

Journal of Vocational, Adult and Continuing Education and Training



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A large circular graphic on a yellow background. The circle is white and contains a stylized map of the African continent in orange and red watercolor-like colors. The text 'Journal of Vocational, Adult and Continuing Education and Training' is written in a black, sans-serif font, curving around the perimeter of the circle.

Journal of Vocational, Adult and Continuing
Education and Training



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The Journal of Vocational, Adult and Continuing Education and Training

The Journal of Vocational, Adult and Continuing Education and Training (JOVACET) recognises the need for critical engagement through studies in technical and vocational education and training (TVET) and adult and continuing education and training, and for encouraging critical scrutiny of this expansive knowledge area on the African continent.

The voices and experiences of practitioners, reflecting on all aspects of teaching and learning within vocational education and adult education settings, should be heard through the publication of empirical and robust research. While the journal wishes to take forward academic scholarship, it also seeks to strengthen opportunities for reflective practice that makes a scholarly contribution to the field. New knowledge emerging out of complex developmental contexts has significant value and needs to be showcased beyond existing geographical and political boundaries. The journal is therefore committed to also supporting the development of emerging researchers by providing them with a space to present and defend their research amongst a network of global scholars. Within the field of vocational and continuing education there is substantive 'grey literature' that remains in project report form. The journal is potentially a vehicle for the translation of this important work into an academic contribution to a wider community of practice, thereby enhancing its value.

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Editorial

JOVACET SPECIAL ISSUE 2024

Research towards the continuous improvement of TVET in South Africa: Building the local knowledge base

Joy Papier

Editor-in-Chief

Background to the Special Issue

This special issue of JOVACET arose out of a targeted programme of research (the TVET Research Programme) undertaken in the public TVET college sector over a five-year period from 2019 to 2023 that was initiated by the national Department of Higher Education and Training (DHET) and supported by the National Skills Fund (NSF). The Institute for Post-School Studies at the University of the Western Cape led and coordinated a research partnership of seven public universities and four private research entities, a partnership that yielded over 30 research reports during the five-year period. A concept document at the outset of the programme laid a foundation for the research, stating its aims and objectives, key national issues and debates, recent contextual information on the TVET college sector, and salient issues in the international vocational education domain that aligned with the objectives of the proposed research programme.

In various countries, efforts to improve the attractiveness of a vocational pathway for youth and adults have raised questions about the relevance, purpose, and content of vocational education and training, and debates on these matters have recognised the need for a sustained research programme to shed light on some of the sector's critical questions. Hence, the themes and topics devised by the research programme partners attempted to address the dearth of much-needed data on the TVET college sector in South Africa. Some topics had been the subjects of past studies that needed updating, while others had to establish a baseline from which to move forward. Furthermore, the programme acknowledged the past 25 years of research in the field and the many lessons learned from engagement with the global academic community, being mindful particularly of policy-borrowing and international research endeavours in South Africa.

The broad aim of the TVET research programme was stated expansively as being: ‘to build a significant local body of knowledge to inform TVET policymakers, practitioners, prospective employers, and learners and their communities, about the input, practices, performance and outcomes of public TVET colleges, with a view to enhancing knowledge and understanding for the planning and delivery of interventions towards continuous improvement’. Specific objectives that informed the programme’s deliverables were to: improve information on the TVET college system, establish sustainable research processes and methodologies, link research to policy and practice and to build additional research capacity.

The five-year TVET Research Programme presented a unique opportunity to bring together policymakers, government officials, research practitioners and TVET providers to address a coherent and comprehensive agenda that spoke to focused policy needs as well as wider research interests. As a collaborative research undertaking that involved multiple partners, there was extensive knowledge-sharing and many lessons learned over the course of the programme. In drawing the programme activities to a close, DHET dedicated its annual research colloquium in November 2023 to the output of the research projects that had been completed, at which the various researchers presented their findings. It was agreed that as many presentations as possible would be written up as journal articles, be subjected to peer review and then published together in a special issue of JOVACET in 2024.

Contents of the Special Issue

Owing to the tight time-frames for this publication and the pressures faced by our hard-working academics and researchers, there was simply insufficient time for many prospective authors to turn their presentations into articles despite their best endeavours. In light of the submissions already received and being processed, the editorial committee decided to press ahead and honour the commitment to publish the special issue in 2024 (albeit up to the very last hour!). We are therefore very pleased to publish the articles that appear here, and salute these authors for getting to the finishing line under extreme duress.

The research colloquium referred to above, occurred under the rubric ‘Making TVET colleges institutions of choice’, and was privileged to host two international TVET experts as keynote speakers. Dr George Afeti, an expert on TVET in Africa, who has worked extensively in South Africa, and Mr Steve Bainbridge, formerly of CEDEFOP and an expert on European models of TVET, provided excellent African and international perspectives within which to situate the local South African research that had been produced in the research programme. Both speakers graciously agreed to further develop their keynote addresses into papers for this special issue and we publish them here as ‘thought pieces’ that enable the specifics of our project-based articles to be located within broader comparative contexts.

Research in South Africa and particularly in Africa has shown strong associations in official policies between TVET, employment, and economic prosperity, notwithstanding academic

debates (not entered into here) with regard to TVET that is viewed mainly from an economic, human capital development paradigm, vis-à-vis a perspective that focuses on personal growth and community benefits. Dr Afeti's paper notes the worrying (and rising) youth unemployment trend in Africa and the critical need for employable skills in the face of increasing demands for higher level technical skills. While emphasising a multi-faceted approach to skills development, Dr Afeti prioritises a good basic education with Science, Technology, Engineering and Mathematics (STEM) subjects to serve as the foundation for artisan development and a modern economy. He cautions, however, that context is crucial, as the realities of employment could vary greatly across countries; hence, he says, the need for relevant training based on sound research evidence – a sentiment that resonated strongly with the purpose of the TVET research programme.

Moving further afield onto the wider global stage, Mr Bainbridge's paper reflects on VET reform in Europe, through the so-called 'Copenhagen process' since 2002, and the notion of 'cooperation' that proved key to sustaining reform. In that context, European member states and other social partners came together at a high level to agree on VET objectives and priorities to be addressed over five to ten years. This cooperation received constant monitoring through regular reporting, revisiting of targets, and revision of objectives as necessary. The author holds that the process has benefited European countries by producing common instruments and principles. More importantly, and relevant also to TVET in Africa, the application of a cooperative approach has 'raised the profile of VET in other policy areas'. This keynote paper emphasises the principles of partnership, resources and keeping up the cooperation momentum 'to create effective partnerships and networks at the national, sectoral and local levels in order to bring about VET reform'. While in South Africa much has been done at the national and local level to achieve cooperation with sectors important to TVET development, there is still much to be done to bridge the siloes that exist in the education and training system and to achieve stronger and more meaningful levels of cooperation among TVET parties on the African continent.

Turning to the more specific research projects of the research programme, of which there are five, two submissions are industry-related and focus on substantive matters in TVET: that of employment outcomes and college-industry partnerships. In the first of these, Friderichs, Rogan, and Needham report on their study of the participation of women in TVET college programmes and their career prospects after completion. Annual statistical reports of DHET show that women are no longer under-represented in vocational education, and that the numbers of women enrolling are even exceeding that of male students. It had been the case in earlier studies that male students had tended to dominate the field of engineering studies, but the authors note that this has changed in recent times.

Friderichs et al., therefore, look beyond enrolment numbers to investigate whether the increased *enrolment* of women in TVET programmes has also meant the increased *employment* of women. Their tracer study reveals, sadly, that women TVET completers still face significant discrimination in the labour market, earning around 22 per cent less than men, in addition

to lower employment rates. While it is encouraging that more women are finding post-school learning opportunities, and in fields previously male-dominated, the authors argue that these strides are yet to be translated into ‘parity of employment opportunities and earnings’.

In the second article with an industry focus, Njengele, Engel-Hills, and Winberg’s article echoes the theme of cooperation expounded on in Bainbridge’s keynote address, in a study of partnerships between TVET colleges and industry employers. The White Paper on Post-School Education and Training (DHET, 2013) enjoins national Sector Education and Training Authorities to act as facilitators between companies in their domains, and TVET training providers, in the interests of enabling college students and lecturers to obtain relevant exposure to workplace practices in their fields. Despite this and many other policy initiatives aimed at encouraging industry–college partnerships, there is still a long way to go in this regard. This research identified elements of mutually beneficial partnerships and successful emerging practices that would be beneficial to probe further for purposes of building a wider culture of cooperation and mutual benefit between employers and colleges.

The theme of the next three research articles is ‘quality’ in TVET: the first relating to quality teaching and learning; the second to a quality management system for TVET lecturers; and the third interrogating the idea of a ‘quality’ TVET lecturer.

Papier and Mawoyo invert the lens prevalent in South Africa generally that focuses predominantly on the negative aspects of TVET colleges; for instance, with regard to low pass and throughput rates and other perceived ills. Their article reports on a project that deliberately sought out ‘successful’ colleges, using as a proxy for this the colleges that consistently reflected high pass rates in official annual statistics. The objective of this research was to identify positive teaching and learning practices/models that were considered to be enhancing student outcomes. A meta-review of the literature on successful VET teaching and learning was conducted as a basis for further investigation through qualitative fieldwork. The empirical evidence confirmed many of the elements of institutional quality identified in the literature, and showed that despite the constraints of resources and other challenges, many colleges and lecturers were doing their best to provide students with good quality learning experiences that were producing successes.

Next, Paterson, Keevy and Vally concretise the notion of quality by considering TVET colleges’ quality performance system of appraisal in relation to the continuing professional development (CPD) of college lecturers. The authors contend that a performance management system is ‘intended to support an improvement in lecturer quality and accountability, strengthens student graduation rates and feeds national human resource development for sustainable employment’. Their data gathering and analysis informed the iterative development of a systems model based on causal loop analysis (CLA) which enabled the multiple relationships and feedback loops to be represented visually, and offering a platform for further research towards improving the management system for college lecturers.

Finally, on this theme, Wedekind, Russon, Liu, Zungu and Li further engage in problematising the concept of quality in TVET with regard to a ‘quality lecturer’, a much over-used term in policy discourse. Since the institution of prescribed college lecturer qualifications through national policy in 2012, college lecturers in South Africa are obligated to obtain relevant TVET teaching qualifications. Using Bourdieu’s conceptual framework of ‘fields’, the authors argue that the quality of vocational teachers depends on vocational educators being able to ‘look both ways’ (Barnett, 2006)¹, since they straddle the fields of education and industry. Consequently, college lecturers need training/exposure in the industry relevant to their field as well as the specialised pedagogic qualification, and that focusing on only the educational aspect while ignoring the industry aspect will ultimately have little effect on building overall lecturer quality.

