
- enabling factors and critical success factors
- recommendations for strengthening industry-based WIL implementation

Researchers conducted in person interviews from March 2017 to June 2019. After obtaining consent from the participants, the researchers audio-recorded and transcribed the interviews.

3.6.2 Document Analysis

The analysis of documents was conducted to provide contextual understanding and triangulate interview findings. Analysed documents included:

- WIL policies and guidelines
- workplace learning agreements
- programme documents
- assessment guidelines
- placement records
- monitoring and evaluation reports

Document analysis assisted in identifying formal expectations, implementation procedures and governance arrangements associated with industry-based WIL.

3.7 Data Analysis

Braun and Clarke's (2022) reflexive thematic analysis was used to analyse the interviews. This analysis was combined with Activity Theory-informed coding and contradiction analysis. A hybrid thematic analysis approach was adopted:

- For identifying emerging themes from participants' experiences, the researchers used inductive analysis.
- For using activity theory constructs (subject, object, tools, rules, community, division of labour, contradictions) as analytical categories, the researchers used deductive analysis. The study therefore used a theory-informed thematic analysis following the steps indicated below.

1. The first step was data preparation. All interviews were audio-recorded and transcribed verbatim. The researcher listened to recordings repeatedly, checked transcripts against recordings for accuracy, and removed identifying information to ensure confidentiality. The purpose was to familiarise the researcher with the data and ensure data quality.

2. During the second stage, the researchers read the transcripts repeatedly to familiarise themselves with the collected data. Preliminary ideas were noted and recurring patterns identified. Examples included the following ideas:

- unclear stakeholder responsibilities
- lack of support for workplace mentors
- weak university-industry partnerships

The third stage was initial coding in which transcripts were analysed line-by-line, and meaningful statements were assigned codes. Examples of initial coding are reflected in Table 1 below.

Table 1: Initial Coding

Raw data	Initial code
"We need a dedicated person to form industry partnerships and place TVET lecturers"	Lack of human resources (no support)
"Nobody explained our roles clearly"	Role ambiguity
"We are not aware of any agreements with industry"	No partnership agreements

At this stage, coding remained close to participant language.

4. During the fourth stage, the initial codes were grouped and organised according to activity theory components, as indicated in Table 2.

Table 2: Activity Theory Components

Activity Theory Element	Sample codes
Subject	Lecturer preparedness
Object	Purpose of WIL
Tools	Logbooks, mentoring, guidelines
Rules	Policies, assessment requirements
Community	Employers, universities
Division of labour	Roles and responsibilities

This stage helped link empirical findings to the theoretical framework.

5. The researcher analysed relationships between activity theory components to identify contradictions and tensions, as indicated in Table 3.

Table 3: Contradictions and Tensions

Contradiction	Evidence
Subject ↔ Tools	Lecturers expected to participate but lacked support- no placement officer to perform administrative duties
Rules ↔ Subject	Workload prevented participation
Community ↔ Object	Employers prioritised productivity
Division of Labour ↔ Object	Stakeholder roles unclear

These contradictions became key analytical themes.

6. The sixth stage was the generation of themes in which related codes were grouped into broader themes and subthemes, as indicated in Table 4.

Table 4: Generation of Themes

Theme	Subtheme 1	Subtheme 2	Subtheme 3
1. Planning and coordination	Stakeholder engagement	Placement arrangements	Communication mechanism
2. Contradictions in WIL implementation	Policy-practice gaps	Role ambiguity	Resource constraints
3. Enabling conditions for effective WIL	Industry partnerships	Mentor support	Institutional commitment
4. Possible collaborative learning and system development (Expansive)	Shared problem-solving	Stakeholder learning	Emerging implementation practices
5. Framework components for effective WIL implementation	Governance structures	Partnerships mechanisms	Monitoring and evaluation processes.

7. The seventh stage was the reviewing and refining of themes to ensure coherence within themes, distinction between themes and alignment with research objectives. The themes were continuously compared against the original transcript.

The eighth stage was the interpretation of the themes through Engestrom's (2010) expansive learning cycle. The findings and evidence were examined for:

1. Questioning existing practices
2. Analysing contradictions
3. Developing new solutions
4. Testing new approaches
5. Reflecting on implementation
6. Institutionalising new practices

9. The ninth stage was the development of the proposed activity theory-informed implementation framework. This stage was informed by the final themes, contradictions and planned expansive learning processes.