In conclusion

The output of the five-year research programme has been communicated via various means and platforms; for instance, through well-attended regular online seminars as projects were completed, in an accessible repository housed by DHET, in face-to-face colloquia, in papers published in various journals, and now in this special issue of JOVACET. We are grateful to the researchers who contributed to this special issue, DHET, and the NSF, for entrusting us with disseminating the results of these research endeavours. We trust that it will find purchase in the sectors for which it holds most relevance and act as a springboard for further research.

JOVACET continues to shine a light on TVET and Adult Education scholarship, but it has not been without tremendous effort, and the goodwill of our authors, peer reviewers, editorial board and committee members, and the many readers with a vested interest in the growth and development of our academic space.

Thank you one and all for your unwavering support.

1 Barnett, R. 2006. Vocational knowledge and vocational pedagogy. In M Young & J Gamble (Eds.). *Knowledge, curriculum and qualifications for South African further education*. Cape Town: HSRC Press.



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Thought Piece: Promoting employment-oriented skills development in Africa: Reality, relevance and research as enablers

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ABSTRACT

Overcoming the alarming youth unemployment challenge in Africa will entail youths acquiring employable skills. For the millions of young people who are illiterate or have never been to school, the learning of high-level technical skills for operating in the Fourth Industrial Revolution (4IR) work environment is a pipe dream. However, these poorly educated young Africans also need relevant skills for gainful employment and sustainable livelihoods. This thought piece argues that employment-oriented skills development in Africa should be multi-pronged and tailored to the educational profiles and needs of learners. Young people with a sound basic education and foundational STEM (science, technology, engineering and mathematics) skills can benefit from the learning of higher-order 4IR skills, while those who have never been to school or have dropped out of the school system at an early age could benefit from modern national apprenticeship schemes by qualifying as competent artisans who could serve the various sectors of the economy. Implementing such a disaggregated strategy for enhancing the employability and employment prospects of all young Africans, regardless of their educational background, will have to be anchored in the reality of the employment situation in each country, be informed by the relevance of the skills training programmes to the needs of the learner and the economy, and be driven by empirical research evidence.

KEYWORDS

Youth unemployment; skills development; digital skills; training relevance; informal-sector apprenticeships

Introduction

Youth unemployment is one of the greatest challenges of our time. Getting young people to become gainfully employed is a major concern of many African governments. All over Africa, governments face the daunting task of creating opportunities for young people to enter the world of work. Out of a total youth population of about 200 million, 95 million are illiterate, unskilled, and either unemployed or in very low-paid jobs (Garcia & Fares, 2008; AfDB/OECD, 2010). Unemployment has become a cancer eating away at the heart and social fabric of African societies. There is glaring evidence of unemployment in many African countries: from frustrated young men who loiter around public spaces to teenagers who struggle to earn a precarious living on the streets of major cities, offering whatever wares they can vend to passengers in moving vehicles at busy traffic intersections.

Although the lack of employable skills is a major cause of youth unemployment, the absorption capacity of enterprises is an equally important factor. Economies need to expand to meet the growing demand for job opportunities. For example, it is estimated that the Ghanaian economy needs to create 300 000 new jobs a year to absorb the growing number of the unemployed (Honorati & Johansson de Silva, 2016).

The African Union (AU) has led the call for skills development as a response to the challenge of youth unemployment with its publication of a continental technical and vocational education and training (TVET) strategy with broad guidelines and guidance intended to help Member States to design and implement competency-based training systems to foster youth employment (AU, 2013). The importance that the AU attaches to TVET is also evident in the Skills Development Initiative for Africa (SIFA). SIFA is a joint initiative of the AU and the German government to improve the occupational prospects of young people in Africa. SIFA has established a financing facility that provides funding grants for the design and implementation of innovative skills development programmes that benefit youths, women and vulnerable groups.¹

Employment-oriented skills development is key to enhancing the employment and economic prospects of young people. However, such initiatives must be rooted in the reality of the African situation with training relevance and research evidence as enablers.

Conceptual clarification

According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2015), 'TVET' refers to education, training and skills development which relate to a wide range of occupational fields, production, services and livelihoods. A traditionalist view of TVET is an education and training system that emphasises the acquisition of technical knowledge and skills that are directly relevant to the needs of the labour market.

1 Detailed information on SIFA is available at: <www.skillsafrica.org>.

Whereas TVET is often associated with the acquisition of skills in the formal education and training system, the concept of skills development is broader and refers to the acquisition of skills and productive capabilities from all learning environments and pathways, including formal, non-formal, informal and on-the-job training.

The notion of skills in the context of vocational education and training (VET) is complex and its definition has to be approached from different contexts and perspectives. The concept of skills is multidimensional, involving the type of skills, the level of complexity and also the context. A practical approach to understanding the different dimensions and connotations of skills would therefore be to adopt a parametric definition that takes into account these dimensions: the types of skill (e.g. digital skills, entrepreneurial or business skills, and soft, transferable or personal skills such as honesty, creativity and communication); the level of complexity (e.g. basic, intermediate or advanced); and the dimension of the context (e.g. specialised technical skills that are sector-specific and linked to a particular industrial, technological or economic activity or environment).

Skills development therefore encompasses all the dimensions of skills. It may be considered generally as the acquisition of productive capabilities to perform a given task or job effectively in the labour market. It can also refer to the outcome of the learning process and does not necessarily refer to the source of the skills acquisition (Johanson & Adams, 2004).

Multiple skills development pathways

Skills for the world of work may be acquired from different learning environments. These include:

- A formal or school-based system;
- An informal-sector training system (e.g. traditional or modern apprenticeship schemes);
- Enterprise-based on-the-job training;
- Non-formal, semi-structured or unstructured training; and
- Online Internet-based training.

Recognising that skills development can take place at all levels of the spectrum (from low to high levels), and that each level has a different impact on national economies, it is necessary for African countries to adopt a multi-pronged approach to skills development and to find the right mix that offers not only opportunities for employment, but also increases productivity in the formal technology-dominated and capital-intensive sector. African countries should therefore prioritise both the acquisition of basic employable skills for economic survival and poverty-reduction (for their illiterate populations) and the acquisition of higher-level and advanced digital skills for economic stimulation and effective participation in the 4IR economy.

Reality of the African situation

Precarious livelihoods

The unemployment situation in Africa is dire. According to the Africa Progress Report (2012), there are 173 million Africans between the ages of 15 and 24 years, most of whom have entered the world of work from childhood with limited education and skills to equip them for decent employment and jobs. This figure is expected to grow to about 250 million in 2025. Every year, millions of poorly skilled young Africans make the difficult transition from school to the labour market, where they end up in insecure and sometimes hazardous employment with no prospect of further education or of developing their skills. According to recent estimates by the World Bank, more than 12 million young Africans, often poorly educated, leave the school system every year in search of jobs in local employment markets (World Bank, 2016). On a positive note, Johanson and Adams (2004) have also reported that the number of new annual entrants into the labour markets of Africa was as high as 500 000 in Kenya, 700 000 in Tanzania and 250 000 in Zimbabwe (Johanson & Adams, 2004).

A recent joint publication by the World Bank, UNESCO and the International Labour Organization (ILO) (Levin et al., 2023) estimates that more than 20% of youths in low- or middle-income countries are not in education, employment or training (NEET). Worldwide, 3% of young women and 14% of young men were not in employment, education or training in 2019 (UNESCO, 2021). In Ghana, the 2023 Annual Household Income and Expenditure Survey Report produced by the Ghana Statistical Service (GSS) revealed that about two million young people in the country, aged 15 to 35 years, are not in education, employment or training (GSS, 2024). Women account for the majority of the NEET population, at 1,2 million, compared with 715 691 men. According to the United Nations SDG Report of 2019 (UN, 2019), the proportion of NEETs in sub-Saharan Africa was 20%. These alarming NEET rates, representing a population of idle hands, pose a serious challenge to the peace and security of African countries.

On the whole, of the estimated 200 million youths in Africa, about 100 million are illiterate and unemployed or in low-paid jobs (AfDB, 2010; World Bank, 2016). It is important, therefore, for governments to design and implement skills training programmes that can equip this category of youths in particular with basic occupational skills. In this regard, TVET is the most practical avenue for acquiring readily employable skills that equip them for the world of work, because it provides individuals with employable technical skills and knowledge (UNESCO, 2022). Therefore, TVET enhances the employment prospects of learners and it promotes sustainable livelihoods, social stability, community well-being and the reduction of poverty (McGrath & Powell, 2015, McGrath et al, 2023). Well-functioning TVET and skills development systems are best placed to train the more vulnerable populations to acquire the occupational skills they also need to secure gainful employment. For the illiterate or poorly educated populations of Africa, basic occupational skills for livelihoods, bolstered by basic digital literacy, should therefore be prioritised.

This is not to say that Africa should not be training its youths for the 4IR. Universities and higher-level TVET institutions are better placed to offer this kind of higher-order training. However, the reality is that many of the unemployed youths do not have the foundational STEM skills required to acquire or use 4IR technologies. Undoubtedly, Africa needs competent artisans and technicians imbued with basic and intermediate employment-related skills, and also highly skilled technologists and engineers.

There is also no doubt that Africa needs technically qualified high-level TVET graduates who can

- drive economic growth and transformation, with an emphasis on manufacturing and modern production systems;
- boost agricultural-production value chains, including agro-processing, and add value to primary commodities and natural resources such as gold and timber;
- provide technological solutions and support to SMEs (small and medium-sized enterprises), including businesses in the informal sector of the economy; and
- build and maintain large-scale socio-economic infrastructure, such as roads and bridges, dams and irrigation systems, airports and railways, power plants, and water-supply and sanitation installations.

At the same time, Africa needs well-trained artisans who are equipped with basic technical and digital skills to support, in particular, the building, construction and manufacturing sectors.

The current unemployment situation in Africa suggests that the acquisition of occupational skills and basic digital literacy by the less-educated youths to meet the existing national labour market demands will be a pragmatic approach to easing the growing problem of youth unemployment. There is evidence of a demand in the labour market of many countries for competent artisans such as masons, tilers, welders and steel benders, electricians and plumbers.

Inadequate digital infrastructure

The second reality of the African situation which demands that basic and intermediate skills should not be neglected in favour of 4IR skills is that many countries lack the digital infrastructure and high-speed Internet backbone required for the widespread introduction of automation into their production and service sectors. The World Bank (2016) estimates that the share of employment that is susceptible to automation in Africa is less than 50% – even in the more advanced economies of the continent. The ratio is 40% for Nigeria, 42% for Ethiopia and 48% for South Africa compared with about 60% for China and OECD (Organisation for Economic Co-operation and Development) countries. For many years to come, therefore, African economies that are still in the process of industrialising will have to depend on manual and semi-skilled workers, many of whom ply their trade in the informal economy.

High rate of informality of skills acquisition

The third reality of the African situation is the high level of informality of skills acquisition. Skills development for the vast majority of out-of-school individuals or early school-leavers is delivered through apprenticeships and on-the-job training in the de-industrialised informal sector. In West Africa, for instance, it is estimated that about 80 to 90% of all skills training takes place in the informal economy. This tallies with findings of the African Development Bank, according to which African economies are dominated by informality (AfDB, 2019): the informal sector is the largest provider of employable skills. It is estimated that the share that informal employment constitutes in the economy is about 86% in sub-Saharan Africa (Balliester & Elsheikhi, 2018). Accordingly, because informal employment is so pervasive, it can no longer be considered as a domain on the periphery of national employment policies and strategies. Skills development in the informal economy is synonymous with apprenticeship training, where skills are transferred to apprentices by master trainers in a largely unregulated training environment with no nationally approved curriculum. Apprenticeship training is, as a result, the default option for the acquisition of employable skills in the case of poorly educated youths and early school-leavers.

Skills development in the informal sector tends to be more flexible than school-based formal TVET, which is characterised by rigid admission criteria that are based on the academic achievement, age restrictions and foreign-language limitations of learners. Formal TVET colleges are often not innovative in their training methodologies, partly because they are usually constrained by nationally imposed regulations to respond to the peculiar skills needs of disadvantaged categories of learner in respect of teaching approaches, admission requirements and language of instruction. However, the medium of instruction in the informal sector does include the use of a local language that less-educated learners can understand and are more comfortable expressing themselves in. Although skills development in the informal economy has been slow to incorporate new technologies into learning and teaching methodologies, this mode of skills acquisition remains dominant in many countries, especially in East and West Africa. An improved apprenticeship training system powered by technology and digitalisation and involving mentoring and coaching by qualified trainers has the potential to contribute to the enhancement of the quality and attractiveness of skills development initiatives and the employability of those who emerge from them (Smith, 2023).

That said, though, the reality is that many of the pupils leaving primary school in Africa lack the foundational literacy and numeracy skills to pursue further studies in the formal education and training system; and yet these young people also need employable skills that are relevant to their community and the local labour market. Failure to cater to their skills and employability needs will only add to the ranks of the unemployed youths.

Relevance

The ultimate goal of TVET is to prepare learners for the world of work. The relevance of training is often measured by the employability of the learners and the ease with which

they transition to the labour market. However, the notion of relevance is broader in sense and scope than this. Relevance needs to be contextualised and mapped against not only the needs of the labour market, but also the needs of the individual and their community. Communities differ in the relevance of their social interventions and physical infrastructure needs. Employment-oriented skills development in Africa should also therefore be tailored to equip young people in rural areas with the technical skills necessary to overcome the significant infrastructure deficits and skills shortages at the local community level, and not only the needs of the wider industrialised labour market.

Training relevance is also associated with skills mismatches between the training market and the employment market. However, the notion of skills mismatches is often based on employer surveys in the formal economy. Conducting skills audits to identify skills gaps and shortages is a complex activity based very often on unpredictable factors and projections in the national economy. In contrast, skills relevance in the informal economy is driven by the evolution of local community needs. In any event, though, the acquisition of technical skills is a factor of employability and a prerequisite for entry into the world of work. For example, employer surveys conducted in Benin, Liberia, Malawi and Zambia show that more than 60% of firms consider technical skills to be very or extremely important to their operations (Arias, Evans & Santos, 2019). However, as the future of work is digital, the relevance of technical skills training will be enhanced by the digitalisation of the training provision or the curriculum in both the formal and the informal sectors of the economy.

The future of work is digital

The full spectrum of TVET stretches from basic occupational skills training to the high end of skills required for industrialisation, innovation and participation in the 4IR or the 5th Industrial Revolution, which is on the horizon. The World Economic Forum (WEF) publication on the future of jobs (2018) describes the 4IR work environment as being characterised by accelerated technology adoption and robotics technology, including the use of stationary robots in manufacturing and assembly plants, aerial drones and underwater robots in the oil and gas industry, and humanoid robots in the financial and hospitality services sector. The drivers of these innovations include high-speed mobile Internet, artificial intelligence (AI), big data analytics, genetic engineering and cloud computing (WEF, 2018). Increasingly, a new human–machine frontier is being created with the coming together of the physical, biological and digital worlds.

Although the future of work is digital, prioritising the learning of advanced automation technology over basic occupational skills development in countries with large numbers of unskilled and barely literate youths will have grave social and political implications. Advanced digital production technologies associated with the 4IR are not widespread in many African countries because of the absence of enabling infrastructure such as high-grade regular electricity and affordable and reliable Internet connectivity. Governments will therefore have to consider labour-intensive job-creation options as a strategy by which to increase

employment opportunities for these categories of youths. According to a recent report of the United Nations Industrial Development Organization (UNIDO, 2020), most firms in Africa still use technologies typical of the third and even second industrial revolutions.²

However, Africa cannot ignore the integration of relevant digital skills into the acquisition of basic occupational competencies in even traditional occupational fields such as masonry, carpentry, cookery and catering services, hospitality and tourism, fashion design and tailoring, electrical installation and agribusiness. Occupational skills training and informal-sector apprenticeships for poorly educated learners should therefore include basic literacy and numeracy education to enable the learning of basic digital skills.

Since the future of work is assuredly digital, future-ready skills development programmes should involve the adoption of digital learning tools such as online learning platforms, digital diagnostic devices and multimedia resources to support personalised learning; here, the learning content is tailored to diverse learning styles, learner abilities and learner interests. Skills development strategies should include investment in digital infrastructure and affordable Internet to enhance the digital fluency of all learners, regardless of the course they are pursuing.

Digitalising the training curriculum

Very often, the term ‘digital skills’ is used broadly to include digital capabilities and digital literacy. However, it can best be expanded upon to clarify the different levels of skills: basic, intermediate and advanced. For instance, basic digital skills include email communication, web research and online transactions; intermediate digital skills relate to the use of professional software and digital tools, and managing data; whereas advanced digital skills include data analytics, AI and machine learning, and the Internet of Things (World Bank, 2019).

Following these distinctions, then, when promoting the acquisition of digital skills in occupational trades for all categories of learner in the broad context of TVET and skills development, ‘digital skills’ would mean computer literacy and the application of technology in the learning of the various vocational trades and occupations. Digitalisation levels would naturally vary according to the learner or worker profile and the occupational domain. Workers engaged in the provision of routine services, such as hotel and hospitality staff, would need basic computer-literacy skills, whereas mechanics and technicians involved in installation, repair and maintenance work would need competencies in the use of professional software and digital diagnostic tools to enhance their productivity.

2 Preceding the 4IR were the 1st, 2nd and 3rd industrial revolutions. The 1st Industrial Revolution harnessed the power of water and steam to mechanise production, whereas the 2nd was characterised by the rapid industrialisation and manufacturing driven by the power of the steam engine and electricity to create mass production and transportation systems. The 3rd Industrial Revolution witnessed the shift from traditional industry to an economy based primarily on electronics and information technology to automate production.

Why embedding digital skills into occupational skills training is important

The importance of introducing digital literacy into occupational skills training is evidenced by the fact that the labour market demand for digital skills is growing. It is estimated that 230 million jobs in sub-Saharan Africa will require varying digital competencies by 2030 (World Bank, 2019). This presents an opportunity for TVET colleges and training centres to employ a blended skills development strategy to train young people to meet this enormous labour demand. Embedding digital skills training into TVET, including traditional or informal apprenticeship training, will also help considerably to elevate the image and public perception of TVET.

Relevance of high-level TVET

Training relevance is not only about basic occupational skills, but is also concerned with high-level TVET. Skills development programmes at the tertiary level, which include polytechnics and technical universities, hold the promise of producing graduates equipped with high-level skills to support the transformation of national economies through value-addition to natural resources. As many countries poor in natural resources, such as South Korea and Singapore, have demonstrated, high-level skills and not natural resources are the key drivers of economic growth. Indeed, natural resources have no natural owners: it is those who have the knowledge and skills to exploit or add value to them that are their true owners. There is therefore a need for high-level skills development in Africa in areas such as the extractives-industry sector, telecommunications, renewable energies (in particular, solar energy), power generation, transmission and distribution, biotechnology, and rail, air and marine transportation. Polytechnics, technical universities and universities of technology, when properly resourced, are strategically positioned to train the higher-order skilled workforce that African countries need to drive their economic growth and industrialisation agendas (N’gethe, Sobotzky & Afeti, 2008; Afeti, 2017).

In addition, incorporating the learning of green skills and technologies, waste management and recycling techniques, renewable-energy systems and environmentally friendly practices into TVET provision will contribute to sustaining the environment, mitigating the impact of climate change, and promoting the relevance of training. The United Nations Environment Programme (UNEP) defines ‘green skills’ as referring to those technical skills, knowledge, attitudes, values and behaviours that enable environmental sustainability (UNEP, 2011). Green jobs help to protect ecosystems and biodiversity, reduce energy, and avoid or reduce the generation of all forms of waste and pollution. TVET and skills development graduates can therefore contribute to the building of a green or environmentally friendly economy by, for example, learning to instal and maintain solar panels and by learning about the proper recycling of waste products and the servicing of electric vehicles that are gradually penetrating the African market.

Research

The third R in the trilogy of Rs is research. policies, and strategies formulated to redress the skills deficits in African economies, all of which must be data-driven and based on

credible research evidence. Unfortunately, there is currently a paucity of academic research into TVET in Africa. There is therefore a need for greater Africa-centred academic research to be conducted and data to be developed on the impact of TVET on livelihoods, labour productivity, business competitiveness and economic growth as a means of guiding policy formulation and implementation. Moreover, aligning TVET with the wider education and training sector will require in-depth research and analysis of the factors involved in building a competent and diversified workforce. Pertinent research topics would include TVET teacher profiles, TVET pedagogy, the employability of students, the soft or new skills needed to serve emerging economic subsectors, and attracting female learners to TVET.

TVET teachers

While investment in learning and teaching infrastructure, facilities, equipment and training materials is unquestionably important, it is also true that well-trained teachers, master trainers and TVET system managers hold the key to improving the quality of training and facilitating the transition from the learning environment into the employment market, especially in the 4IR. A competent TVET teacher or trainer is not only someone who has a technical qualification in relevant occupational disciplines: a good TVET teacher must also possess adequate pedagogical and digital skills plus workplace or industry experience. In this regard, research questions may include: What are the current profiles of teachers in TVET institutions and how are they affecting learner outcomes? How are new technology-mediated teaching and learning methodologies shaping the next generation of TVET graduates? Has the COVID-19 pandemic created new teaching technologies that TVET teachers have embraced?