The framework incorporated:

- stakeholders
- roles and responsibilities
- implementation processes
- enabling conditions
- mechanisms for collaboration
- monitoring and evaluation processes

Table 5 shows transition from findings to framework development.

Table 5: Transition from Findings to Framework Development

Theme	Activity theory element	Contradiction	Evidence	Implication
1. Planning and coordination	Rules	Policy versus practice	"There are no clear guidelines on how to do this" (Lecturer C)	Need clearer procedures
2. Mentorship	Tools	No support	"Mentoring lecturers, not learners, will be a challenge for us" (Workplace mentor H)	Mentor training needed
3. Partnerships	Community	Weak collaboration	"We have not met to plan the implementation" (Both lecturer D and Mentor D)	Formal agreements needed.

Thematic analysis was conducted iteratively, moving continuously between the data, codes, themes and theoretical concepts.

3.8 Trustworthiness of the Study

To ensure the trustworthiness of the study, the researchers used Ahmed's (2024)'s criteria of credibility, dependability, transferability, and confirmability. Member checking, triangulation, and data engagement were used to enhance credibility. The informants were provided with opportunities to verify interpretations of their responses. Dependability involved a traceability record for documenting decisions related to the methodology, coding procedures, and analytical processes throughout the study. For transferability, rich descriptions of the research context, participants and implementation processes were provided to enable readers to determine the applicability of findings to other contexts. Confirmability was achieved through reflexive memos and detailed records of analytical decisions that were maintained to ensure that interpretations remained grounded in participant accounts and documentary evidence.

3.9 Ethical Considerations

Before data collection, the relevant university was approached to obtain ethical clearance. Permission was also obtained from participating institutions and workplaces. Participants were provided with information sheets about the study and were requested to sign consent forms before participating. They were informed that participation was voluntary and that they had the right to withdraw. Pseudonyms from A to P were used to maintain confidentiality and anonymity. Transcribed data were securely stored.

3.10 Methodological Limitation

The exclusion of prospective beneficiaries (i.e., TVET college lecturers who are students) was a methodological limitation of the study because the student voice would have added value in shaping the implementation framework.

4. Findings

The objectives of the study were used to guide the presentation of the findings and organise them into five themes obtained from the thematic analysis of interviews.

4.1 Theme 1: Planning and Coordination of Industry-based WIL

4.1.1 *Shared Recognition of the Importance of Industry-Based WIL*

Participants viewed industry-based WIL as an essential component of TVET lecturer development. University lecturers indicated that workplace exposure will enable TVET college lecturers to remain current with industry practices, technologies, and occupational standards. Workplace mentors similarly recognised the value of exposing lecturers to authentic work processes and contemporary industry expectations.

4.1.2 *Variability in Planning Processes*

Despite agreement regarding the value of WIL, participants reported considerable variation in planning and coordination practices. Some placements were carefully planned through collaborative engagement between universities and workplaces, while others were characterised by limited consultation and unclear expectations.

4.1.3 *Limited Pre-placement Preparation*

Several participants reported insufficient preparation prior to TVET lecturer placements. Uncertainty regarding learning outcomes, assessment requirements and workplace expectations was identified as a common concern.

4.2 Theme 2: Contradictions and Tensions in WIL Implementation

4.2.1 *Contradictions Between Policy Expectations and Institutional Capacity*

Participants reported that policies strongly promote workplace learning for TVET lecturers. However, institutions often lacked the resources, funding and administrative capacity necessary to support implementation effectively. “We require a dedicated placement officer and funding to do this” (Statement from Lecturer J).

Lecturers frequently indicated that workload pressures limited their ability to participate fully in workplace learning activities. “With my heavy teaching load, it will be impossible for me to be involved in workplace learning” (Statement from Lecturer K).

4.2.2 *Role Ambiguity and Unclear Responsibilities*

A recurring challenge involved uncertainty regarding stakeholder responsibilities. Participants expressed differing expectations regarding the roles of universities, employers, workplace mentors and lecturers. “The supervision of lecturers’ workplace learning will be a problem because I do not have a teaching

qualification” (Statement from Mentor D). This ambiguity often resulted in communication challenges and inconsistent implementation practices.