Transferable or soft skills

How are TVET institutions supporting learners to acquire employability skills or so-called soft and transferable skills such as leadership, creativity, critical thinking, problem-solving and decision-making, teamwork and communication, initiative and reliability? And how can these soft skills be acquired and assessed? Increasingly, employers are considering soft skills to be as important as technical knowledge and skills because soft skills enable employees, among other attributes, to adapt more quickly to changing work environments. The World Economic Forum report on the future of jobs (WEF, 2018) predicted that problem-solving, critical thinking, people management and emotional intelligence would be among the most important skills required in the workplace. However, the TVET curricula in most African countries do not provide for training in soft skills. There is therefore a growing need for research to identify effective methodologies for teaching, learning and assessing soft skills.

Female learners in TVET

Female participation in the labour market is generally low, with women who do participate being more likely to be engaged in vulnerable low-paid jobs. The place of women in the

digital economy is likely to see greater disruptions, since many ‘feminine-tagged’ jobs, such as office and restaurant workers, are 70% more likely to be automated (Bonnet, Vanek & Chen, 2019). This risk is exacerbated by the gender-stereotyping of occupations, where some jobs are considered as masculine and therefore not appropriate for females, which leads to a reduction in the career options available to women and girls.

The issue of gender-stereotyping in TVET is complex and has to date not been adequately dealt with. Research in this area has been limited to assessing the influence of parents, culture, society, teachers and learning environments on the atypical vocational aspirations of girls (e.g. Ajayi, Akinsanya & Agbajeola, 2011; Martin & Barnard, 2013; Oluniyi, Oviawe & Barfa, 2015). Long-held societal views on what is an ‘appropriate’ or an ‘inappropriate’ occupation for boys and girls, and the lingering dichotomy in occupational preferences, have to be investigated in the arena of research.

Conclusion

If it is to be at all effective, employment-oriented skills development in Africa should be rooted in the reality of the African situation and should therefore be driven by relevance and research evidence. The challenge of youth unemployment cannot be eased without all categories of young learner – including the NEET population – acquiring the relevant occupational and digital skills. Unemployment breeds poverty, inequality, frustration, loss of self-esteem, anger, sometimes mental illness, and crime, and it eventually leads to social disruptions. The weapon of choice to defeat the menace of youth unemployment is relevant employment-oriented technical, vocational and entrepreneurial skills.

The security threat that unemployment poses to the integrity of the state is one of the reasons many African countries are developing more responsive TVET systems to equip young people with employment-oriented skills that prepare them for the world of work. However, it must be noted that the canker of unemployment is a complex phenomenon and tackling it will have to involve the implementation of multi-pronged initiatives, including fiscal policies that promote the creation and expansion of enterprises and the capacity of the economy to generate jobs. The bottom line, however, is that, without work-related skills, unemployed youths simply cannot enter the labour market.

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A reflective overview: European vocational education and training reform: The Copenhagen process 2002 to 2024

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ABSTRACT

The European Union's (EU) Copenhagen Process on cooperation in vocational education and training (VET), initiated in 2002, is a voluntary method that coordinates VET reform in Europe. In terms of this process, EU Member States, the European Commission and the social partners agree, at ministerial level, on common VET-related objectives, priorities and statistical targets to be met over a five- to ten-year period. Progress is monitored and political momentum maintained through regular reporting, exchanges of experience and periodic revisions of reform objectives, priorities and statistical targets. This article outlines the origins of the Copenhagen Process and discusses its evolution and influence on European VET policy since 2002. The writer argues that the process has proved to be an effective working method. It has strengthened European cooperation in VET, provided the basis for common European instruments and principles, influenced national reforms and raised the profile of VET in other policy areas. The writer also argues that, while the Copenhagen Process has operated at a multinational, trans-European level, its principles of partnership, resources and momentum can be used to create effective partnerships and networks at national, sectoral and local levels in order to bring about VET reform.

KEYWORDS

European Union (EU), vocational education and training (VET), educational reform, Copenhagen Process, open method of coordination

Origins of the Copenhagen Process

The Lisbon Strategy, 2000

In March 2000, the European Union (EU), then comprising 15 Member States, launched its Lisbon Strategy, named after the city in which the EU's European Council (the heads of state and government of the EU Member States) met. The aim of this strategy was to improve Europe's competitiveness, create more jobs and strengthen social cohesion through a programme of economic and social reforms (Council of the EU, 2000). The strategy was launched as a response to the economic and social changes stemming from globalisation and the shift to the 'knowledge-driven economy' in which services, not manufacturing, would be the main driver of European economic growth.

At the time, Europe's economy was in good shape. Inflation and interest rates were low and public debt was falling as a proportion of national gross domestic product (GDP). The euro (the EU's single currency) had just been introduced, while the EU's single market was supporting economic growth as the world's largest and most sophisticated free-trade area. Prospective EU enlargement to take in 12 Eastern European countries was also expected to bring further stimulus to economic growth.

Despite these strengths and the best economic outlook in a generation, the EU had serious structural problems – unemployment remained persistently high. More than 15 million Europeans across the 15 Member States were out of work, that is, around 10% of the labour force (Council of the EU, 2000; Cedefop, 2004). The European employment rate, at around 61% of the working population, was considered to be too low. The EU was also concerned about remaining globally competitive with China preparing to join the World Trade Organisation (WTO).

Following the Lisbon meeting, European Council meetings in Stockholm (Council of the EU, 2001), Barcelona (Council of the EU, 2002a) and Brussels (Council of the EU, 2003) developed a clear policy agenda for economic and social reform. The agenda brought together policies related to employment and social affairs, information and communications technology (ICT), infrastructure, financial markets and research.

In order to implement its strategy, the EU introduced a new Open Method of Coordination (OMC), defined as a 'means of spreading best practice and achieving greater convergence towards the main EU goals' (Council of the EU, 2000). The OMC would operate at all ministerial and technical levels. At the highest level, the European Council would guide and coordinate the strategy, which comprised policy objectives complemented by several statistical targets (also known as 'benchmarks'). These would help to measure progress, 'identify best practice and ... ensure efficient and effective investment in human resources' (Council of the EU, 2003). To maintain the political momentum necessary for reform, the European Council would meet each spring to monitor progress, mandate action and ensure follow-up.

Vocational education and training reform: The Copenhagen Process, 2002

Improving education and training was central to the Lisbon Strategy because of concerns that accelerating social and economic change would overtake the skills of Europe's ageing workforce (Council of the EU, 2000). The forecasts were that most new jobs would be in advanced services and managerial and technical professions, and Europe's workforce seemed ill-equipped for them. In 2001, almost 40% of the EU's population aged 25 to 64 – comprising some 75 million people – did not have qualifications beyond those obtained as a result of compulsory schooling (Cedefop, 2004).

This dual need, to develop skills for economic excellence in the emerging 'knowledge' society and to bring marginalised people into the labour market to increase the employment rate, placed a high priority on reforming vocational education and training (VET). Consequently, on 30 November 2002, the Copenhagen Process on enhanced cooperation in VET (Council of the EU, 2002b), was launched (see box).

The Copenhagen Process on enhanced cooperation in VET

On the basis of these priorities we aim to increase voluntary cooperation in vocational education and training in order to promote mutual trust, transparency and recognition of competences and qualifications and thereby establishing a basis for increasing mobility and facilitating access to lifelong learning. (Copenhagen Declaration, 2002)

A method, not a new strategy

Policy framework

The Copenhagen Process applies the OMC to VET policy in Europe, establishing cooperation at the European level to support the modernisation of VET systems in Member States. It promotes mutual goal-setting, collaborative action and shared accountability for results. It also comprises periodic reporting on, and peer review of, progress in implementing VET-related common objectives, priorities and statistical benchmarks.

The Copenhagen Process is based on voluntary cooperation because the Treaty on European Union¹ limits the role of the EU to supporting and supplementing action by Member States. The treaty specifies that Member States are responsible for the content and organisation of national VET systems and explicitly rules out any harmonisation of them by the EU.

1 When the Copenhagen Process was introduced, the 1993 Treaty on European Union was in effect. A revised treaty came into effect in 2006. Article 117 on VET in the 1993 treaty was transferred unchanged to become Article 166 of the 2006 treaty. The 2006 treaty remains in force.

Although the Copenhagen Process incorporates priorities and objectives, it is a working method that coordinates existing strategy and monitors implementation. It is not a new strategy. The objectives of the process reflect VET reform priorities that Member States share at a European level. The Copenhagen Process is also a partnership. In addition to Member States, it includes the European Commission and the European social partners.

The Copenhagen Process has provided a framework for European VET policy since 2002. When the process was launched, Member States agreed on several policy objectives to be achieved by 2010. Subsequently, the plan was to reinforce, develop and revise during the period 2010 to 2025, as stated in various policy documents agreed at the European level. Table 1 summarises the VET reform priorities set out in each document.

TABLE 1: Copenhagen to Osnabrück: Priorities for VET under the Copenhagen Process (2002–25/30)

European VET policy: Priorities for 2002 to 2010
<p>2002: Copenhagen Declaration (Council of the EU, 2002b)</p> <ul style="list-style-type: none"> • Strengthen the European dimension • Improve transparency, information and guidance systems • Recognise competences and qualifications • Promote quality assurance
<p>2004: Maastricht Communiqué (Council of the EU, 2004)</p> <ul style="list-style-type: none"> • Put Copenhagen tools into practice • Improve public–private investments in VET • Address the needs of groups at risk • Develop progression and individualised learning paths • Strengthen planning and partnerships; identify skills needs • Develop learning methods and environments • Expand teachers’ and trainers’ competences • Improve VET statistics
<p>2006: Helsinki Communiqué (Council of the EU, 2006)</p> <ul style="list-style-type: none"> • Improve image, status, attractiveness of VET • Develop further, test and implement common tools by 2010 • Encourage more systematic mutual learning; more and better VET statistics • Take all stakeholders on board
<p>2008: Bordeaux Communiqué (Council of the EU, 2008a)</p> <ul style="list-style-type: none"> • Implement tools and mechanisms • Raise quality and attractiveness of VET • Improve the links between VET and the labour market • Strengthen cooperation arrangements

European VET policy: Priorities for 2010 to 2020
<p>2010: Bruges Communiqué (Council of the EU, 2010)</p> <ul style="list-style-type: none">• Make VET more attractive and relevant and encourage quality and efficiency• Make lifelong learning and mobility a reality in VET• Encourage creativity, innovation and entrepreneurship in VET• Make VET more inclusive <p>2015: Riga Conclusions (Council of the EU, 2015)</p> <ul style="list-style-type: none">• Promote work-based learning (WBL) in all its forms, with special attention to apprenticeships• Develop quality assurance mechanisms in VET further• Enhance access to VET and qualifications for all• Strengthen key competences in VET curricula• Encourage professional development of VET teachers, trainers and mentors
European VET policy: Priorities 2020 to 2025
<p>2020: Osnabrück Declaration (Council of the EU, 2020a).</p> <ul style="list-style-type: none">• Promote resilience and excellence through quality, inclusive and flexible VET• Establish a new lifelong learning culture – relevance of continuing VET and digitalisation• Ensure sustainability – a green link in VET• Support European Education and Training Area and international VET

Source: Cedefop.

As part of the Copenhagen Process, the European Commission has provided policy and position papers to complement, direct and progress the broader European VET policy framework. European social partners have similarly contributed to the debate on VET priorities and their implementation. The European social partners are EU-level organisations representing employers and employees that participate in the European social dialogue. Specifically, employers are represented by the Confederation of European Business (BUSINESSEUROPE) and by SME United (which represents small and medium enterprises). Employees are represented by the European Trade Union Confederation (ETUC) and SGI Europe (mainly public-sector employees).

The European social dialogue is provided for in the EU Treaty and discussions between the social partners can shape working conditions and influence social policy. Social partnership is a multilevel system operating at European, national, sectoral, regional (provincial or local), company and establishment levels. European social partners do not negotiate collective bargaining agreements over pay and conditions, which are agreed within countries at national and sector levels. Rather, they comment on, suggest amendments to and can propose action at European level and can help progress and implement European policies.

The European Commission plays an essential role in supporting the technical aspects of the Copenhagen Process. It has set up technical working groups of experts from Member States

to explore ways to implement policies, for example improving the understanding of qualifications across Member States, improving the quality of VET and strengthening the systems of vocational guidance.

Cedefop² (the European Centre for the Development of Vocational Training), a European agency, has also provided technical expertise to develop policy, including the European Qualifications Framework (EQF), VET credit systems, the VET quality assurance framework, and skill forecasts. Cedefop has also monitored and reported on progress by Member States. Some key policy and reporting documents outlining European VET policy under the Copenhagen Process are shown in Table 2.

TABLE 2: Copenhagen Process: A selection of European VET policy documents and reports, 2002–2020

European VET policy documents, 2001–2021
<ul style="list-style-type: none"> • European Commission (2001). <i>The concrete future objectives of education systems</i>. (COM (2001) 59, 31.1.2001). • European Commission (2006b). <i>Action plan on adult learning: It is always a good time to learn</i>. (COM (2007) 558 final, 27.9.2007). • European Commission (2008c). <i>New skills for new jobs: Anticipating and matching labour market and skill needs</i>. (COM (2008) 868, 16.8.2008). • European Commission (2002). <i>Education and training in Europe: Diverse systems, shared goals for 2010</i>. Luxembourg: Publications Office. • Council of the European Union (2009). Conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020'). <i>Official Journal of the European Union</i> 2009/C 119/02. • European Commission (2010). <i>New skills for new jobs: Action now: A report by the Expert Group on New Skills for New Jobs</i>. Luxembourg: Publications Office. • European Commission (2010). <i>A new impetus for European cooperation in vocational education and training to support the Europe 2020 strategy</i>. (COM (2010) 296). • European Commission (2016). <i>A new skills agenda for Europe in vocational education and training to support the Europe 2020 strategy</i>. (SWD (2016) 195 final). • European Commission (2020). <i>The European skills agenda for sustainable competitiveness, social fairness and resilience</i>. (COM (2020) 274, 1.7.2020). • Council of the European Union (2020). Council recommendation on VET for sustainable competitiveness, social fairness and resilience. <i>Official Journal of the European Union</i> (2020/C 417/01). • European Commission (2021a). <i>The European Pillar of Social Rights (ESPR)</i>. (COM (2021) 102 final, 4.3.2021). • European Commission (2021b). <i>2030 Digital Compass: The European way for the digital decade</i>. (COM (2021) 118 final, 9.3.2021). • Council of the European Union (2023). Council Resolution on the European Education Area (EEA): Looking to 2025 and beyond. <i>Official Journal of the European Union</i> (2023/C 185/08).

2 <<https://www.cedefop.europa.eu/en>>.

Cedefop reports, 2004–2020

- Cedefop (2004) *Learning for employment: Second report on vocational education and training in Europe*. Luxembourg: Publications Office.
- Cedefop (2007). *Zooming in on 2010: Reassessing vocational education and training: Third report on vocational education and training in Europe*. Cedefop Reference series. Luxembourg: Publications Office.
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Source: Cedefop.

Measurable statistical targets

Policy objectives were complemented by VET and VET-related statistical targets to be reached by 2010. Following the Brussels Communiqué (Council of the EU, 2010) and the Riga Conclusions (Council of the European Union, 2015), some of these targets were carried over and others introduced for the period 2010 to 2020. Post-2020 European VET policy comprises a more comprehensive set of statistical targets, set out in several VET and VET-related policy documents, which are discussed below under the heading: ‘Where next? Post-2020 VET reform: Policy and targets’. Statistical targets and progress towards them are also discussed below, under the heading: ‘European VET policy statistical targets’.

Throughout the Copenhagen Process, raising the level of education in the European workforce featured strongly in the statistical benchmarks. Increasing the number of graduates from upper-secondary and tertiary education and reducing the number of people leaving school with no qualifications were seen as a proxy for higher skills levels. The view was that higher skills would improve employment prospects for individuals by providing a better alignment with the changing needs of the labour market. These changes would translate into a more qualified workforce and higher employment rates. Increasing participation by adults (those aged 25–64) in lifelong learning is also a consistent theme included in the statistical targets.

Achievements of the Copenhagen Process, 2002–2020: Successes and setbacks

Assessment of the Copenhagen Process and the European VET policy it underpins should consider two distinct but related aspects: first, the policy outcomes of European cooperation

in VET and, second, its effects on the performance of VET systems, as measured by the VET and VET-related statistical targets that the EU set for itself.

Policy outcomes

Developing and managing VET policy at the European level is highly complex. As discussed above, the European Union Treaty limits the EU's role to supporting and complementing policies in Member States, whose individual VET systems are very different. Within Member States, the responsibility for VET is usually shared between governments and social partners, but to varying degrees. For example, in Germany, the federal government has responsibility for VET in close cooperation with companies and social partners (Cedefop; BIBB, 2022). In Belgium, responsibility lies with the Flemish, French and German language communities (Cedefop; Bruxelles Formation, 2022); and in Italy, multiple institutional actors at the national and regional levels have responsibility for VET (Cedefop; INAPP, 2022).

Despite this complexity, the outcomes of European cooperation in VET provide strong evidence that the Copenhagen Process has proved to be an effective working method. By coordinating voluntary technical and political cooperation across the EU, the process has given VET a clear policy voice at the European level (Cedefop, 2010).

Actions at the European level have sought to implement the overall European VET policy objective, namely to develop modern VET systems closely aligned to labour market needs which are comprehensive and inclusive (by being tailored to the needs of the best and brightest students and those at risk of social exclusion) and which also encourage and enable lifelong learning. Less central, but also important, is the aim to make European VET more transnational by providing opportunities for VET students to learn in other countries.

The Copenhagen Process has supported the development of several common European instruments and principles (see Table 3). Overall, these aim to ensure that VET graduates across the EU have a good grounding in key competences to enable them to perform well at work and to learn new skills in the future. They also aim to make VET systems more open, flexible and inclusive by providing different pathways for young people and adults to obtain qualifications through validation of previous non-formal and informal learning. European-level initiatives also supported cross-border mobility through the easier recognition of qualifications, both within and between Member States. These changes were underpinned by trust in the quality of the different systems in Member States provided by a common quality assurance framework.

European action has influenced and helped to align national policies (Cedefop, 2010; Cedefop, 2015a; Cedefop, 2020a). Common European instruments and principles developed through the Copenhagen Process were based on learning outcomes (statements of what an individual learner can do and understand after completing any type of learning process).

Member States used learning outcomes to reform VET standards and curricula – for example, to develop modular courses and partial qualifications. For some Member States, who had traditionally based qualifications on learning inputs (place and duration of learning), this was an important change (Cedefop, 2016).

Learning outcomes were also important for systems to validate prior non-formal and informal learning (Cedefop, 2020b). Crises in the labour market showed a need for people to be able demonstrate their skills and competences both to find work and to receive training tailored to their needs in order to improve their job prospects. Member States have used validation to promote social inclusion by keeping people in the labour market and bringing them back to it. The European Qualifications Framework (EQF) has also encouraged Member States to develop national qualification frameworks (NQFs) that link to it (Cedefop, 2015a).

Commitments by Member States at the European level have also influenced national policies. A pillar of European VET training policy from 2002 to 2020 was to improve the attractiveness of VET as a learning option by making access to VET easier and improving opportunities for VET graduates to go on to further and higher education (Cedefop, 2020c; Cedefop 2021). Participation in initial VET in the EU overall has remained stable at almost half (48.7% in 2021) of all enrolments in upper-secondary education³ and, in 2021, some 70% of students in upper-secondary VET were enrolled in programmes that grant direct access to tertiary education.

TABLE 3: Common European instruments and principles developed under the Copenhagen Process

Common European instruments	
European Qualifications Framework (EQF) (2008, 2017) (Council of the EU, 2017)	Helps to compare qualifications throughout Europe in order to support lifelong learning and educational and job mobility
European Quality Assurance (EQA) Framework (2009) (Council of the EU, 2009a)	Helps countries to develop, improve, guide and assess the quality of their VET (EQAVET) systems and to develop quality management practices
European Credit System for VET (ECVET) (2009) (Council of the EU, 2009b)	Helps to validate, recognise and accumulate work-related skills and knowledge acquired during a stay in another country or in different situations, so that these experiences contribute to vocational qualifications
Europass (2004, 2018) (Council of the EU, 2018a)	Assemble a portfolio of documents to support job and geographical mobility to enable people to present their qualifications and skills using a standard format understandable to employers throughout Europe
Common principles and guidelines	

3 See Cedefop's key indicators on VET at: <<https://www.cedefop.europa.eu/en/tools/key-indicators-on-vet>>.

<p>Guidance and counselling (2004, 2008) (Council of the EU, 2008b)</p>	<p>Strengthens the role of lifelong guidance in developing European policies for education, training and employment (It covers four priority areas: career management skills, access to services, quality of guidance provision, and policy cooperation.)</p>
<p>Identification and validation of non-formal and informal learning (2012) (Council of the EU, 2012)</p>	<p>Sets out common principles to encourage and guide the development of high-quality, trustworthy approaches and systems to identify and validate non-formal and informal learning</p>
<p>Key skills competences for lifelong learning (2006, 2018) (Council of the EU, 2018b)</p>	<p>Provides a reference framework for developing key skills and competences (including basic literacy, language learning, mathematics, digital competences, entrepreneurship and civic competences)</p>
<p>Upskilling pathways: New opportunities for adults (2016) (Council of the EU, 2016)</p>	<p>Provides a framework to offer adults with a low level of skills, knowledge and competences access to learning in order to raise their skill levels</p>
<p>Youth guarantee (2013, 2020) (Council of the EU, 2020b)</p>	<p>Supports youth employment across the EU through national schemes to provide young people with an offer of employment, continuing education, apprenticeship or traineeship within four months of leaving formal education or becoming unemployed.</p>

Source: Cedefop.