4.2.3 Tensions between Educational and Production Objectives

Workplace mentors highlighted tensions between supporting lecturer learning and meeting organisational productivity requirements. While workplaces were generally supportive of lecturer development, operational demands of the workplace sometimes prevented meaningful workplace participation. “I have limited time to support lecturer learning and meet productivity requirements” (Statement from Mentor B).

4.2.4 Communication and Coordination Challenges

Participants identified communication gaps between universities and industry partners as a significant implementation challenge. In some cases, workplace mentors reported receiving insufficient information regarding lecturer placements. “I know about the placements of college students. I was not informed about lecturer placements” (Statement from Mentor M).

4.3 Theme 3: Enabling Conditions for Effective WIL Implementation

4.3.1 Strong University-Industry Partnerships

Participants consistently identified collaborative partnerships as a critical success factor. Ongoing communication, shared expectations and mutual commitment to lecturer development were mentioned as success factors for effective placements.

4.3.2 Workplace Mentorship

Workplace mentors emerged as a key mediating factor in successful implementation. Structured mentoring was reported as a necessary mechanism for providing meaningful workplace learning experiences and building confidence to navigate workplace environments.

4.3.3 Institutional Support and Resource Availability

Successful implementation was associated with institutional commitment, dedicated coordination mechanisms, funding support and clear implementation guidelines.

4.3.4 Alignment Between Workplace Activities and Learning Outcomes

Participants emphasised the importance of aligning workplace activities with qualification requirements and professional development goals.

4.4 Theme 4: Collaborative Learning and System Transformation

4.4.1 Recognition of Systemic Challenges

Participants demonstrated awareness of implementation challenges and expressed a willingness to improve existing practices.

4.4.2 Development of Collaborative Solutions

Examples of collaborative problem-solving included the establishment of stronger communication channels, improved mentoring arrangements and more structured placement planning processes.

4.4.3 Emergence of New Implementation Practices

Several participants described innovative approaches to partnership development, workplace supervision and monitoring to improve the quality of implementation. These developments reflected collective learning processes among stakeholders.

4.5 Theme 5: Towards an Activity Theory-Informed Implementation Framework

4.5.1 Critical Components of Effective Implementation

The participants identified several essential components for successful implementation, namely:

- Clear stakeholder roles and responsibilities
- Structured partnership agreements
- Workplace mentor preparation
- Dedicated coordination mechanisms
- Monitoring and evaluation systems
- Sustainable funding arrangements

4.5.2 Proposed Framework Elements

The findings suggest that effective implementation requires alignment among:

- stakeholders
- rules and policies
- implementation tools
- communication mechanisms
- workplace learning opportunities
- evaluation processes

The proposed implementation framework seeks to integrate these elements within a coherent system of collaboration between universities and industry partners. Overall, the findings indicate that while stakeholders strongly support industry-based WIL, implementation remains constrained by multiple systemic contradictions. At the same time, the study identified several enabling conditions and examples of collaborative learning that provide a foundation for strengthening implementation practices.

5. Discussion

In this section, the findings are discussed according to the study objectives, literature, activity theory, and expansive learning.

5.1 Industry-Based WIL as a Multi-Activity System

The findings confirm that industry-based WIL is collective rather than individualistic. It involves multiple stakeholders operating within interconnected activity systems. Universities, workplaces, lecturers, and mentors contribute to achieving the shared object of lecturer workplace learning. This finding supports activity theory's proposition that human activity is socially mediated and dependent upon collaboration among members of a community (Engestrom, 2001).

5.2 Contradictions as Drivers of Implementation Challenges

The findings revealed several contradictions within and between activity systems.

5.2.1 *Policy expectations versus institutional capacity*

A major contradiction emerged between policy and practice. Although stakeholders supported WIL, inadequate resources, funding constraints and administrative challenges limited implementation effectiveness. These challenges are similar to those indicated by Van der Bijl and Taylor (2020).

5.2.2 *Shared objectives versus ambiguous responsibilities*

The study found that while stakeholders shared a commitment to lecturer development, responsibilities were often poorly defined. This contradiction was particularly evident within the division of labour component of the activity system. The finding on poorly defined responsibilities is also documented by Agoki and KisiaMaasai (2017).

5.2.3 *Educational goals versus workplace productivity*

Tensions between educational objectives and workplace production requirements represented a significant contradiction between university and industry activity systems. Similar tensions have been identified in broader WIL literature (Arinaitwe et al., 2022; Winberg & Garraway, 2020) where learning and productivity priorities compete for attention.

5.2.4 *Expansive learning and the development of new practices*

The findings suggest that stakeholders responded to the questions on implementation challenges through processes consistent with Engeström and Sannino's (2010) expansive learning cycle. Participants questioned existing implementation practices, analysed underlying challenges, and collaboratively developed alternative approaches. Improved communication structures, strengthened partnerships, and enhanced mentoring arrangements represented examples of emerging solutions. These findings indicate that implementation is not a linear process of policy enactment but rather an ongoing process of collective learning and adaptation. A similar process of collaborative learning for improvement is documented by Xiong (2024).

5.3 Success Factors for Effective Implementation

The study identified several enabling conditions that support successful implementation:

- strong university-industry partnerships
- clear stakeholder roles
- effective workplace mentoring
- institutional commitment
- dedicated coordination mechanisms
- adequate resourcing
- structured monitoring and evaluation systems

These factors function as mediating tools that support the achievement of the shared object of industry-based WIL implementation. Strong industry

partnerships are documented as a success factor by Mesuwini and Mokoena (2024) and Njengele et al. (2024).

5.4 The Proposed Activity Theory-Informed Implementation Framework

The findings demonstrated that successful implementation requires alignment among the six components of the activity system. The proposed framework, therefore emphasises:

1. A shared implementation object
2. Clearly defined stakeholder responsibilities
3. Formal partnership arrangements
4. Effective communication structures
5. Workplace mentoring systems
6. Monitoring and evaluation mechanisms
7. Continuous stakeholder learning and improvement

The framework positions contradictions not as barriers to implementation but as opportunities for learning, innovation and system transformation.

Figure 2 shows processes for the proposed WIL implementation framework for South African TVET lecturer education.

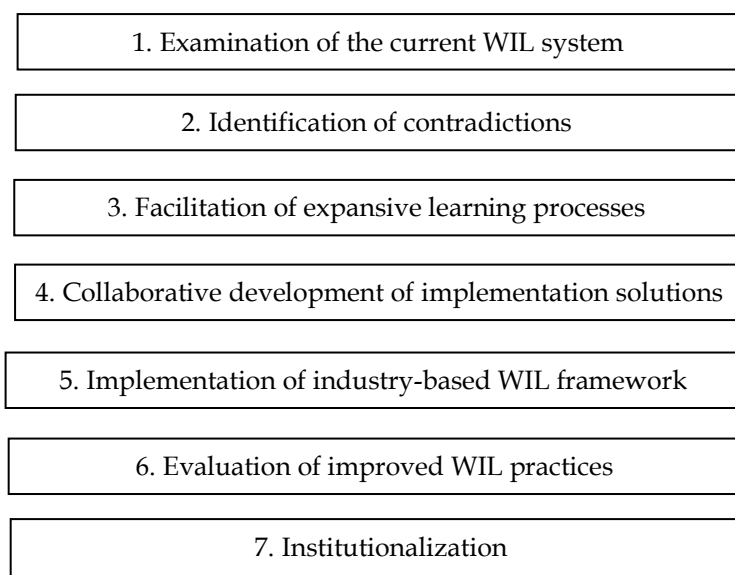


Figure 2: Processes for the proposed WIL implementation framework

6. Implications of the study

The implications are that:

6.1 The South African 2013 WIL policy must be revised to include the implementation processes, roles, responsibilities, and quality assurance measures for TVET teacher education. It must align TVET teacher education policies, TVET college policies, and industry skills development strategies.

6.2 Industry partners must have resources to support workplace mentors and supervision activities while universities must have sufficient human resources for

WIL, funding for developing and maintaining partnerships, and digital systems for tracking placements.

6.3 Universities must provide staff training in WIL coordination, supervision, and partnership management. They must collaborate with workplaces to train workplace mentors to support student teachers in industry training.

6.4 For future research, the framework provides a foundation for evaluation studies and comparative international research and supports the development of contextually relevant African WIL models rather than reliance on imported frameworks.

7. Recommendations

The study recommends that:

7.1 Policymakers must develop national implementation guidelines for TVET teacher education; encourage collaboration among higher education institutions, TVET colleges, and industry stakeholders; develop national monitoring and evaluation indicators for WIL implementation; and create dedicated funding mechanisms to support TVET lecturers' workplace learning.