European VET policy has also strengthened apprenticeship (Cedefop, 2015b) and other forms of work-based and workplace learning for young people and adults. Estimates are that, in 2020, around 29.6% of students in upper-secondary VET were enrolled in combined work- and school-based programmes, where the work-based component was above 25% and below 90%. Regarding alignment between VET and the labour market, employment prospects for VET graduates in the EU have improved. In 2022, the employment rates of recent VET graduates aged 20 to 34⁴ were, on average in the EU, 13.3 percentage points higher than the employment rates for similar general-education graduates.

VET in the EU also makes a significant contribution to developing skills in science-, technology-, engineering- and mathematics-related (STEM) subjects, which are in demand in the labour market. In 2020, in the EU, 37.4% of upper-secondary VET graduates obtained a qualification in STEM-related subjects. Member States have also recognised the importance of quality VET teachers and trainers and of providing them with opportunities for their continuing professional development (Cedefop, 2020a).

4 The employment rate of 20- to 34-year-olds who had obtained a medium-level vocational qualification (ISCED 3 or 4) one to three years before the survey as their highest educational attainment and who were not in further (either formal or non-formal) education and training during the four weeks prior to the survey. See Cedefop's key indicators on VET at: <<https://www.cedefop.europa.eu/en/tools/key-indicators-on-vet>>.

Statistical targets in respect of European VET policy

Between 2002 and 2010, despite their extent, VET reforms supported by the Copenhagen Process had a limited impact on the performance of education and training systems, as measured against the statistical targets that European VET policy set out to achieve. Many 2010 targets were not reached (see Table 4). In 2010, the proportion of early leavers from education and training was around 12%, compared with a target of less than 10%. Only around 9.5% of adults (aged 25 to 64) participated in lifelong learning in the four weeks prior to being surveyed compared with an original target of 15%. In addition, during the same period, Europe’s employment rate reached around 65%, below the target of 70%.

TABLE 4: European VET policy: Statistical targets for 2010 – outcomes

	Target for 2010 (%)	Outcome by 2010 (%)
Average proportion of early school-leavers	Less than 10	12.0
Proportion of 30- to 34-year-olds completing tertiary education	85	86.0
Average participation in lifelong learning of the adult working population in the previous four weeks (25 to 64 years old)	15	9.4
Increase the number of university graduates in mathematics, science and technology by at least 15% and decrease the gender imbalance in these subjects	15	33.0
Employment rate	70	65.0

Source: Cedefop.

Note: Percentages in bold italics indicate that a target was not met.

More positively, the EU achieved its target of at least 85% of 22-year-olds completing upper-secondary education and increased the number of graduates in mathematics, science and technology by 33% compared with a target of 15%. However, despite the disappointing performance compared with the targets, all the indicators showed an improvement, not only across the EU average but also in all Member States.

During the period 2010 to 2020, the EU’s record regarding its statistical targets was better. This perhaps reflects the long-term nature of VET reform. Change takes time; there is no quick fix. Data paint a picture of mixed achievement in terms of reaching the statistical targets for 2020 (see Table 5). However, progress was made in many areas and in many countries, even if the targets were not met.

The data show that, in statistical terms, the EU made substantial progress in raising educational attainment and reducing the proportion of young people leaving education and training early and with low or no qualifications. Regarding alignment, VET graduates seem to have good employment prospects.

The target group for the employment rate was redefined as those aged 20 to 24, excluding those aged 16 to 19, many of whom were, technically, in the labour force but not actually looking for work because they were in full-time education. The target was also raised from 70% to 75%. Employment rates, generally, improved and failure to reach the target rates had more to do with overall economic growth than specific education and training policy. Notwithstanding the COVID-19 pandemic being a major economic setback in 2020, based on pre-pandemic trends, the EU was in any event unlikely to have reached the targets it missed. Even after 20 years, the participation by adults, particularly older adults, in lifelong learning remains stubbornly low. The planned increase in mobility proved to be a challenge to measure and reliable data are still lacking.

TABLE 5: European VET policy: Statistical targets for 2020 – outcomes

	Target for 2020 (%)	Outcome by 2020 (%)
Average proportion of early school-leavers	Less than 10	9.8
Proportion of 30–34-year-olds completing tertiary education	40	41.0
Average participation in lifelong learning of the adult working population in the four weeks prior to the survey (25–64 years old)	15	<i>11.0</i>
Employment rate of VET graduates aged 20–34 who left education and training within three years of the reference year	82	<i>78.5</i>
Employment rate for 20–64-year-olds	75	<i>72.0</i>
18–34-year-olds with an initial VET qualification having a related study or training period abroad (including work placements)	6	<i>Lack of reliable data</i>

Source: Cedefop.

Note: Percentages in bold italics indicate that a target was not met.

Where next? Post-2020 VET reform: Policy and targets

The EU's overall strategy now focuses on a successful 'twin transition' to a 'digital' and 'green' economy and society (European Commission, 2022). Post-2020 European VET policy is seen as being central to this strategy's success.

Post-2020 European VET policy, as outlined in the documents that define it, reflects a balance of continuity and new directions. It reiterates the aim of 'excellent and inclusive VET', underlining VET's dual role of providing skills both for economic excellence and for improving the employment prospects of marginalised people to bring them back into the labour market. The route to 'excellent and inclusive VET' is familiar: high-quality apprenticeships and work-based learning (WBL), embedded in a real-life work environment, are seen as ways of helping to align VET with labour market needs and of improving people's employment and career prospects. Post-2020 European VET policy also emphasises the right of all people regardless of their personal and economic background and place of residence, to have access to, and benefit from, high-quality VET and lifelong learning – stated as a first principle of the European Pillar of Social Rights (European Commission, 2021a, 2021b).

Post-2020 European VET policy is also seeking the closer integration of initial and continuing VET to ensure re-skilling and upskilling throughout working life. Retaining continuing training and developing a 'lifelong learning culture' as priorities for European VET policy reflect continuing concerns over Europe's demographic trends according to the Osnabruck Declaration (Council of the European Union, 2020a). The EU's old-age dependency ratio increased from 27.7% in 2013 to 33.4% in 2023, meaning that there are now just over three persons of working age for every person aged 65 years and over. Currently, more than one in five (21.3%) of the EU's estimated population of 448.8 million people is aged 65 years and above.⁵ Furthermore, in 2023, the median age of the EU's population was 44.5 years, compared with 38.9 years in the United States and only 18.8 years in Africa.⁶ The development of a European dimension to VET, including by integrating periods of learning abroad into VET curricula, is another continuing theme.

However, there are some differences. Importantly, post-2020 European VET policy places greater emphasis on VET's role in making Europe more resilient. VET aligned with economic cycles, evolving jobs and working methods that provides key competences – including digital, green and other life skills – is seen as a way of strengthening resilience (European Commission, 2020). It is also viewed as enabling Europe to better withstand any economic 'shocks' caused by events such as the 2008 financial crisis, the COVID-19 pandemic and Russia's invasion of Ukraine.

5 <<https://ec.europa.eu/eurostat/statistics-explained/>>.

6 <<https://www.worldometers.info/>>.

Consistent with the Copenhagen Process, post-2020 European VET policy continues to be built on strong partnerships with stakeholders, including social partners, companies, employers’ organisations, chambers, branch associations, VET providers, learners’ representatives, national, regional and local public administrations, employment services and social economy organisations. Through apprenticeships and WBL, companies are regarded as learning venues and as being crucial to modern and excellent VET (Council of the European Union, 2020a).

The VET and VET-related targets demonstrated the value of using statistical data to provide information on trends as ways of monitoring and developing European VET policy. Trends revealed by the data and improvements in VET statistical data collections (a long-standing aim of European VET policy, highlighted in the Maastricht Communiqué (Council of the EU, 2004)) over the past 20 years have influenced what is measured, and how. The statistical targets for the post-2020 European VET policy cycle are the most comprehensive ever set for monitoring progress. The downside is that statistical changes make comparisons over time difficult owing to breaks in time series and changes to data-collection methods in Member States.

In addition, different policy documents set different targets and deadlines, but all of them should be achieved by 2025 or 2030. Table 6 summarises the main statistical targets, their deadlines, source documents and progress to date.

TABLE 6: Main VET and VET-related statistical targets – post-2020 European VET policy

Objective	Policy document (source)	Target (%)	Target date	Progress to date (2022) (%)
Participation of adults aged 25 to 64 in learning during the past 12 months	Skills Agenda (European Commission, 2020)	50	2025	46% in 2022
	Council Resolution on European Education Area (EEA) (Council of the EU, 2023)	47	2025	
	European Pillar of Social Rights (EPSR) Action Plan (European Commission, 2021a, 2021b)	60	2030	
Participation of low-qualified adults 25 to 64 in learning during the past 12 months	Skills Agenda	30	2025	25% in 2022

Objective	Policy document (source)	Target (%)	Target date	Progress to date (2022) (%)
Share of unemployed adults aged 25 to 64 with a recent learning experience	Skills Agenda	20	2025	13.2
Share of adults aged 16 to 74 having at least basic digital skills	Skills Agenda	70	2025	53.9
	EPSR Action Plan	80	2030	
Share of employed graduates from VET (age group 20 to 34 who graduated 1 to 3 years ago from upper-secondary or post-secondary, non-tertiary VET)	Council Rec. on VET (Council of the EU, 2020c)	82	2030	79.7
Recent graduates from VET (aged 20–34) who benefitted from exposure to WBL during their vocational education and training	Council Rec. on VET	60	2025	60.0
	Council Res. on EEA			
Learners in VET who benefited from a learning mobility abroad	Council Rec on VET	8	2025	2.1
	Skills Agenda			
Early leavers from education and training	Council Res on EEA	Below 9	2030	9.0
Tertiary-level attainment (Age group 25 to 34)	Council Res on EEA	45	2030	42.0
Rate of NEETs (not in employment, education or training) aged 15 to 29	EPSR Action Plan	9	2030	11.7
Share of adults aged 20 to 64 in employment	EPSR Action Plan	78	2030	74.6
Employed ICT specialists	2030 Digital Compass (European Commission, 2021a, b)	20 million	2030	9.37 million
Employment rate	EPSR Action Plan	74.6	2030	78.0

Source: Cedefop.

Notes: Rec. = Recommendation; Res. = Resolution.