7.2 Universities must institutionalise the proposed WIL framework within TVET teacher education programs, establish dedicated WIL units for partnership coordination and placement management, integrate workplace learning outcomes into the curriculum design and assessment practices, and develop partnership agreements with TVET colleges and industry

7.3 Industry partners must regard workplace mentoring as a strategic contribution to skills development, participate in the curriculum development and assessment processes, and collaborate with the university to ensure quality WIL programmes.

7.4 Future research must pilot and evaluate the proposed framework across multiple universities, examine its effectiveness in improving lecturers' occupational competence, and conduct comparative studies between the South African and international TVET WIL models.

8. Conclusion

This study examined the implementation of industry-based work-integrated learning (WIL) in TVET teacher education through the lens of activity theory and expansive learning. The findings show that effective implementation depends on far more than securing workplace placements. It requires coordinated collaboration among universities, employers, workplace mentors, lecturers, and intermediary bodies, supported by clear policies, resources, communication structures and governance arrangements.

The study identified several contradictions within and between university and industry activity systems, including tensions between policy expectations and institutional capacity, educational objectives and workplace production demands,

and shared goals versus unclear stakeholder responsibilities. These contradictions help explain why implementation is often fragmented and inconsistent. The findings also indicate that such tensions can stimulate collective problem-solving and organisational learning.

A key theoretical contribution of the study is the extension of WIL discussions beyond participation and outcomes towards implementation processes. By integrating activity theory and expansive learning, the study provides a systemic explanation of how industry-based WIL must be organised, experienced and transformed through stakeholder collaboration. The study also has a practical contribution as it provides an implementation framework that can support the planning, coordination, monitoring and evaluation of industry-based WIL within TVET teacher education.

The study concludes that industry-based WIL will not be strengthened through policy mandates alone; it requires alignment of university and industry activity systems through sustained collaboration, shared responsibility and continuous expansive learning. The proposed framework provides a practical and theoretical foundation for improved planning and coordination of industry-based WIL in the South African TVET sector.

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Appendix 1: Interview Schedule for Faculty of Education staff

Section A: Background Information

1. Please describe your current lecturing position and vocational specialisation.
2. Did you teach in the TVET sector before joining the university?
3. What industry experience did you have before lecturing at the university?

Section B: Planning of Industry-Based WIL

Objective 1

4. What will be the purpose (outcomes) of the industry-based WIL component of the TVET qualification? (What would you like students to achieve?)
5. Who will be involved in planning the workplace learning component of your TVET qualification?
6. What will be the role and responsibility of the workplace during the planning phase?
7. What will be the role and responsibility of your faculty during the planning phase?
8. What criteria will you use to recruit students for your TVET qualification?
9. How will you prepare students before they go the workplace?
10. What support structures will you need for the planning phase of the qualification?
11. How will you form partnerships with workplaces?

Section C: Implementation of Industry-Based WIL

12. Who will be involved in implementing the workplace learning component of the TVET qualification?
13. What will be the role and responsibility of the workplace during the implementation phase?
14. What will be the role and responsibility of your faculty during the implementation phase?
15. What support structures will you need for the implementation phase of the qualification?
16. What activities will you expect students to undertake in the workplace?
17. How will the activities relate to the teaching specialisation?
18. How will students be supported in the workplace?
19. How will placed students be supported by the university?
20. How will students' workplace component be assessed?
21. How will your faculty maintain partnerships with industry?

Section D: Contradictions and Tensions

Objective 2

22. What challenges will your faculty have to plan for the implementation of the industry-based WIL component?
23. How will the faculty try to meet workplace expectations?
24. How will the faculty encourage the workplace to meet the faculty's expectations?
25. Will there be conflicts between your teaching responsibilities and the requirements of the industry-based WIL component? Please explain.

26. What will be the organisational, administrative, or communication challenges during the implementation of the industry-based WIL component?
27. What systemic challenges will be beyond the scope of the faculty and the university?

Section E: Success Factors and Enabling Conditions

Objective 3

What are enabling factors for the successful planning and implementation of the industry-based WIL component of TVET qualifications?

Section F: Recommendations for the Framework

Objective 4

28. What recommendations would you make for the successful implementation of the industry-based WIL component in TVET teacher education?
29. What should universities do?
30. What should employers do?
31. What partnerships or support systems are needed to strengthen implementation?
32. What would an ideal industry-based WIL programme look like?

Interview schedule for workplace mentors / supervisors

Section A: Background Information

33. Please describe your current lecturing position and vocational specialisation.
34. Did you teach in the TVET sector before joining the university?
35. What industry experience did you have before lecturing at the university?

Section B: Planning of Industry-Based WIL

Objective 1

36. What will be the purpose (outcomes) of the industry-based WIL component of the TVET qualification? (What would you like students to achieve?).
37. Who will be involved in planning the workplace learning component of your TVET qualification?
38. What will be the role and responsibility of the workplace during the planning phase?
39. What will be the role and responsibility of your faculty during the planning phase?
40. What criteria will you use to recruit students for your TVET qualification?
41. How will you prepare students before they go the workplace?
42. What support structures will you need for the planning phase of the qualification?
43. How will you form partnerships with workplaces?

Section C: Implementation of Industry-Based WIL

44. Who will be involved in implementing the workplace learning component of the TVET qualification?

45. What will be the role and responsibility of the workplace during the implementation phase?
46. What will be the role and responsibility of your faculty during the implementation phase?
47. What support structures will you need for the implementation phase of the qualification?
48. What activities will you expect students to undertake in the workplace?
49. How will the activities relate to the teaching specialisation?
50. How will students be supported in the workplace?
51. How will placed students be supported by the university?
52. How will students' workplace component be assessed?
53. How will your faculty maintain partnerships with industry?

Section D: Contradictions and Tensions

Objective 2

54. What challenges will your faculty have to plan for the implementation of the industry-based WIL component?
55. How will the faculty try to meet workplace expectations?
56. How will the faculty encourage the workplace to meet the faculty's expectations?
57. Will there be conflicts between your teaching responsibilities and the requirements of the industry-based WIL component? Please explain.
58. What will be the organisational, administrative, or communication challenges during the implementation of the industry-based WIL component?
59. What systemic challenges will be beyond the scope of the faculty and the university?

Section E: Success Factors and Enabling Conditions

Objective 3

What are enabling factors for the successful planning and implementation of the industry-based WIL component of TVET qualifications?

Section F: Recommendations for the Framework

Objective 4

60. What recommendations would you make for the successful implementation of the industry-based WIL component in TVET teacher education?
61. What should universities do?
62. What should employers do?
63. What partnerships or support systems are needed to strengthen implementation?
64. What would an ideal industry-based WIL programme look like?

Appendix 2: Interview Schedule for Workplace Mentors/Supervisors

Section A: Background Information

1. Please describe your position and responsibilities within the organisation.
2. How long have you been supervising or mentoring staff or trainees?
3. Have you previously supervised TVET lecturer WIL placements?

Section B: Planning and Collaboration

Objective 1

4. How did your organisation become involved in the WIL programme?
5. What information did you receive from the university regarding the placement?
6. How were the learning objectives communicated to you?
7. How clear were your responsibilities as a workplace mentor?
8. How would you describe the collaboration between your organisation and the university?

Section C: Implementation of WIL

Objective 1

9. What activities will the TVET college lecturer undertake during the placement?
10. How will you identify workplace learning opportunities?
11. How will you support and monitor the lecturer's learning?
12. What communication has taken place between your workplace and the university about lecturer placements?
13. What agreements are in place for implementing the industry-based WIL component of TVET qualifications?

Section D: Contradictions and Tensions

Objective 2

14. What challenges will you experience while hosting the lecturer?
15. How will your workplace meet university expectations?
16. What will be the challenges that will affect implementation?
17. How will these challenges affect the implementation of the industry-based WIL component?

Section E: Enabling Conditions

Objective 3

18. What factors will contribute to a successful IBWIL component?
19. What characteristics of lecturers will support successful workplace learning?
20. What characteristics of the workplace will support successful implementation?
21. What support does your workplace need from the university?
22. What incentives or support would encourage greater industry participation?

Section F: Recommendations for the Framework**Objective 4**

23. What improvements would strengthen collaboration between universities and industry?
24. What systems or processes should be introduced to improve implementation?
25. How can communication between stakeholders be improved?
26. What roles should industry partners play in future WIL programmes?
27. What must be the role of the university?
28. What key elements should be included in an effective industry-based WIL implementation framework?
29. How must barriers to effective implementation of the IBWIL be addressed?