The targets cover areas where the EU underperformed in the period from 2010 to 2020, notably participation by adults in lifelong learning and mobility. An overall target for adult participation in lifelong learning has been complemented by targets for specific groups of adults in the workforce and a new method of counting participation has been devised.⁷ The targets also continue to seek improvements in the levels of educational attainment by continuing to reduce early school-leaving to less than 9% by 2030. Linked to this is a target to reduce the share of young people, aged 15 to 29 years, who are not in employment, education or training (NEETs). The EU also wants 45% of 25- to 34-year-olds to be tertiary education⁸ graduates by 2030.

New targets for the EU employment rate and, for the first time for recent VET graduates, have been added to the targets. The new targets also monitor new priorities, such as the extent of WBL, the employment of ICT specialists and the extent of digital skills among the adult population. To an extent, the targets reflect a desire to monitor the VET contribution to the ‘supply’ of skills, measured in terms of levels of educational attainment, and the ‘demand’ for skills as reflected in the employment rate.

Copenhagen Process: Not limited to Europe or the international sphere

The Copenhagen Process as an example of the EU’s open method of coordination (OMC) applies at the European level, but its principles can be used to create effective partnerships and networks at national, sectoral and local levels. These principles can be found in various frameworks for improving policy coordination, including that developed by the University of the Witwatersrand, Johannesburg,⁹ which focuses on four key elements: why, who, how and what.

Why: Understanding the real objectives of skill engagements

Many engagements fail because they try to do too many things. The key is to tackle specific problems in the context of the specific skills system. The Copenhagen Process does this through a pooling of Member States’ VET policy objectives and underpinning them with measurable statistical targets.

Who: Who should be involved and what should they do?

In the EU, this is more easily defined as it involves all Members States, the European Commission and the European social partners. However, Member States have different

7 The post-2020 European VET policy cycle bases the targets for adult participation in lifelong learning on new measuring methodology that counts participation learning which took place in the past 12 months rather than during the four weeks prior to measurement. Data using this new methodology as collected by the EU Labour Force Survey (LFS) were not available at the time of writing. The latest available estimate is that from the Adult Education Survey (AES), which was carried out in 2016.

8 Qualifications classified ISCED 5-8.

9 See: A framework for improving skills coordination: Insights from the Skills Dialogue Series. Dialogue 5, 2022. University of the Witwatersrand, Johannesburg. Available at: <https://issuu.com/witsmarketing/docs/skills_dialogues>.

institutional mixes for developing VET policy. Such mixes may include any combinations of, for example, national and regional governments, social partners, sector bodies, chambers of commerce, qualifications authorities, research and various learning institutions, and training providers. Not all organisations need to be involved in everything. However, there needs to be a clear political capacity to provide policy direction and decide priorities, and a technical capacity to provide expertise to develop and propose action in order to implement policy and policy changes and to monitor and report on progress. This implies a capacity to provide research, labour market analyses and statistical data.

How: finding ways to engage

Opportunities are needed (structured meetings, forums, technical working groups, conferences, etc.) to exchange and share information and proposals, review progress and revise objectives. Dialogue is needed to discuss challenges openly.

In the Copenhagen Process, various timescales are applied by which certain milestones should be met. These comprise both technical and policy initiatives. There is also scope for bottom-up and top-down initiatives. Currently, European VET policy works on a 10-year cycle with a midpoint review. There are also various types of work that can be done jointly to strengthen cooperation and engagement – for example, research, labour market analyses, developing and collecting statistical data, and monitoring, reporting and peer-reviewing progress.

What: What is needed to succeed?

The Copenhagen Process operates around three key elements: partnership, resources and momentum. Partnership is needed to agree on common priorities. Different interests have to be reconciled and solutions found. This takes time, willingness, determination, goodwill and compromise. Resources are necessary, too. High-quality VET that keeps pace with technological and organisational change is not cheap and this reality will necessitate tough choices about the priorities for resources. Momentum must be maintained because VET reform takes time and the results of implementing policies and decisions are not immediately visible.

Maintaining momentum requires an unequivocal understanding of the purpose and benefits of VET reform. Under the Copenhagen Process, political leadership has proved invaluable in maintaining the momentum for VET reform. This has entailed responsible ministers providing direction through periodic mandates that combine short-term objectives in order to be able to measure progress towards the long-term vision.

Conclusions

The case for the EU's continuing VET reform and the Copenhagen Process is compelling. The incentive for European cooperation in VET has grown stronger. Broadly, Europe continues to face similar challenges to those that launched the Lisbon Strategy in 2000 and

the Copenhagen Process in 2002. The rapid and accelerating pace of change risks overtaking the skills of Europe's ageing workforce, threatening jobs and social cohesion. The major difference between the year 2000 and now, though, is that change is now faster and more far-reaching. The skills required by employers and people alike are being transformed by technology, more diverse working conditions, times, locations and behavioural norms. Consequently, people need increasingly complex combinations of interpersonal, organisational and problem-solving skills, in addition to specific job-related skills, across all types of job, including those traditionally regarded as low-skilled, such as care workers and security guards.

Has the Copenhagen Process worked? The past 20 or so years provide clear evidence of both successes and setbacks.

It has provided, and continues to provide, VET with a policy voice, which matters, because – unlike for education – the responsibility for VET is often divided and devolved. It has promoted mutual goal-setting, collaborative action and shared accountability for results. This has strengthened the alignment between the VET system and economic and industrial policy, employment strategies, sector priorities and labour market needs. Consequently, it is fair to say that the Copenhagen Process has provided a basis for partnership and cooperation, without which European VET reform would not have been so comprehensive. It is also fair to say that Member States' VET systems have benefited from the European cooperation that the Copenhagen Process has underpinned.

The setbacks referred to in this article reflect the fact that modernising VET will probably always be a work in progress. But this underlines the case for having a process that provides a point of reference through time which sets out the changes and the reforms needed.

The final word should go to Member States, the European Commission and social partners, who assess the process positively. In the Osnabrück Declaration (Council of the EU, 2020a), they described the Copenhagen Process as a catalyst for modernising VET in many EU Member States, which has 'supported work towards Europe's strategic goals and targets'. [It] provides a 'platform to intensify, complement and operationalise ... European VET policy ... and ... for strengthening cooperation with social partners, chambers, VET providers and learners' organisations ... supporting a just transition towards the digital and green economy'.

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Gendered labour market outcomes among South African technical and vocational education and training (TVET) completers

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ABSTRACT

South Africa's post-school education and training (PSET) system plays an important role in addressing historical inequalities and preparing youth for the labour market. Technical and vocational education and training (TVET) colleges have seen rising female enrolment, including in traditionally male-dominated fields like Engineering. This study examines whether women's increased participation in TVET programmes translates into equal labour market opportunities. Using administrative enrolment data and a tracer study of TVET completers, findings show that female completers face significantly higher unemployment rates than men, unrelated to the over-representation in Business Studies or services programmes. Additionally, women earn 22% less than men, even after accounting for study choices and qualification levels. While challenges remain in ensuring gender parity, the increasing presence of women in male-dominated fields signals progress. Efforts must focus on translating these gains into equitable employment outcomes.

KEYWORDS

Women in the TVET sector; gender differences; gendered inequalities; role of PSET system; equal opportunities; gender parity

Introduction

Globally, the technical and vocational education and training (TVET) sector plays a vital role in socio-economic development through the promotion of intermediate skills (Kraak, 2018; DHET, 2019). However, while TVET holds the potential to empower young Africans, the ‘transformation of oppressive gender dynamics’ is also required for advancing the Sustainable Development Goals (SDGs) and achieving Agenda 2063 in Africa, which calls for equality of all persons in work and education (Bray-Collins, Andrade & Wanjiru, 2022:152). Both in South Africa and globally, a gender bias in TVET course choices has been documented, with an over-representation of women enrolled in low-paying service or care sector courses, such as secretarial work and childcare, and under-represented in traditional ‘technical’ trades such as the electrical trade, mechanical engineering and construction (ILO, 2020). Furthermore, women are less likely to have opportunities for internships with master-craftspeople, while men have better prospects of obtaining apprenticeships with experienced mentors as opposed to women who are more likely to acquire skills through unstructured, informal learning (ILO, 2020; Nordman & Pasquier-Doumer, 2012). Recent policy shifts have, however, resulted in an increase in the enrolment of women in TVET globally, particularly in traditionally male-dominated courses (UNESCO, 2020). These gains notwithstanding, there is evidence that TVET institutions may reproduce gender inequality unless long-standing biases towards perceptions of women’s work are addressed (Bray-Collins et al., 2022).

Using the largest destination study of TVET completers in South Africa, this article aims to identify whether the recent increases in TVET enrolment among women have coincided with the equal probability of employment for women and men and equality in gender earnings. Particular attention is paid to whether women’s labour market disadvantages are evident among a subgroup which completed a qualification in the typically male-dominated engineering vocational subfield. The remainder of the paper is structured as follows. Section 2 begins by outlining the literature related to women’s participation in the TVET sector both globally and in the South African context. Section 3 describes the relatively novel dataset that we analyse in the empirical section of the article and offers a description of the sample. In Section 4, we present the results in two parts. We begin with a descriptive analysis of gendered differences in employment and earnings among a recent cohort of TVET completers. We then estimate a series of regressions to identify whether and how the choice of study field, location and level of qualification explain the persistence of gender gaps in the probability of employment and earnings. Finally, we conclude with some reflections on gendered inequalities in the TVET sector and identify recommendations for the direction of future research.

Women in the TVET sector

Gender inequalities in the TVET sector

Gender inequalities in the TVET sector are driven by both external and internal factors. Bray-Collins et al. (2022), in an extensive literature review on gender inequality in African

TVET programmes, observed that external drivers are often influenced by sociocultural, socio-economic and sociopolitical relationships which result in gender inequality. For example, even when women enter the labour market, the burden of care and domestic responsibilities often restricts equal participation (Posel et al., 2024). Internal factors which disadvantage women in the TVET sector are often shaped by perceptions of gendered roles in the labour market and include educational choices and gender barriers in TVET colleges. In particular, educational choices often result in women being over-represented in the care and service sector professions and under-represented in ‘technical’ and industrial fields. This is particularly evident in programmes related to science, technology, engineering and mathematics (STEM) careers, which are becoming more important for progress in the 21st century (UNESCO, 2020). While university degrees are required for some STEM careers, the TVET sector also offers STEM-related qualifications. However, there is empirical evidence that young women in TVET institutions are less likely to select programmes which prepare them for STEM careers (e.g. engineering¹) (UNESCO, 2020; Bray-Collins et al., 2022).

Comparisons are often difficult to make across different contexts, but one stylised fact is that employment in STEM careers is biased towards males and more likely to result in more secure, formal sector jobs which are better remunerated (UNESCO, 2020). In a recent study by the World Bank (2019) it was found that women who gained employment in STEM sectors earned approximately three times more than women who remained in female-dominated sectors. Although gender parity in STEM graduates has been achieved in many countries, including South Africa, women’s remuneration in such male-dominated occupations still tends to be less than men (Bray-Collins et al., 2022). An additional source of gender inequality is found in the gap between female enrolment in STEM-related TVET programmes and employment in STEM-related occupations (UNESCO, 2020). This phenomenon is often termed the ‘leaky pipeline’ and is characterised by women dropping out between training and labour market entry.

In terms of the gendered barriers in TVET colleges, a root cause is often ascribed to the lack of gender-awareness which potentially creates barriers for women to succeed (Bray-Collins et al., 2022). This is often exacerbated by gender bias in curriculum content, available facilities, the availability of female role models/mentors, and selection into apprenticeships (Bray-Collins et al., 2022). More broadly, Bray-Collins et al. (2022) have suggested that TVET policies and strategies for implementation do not sufficiently address gender inequalities in the African TVET context. Thus, while progress has been made in the TVET sector, more is needed to ensure gendered equality in study choices, qualification completion and labour market outcomes (UNESCO, 2020; Bray-Collins et al., 2022).

1 UNESCO (2020) defines STEM study programmes in TVET as those which are focused on: Natural Sciences, Mathematics and Statistics; Engineering, Manufacturing and Construction; Communication and Information Technologies; and Agriculture, Forestry, Fisheries And Veterinary.

Gender and the TVET sector in South Africa

Education in South Africa has long been seen as a means of promoting equality in a society that is plagued by high levels of inequality (Khuluvhe & Negogogo, 2021). An inequality trap has been identified which, in part, operates through the quality of schooling provided to children from different socio-economic backgrounds (Friderichs, Keeton & Rogan, 2023). Given the high returns to post-secondary education, the post-schooling education and training (PSET)² sector has been identified as a potential way of breaking the cycle of poverty (Branson & Kahn, 2016). Part of the challenge is, however, poor matric outcomes limiting access to post-school education (Branson & Kahn, 2016). Even of those who do pass matric, only a fraction (30%) pursues any form of post-secondary education or training.

In the 2013 White Paper, DHET (2013) aimed to expand the capacity of the PSET sector, part of which has seen a rapid expansion of the TVET sector in South Africa. TVET college enrolment figures increased rapidly between 2010 and 2019 from 358 393 to 673 490, respectively (DHET, 2020). However, this is still well short of the 2,5 million enrolment target for 2030 (DHET, 2023a). The rapid increase in enrolment since 2010 has largely been facilitated through the National Student Financial Aid Scheme (NSFAS), which supports students from households with an income below a certain threshold to enter post-schooling education. The funding covers tuition fees and makes allowances for transport and accommodation costs. The value of the TVET sector is that the programmes are focused on the needs of industry and therefore specifically focused on labour market skills and employability. However, despite the expectations of the TVET sector, authors including Rawkins (2018), Papier (2021), Scheepers & Gebhardt (2021) show that the full potential of the sector is not being reached given poor performance in throughput rates, employability and skills development. In South Africa, labour market outcomes for university graduates are better than those for TVET completers, with unemployment rates in 2017 being 7% and 33%, respectively (StatsSA, 2018; Sibiyi, Nyembezi & Bogopa, 2021).

Accordingly, it has been difficult to position TVET colleges as post-school institutions of 'first choice'. Branson and Khan (2016), in a study of the factors influencing post-secondary education, found that students in the highest income group have low levels of enrolment in TVET colleges when their test scores are high. This suggests that, when there are no financial or academic constraints, students will not choose to enrol in a TVET college but rather attend a university. Low-income households with individuals with high test scores are also more likely to enter universities. These students with limited academic constraints thus appear to choose to attend universities when offered NSFAS support or other sources of funding.

2 The PSET sector consists of both private and public service providers. The public providers include TVET colleges, higher education institutions (universities) and community education and training (CET) colleges (Terblanche & Bitzer, 2018).

Since the end of apartheid, inequality research has focused predominantly on racial inequalities (Van der Berg & Louw, 2004). However, considering the increases in inequality within racial groups (Van der Berg, 2014), and that income inequality in South Africa is generated largely in the labour market (Hundenborn, Leibbrandt & Woolard, 2016), recent research has focused on inequality in educational opportunities and on gender inequalities in the labour market (Spaull, 2015; Posel et al., 2024). Historically, women have attained lower levels of post-school education, however, this is no longer the case in South Africa where women actually have higher levels of education on average, particularly among the younger age cohort (Posel et al., 2024). Nonetheless, women continue to earn less than men and have generally poorer employment outcomes (StatsSA, 2018) – particularly after aiming for educational attainment (Magadla, Leibbrandt & Mlatsheni, 2019).

Research on gender inequality in the early part of the post-apartheid period found that the gender remuneration gap was driven by differences in earnings at the lower end of the income distribution and thus ascribed to as the ‘sticky floor effect’ (Posel et al., 2024). However, over the post-apartheid period, minimum wage legislation contributed to a reduction in the gender gap at the lower end (Posel et al., 2024). At the same time, the unexplained part of the gender gap, often ascribed to labour market discrimination, is greater at the upper end of the income distribution – typically referred to as the ‘glass ceiling’ effect (Posel et al., 2024). The fields of study in which women enrol, particularly at the post-secondary education level, is in part identified as the reason for gender inequalities resulting in employment and occupational inequalities.

Mirroring trends in the higher education sector (Van Broekhuizen & Spaull, 2017), there have been large increases in TVET enrolment among women over the past decade. In 2014, women made up 50.9% of total TVET enrolment, 50.8% of Nated (National Accredited Technical Education Diploma) enrolment and 58.4 percent of NCV (National Certificate (Vocational)) enrolment (DHET, 2016). By 2021, this had increased to 63% of total enrolment, 61.2% of Nated enrolment and 69.3% of NC(V) enrolment (DHET, 2023b; UNESCO, 2020). Similarly, Khuluvhe and Negogogo (2021) found that the gender parity index³ (GPI) in the TVET sector had increased from 0.9 in 2010 to 1.4 in 2019. This means that, while there were more men than women enrolled in TVET programmes in 2010, by 2019 40% more women were enrolled. This change in the TVET sector, GPI was driven mostly by the black African population group, which experienced an increase in the index from 1:1.5 in 2010 and 2019, respectively. The GPI for white and Indian/Asian race groups was the lowest at 0.4 or less for both race groups over the study period. While the research by Khuluvhe and Negogogo (2021) did not study the GPI for STEM-related subjects compared with non-STEM programmes in the TVET sector, there are some recent enrolment figures available. The most recent DHET report (2023b) on the TVET sector suggests, for example, that women accounted for nearly 50% of N6 Engineering Studies enrolments and that

3 The GPI is the ratio of female to male participation, with a GPI of 1 indicating a 1:1 ratio and thus equitable gender participation. A GPI of greater than 1 indicates higher female participation, whereas a GPI of less than 1 indicates higher male participation (Khuluvhe & Negogogo, 2021).

there were more women than men enrolled in the NC(V) (Levels 2–4) Civil and Electrical Engineering programmes in the 2021 academic year.

Method

Data

The data analysed in this article come from the largest (n=18 579) tracer study of South African TVET completers. TVET completers from all 50 public TVET colleges who qualified in 2018 were interviewed in 2023, that is, nearly five years after completing a TVET qualification. Since many TVET completers participate in a work-based learning (WBL) programme, the study was designed to allow enough time for the 2018 completers to undertake a WBL programme and then find employment related to their qualification. This period does, of course, include the pandemic-affected years during which the labour market experienced severe disruptions.

TVET completers were identified from DHET's enrolment database (TVET management information system –TVETMIS) and a 2018 database containing examination results. The sample was restricted to NC(V) (Level 4) and N4–6 completers in the fields of Engineering, Business, Services and Production. Two different sampling strategies were used to identify respondents. For the Business/Commerce and Engineering completers, a random probability sample stratified by qualification, gender and province was selected. This approach ensured that the gender differences in study choices were reflected in the final sample and that completers from all provinces were represented proportionately. However, as requested by the DHET, all completers of qualifications in the services vocational field were contacted for an interview. Consequently, a larger share of completers in the Services and Production qualifications, relative to their population size, was included in the study and the survey margin of error is smaller for this group. The results for completers from Business and Engineering Studies are, therefore, not directly comparable with the results for completers from the Services and Production qualifications.

Table 1 shows the final sample for the tracer study of 18,579 TVET completers (14% of the total sample frame) disaggregated by gender and qualification. Women make up the vast majority of completers in the Business Studies, and Services and Production vocational fields (75% and 82%, respectively) while making up about half of all completed Engineering qualifications. Taken together, the estimates in the table demonstrate the remarkably gendered composition of TVET qualifications and are evidence that women are now equally represented among the Engineering qualifications, which, historically, had been male-dominated.

Data collection was conducted by a professional fieldwork company with experience in conducting social science research in general, and tracer study telephone interviews in particular. Since telephone numbers were the only reliable contact information provided in the TVETMIS database, telephonic surveys were used to collect data for this tracer study. Interviews lasted, on average, just under ten minutes and the responses were captured with the aid of computer-assisted telephone interviewing (CATI) software.

TABLE 1: Sample sizes by qualification type, vocational field and gender (n= 18 579)

	NC(V)	N4	N5	N6	Total
Engineering Studies					
Women	805 (50.8)	127 (46.0)	168 (53.2)	553 (51.2)	1 653 (50.7)
Men	779 (49.2)	149 (54.0)	148 (46.8)	528 (48.8)	1 604 (49.3)
Total	1 584	276	316	1 081	3 257
Business Studies					
Women	535 (82.8)	1 502 (75.5)	1 314 (73.6)	5 223 (74.7)	8 574 (75.1)
Men	111 (17.2)	488 (24.5)	471 (26.4)	1 774 (25.3)	2 844 (24.9)
Total	646	1 990	1 785	6 997	11 418
Services and Production					
Women	505 (74.7)	323 (81.8)	344 (82.1)	1 998 (84.1)	3 170 (82.0)
Men	171 (25.3)	72 (18.2)	75 (17.9)	379 (15.9)	697 (18.0)
Total	676	395	419	2 377	3 867

Source: Own calculations from the TVET tracer study.

Notes: Percentages (column totals) in parentheses. There were 37 missing values for gender in the original TVETMIS database.

There are two main limitations associated with the study. First, since all interviews were conducted telephonically (and most of these with the aid of mobile phones), the interviews were very short. This meant that, among other things, information on past education (i.e. schooling history) was not captured through the survey. This is a particular problem because the department’s administrative database (TVETMIS) also does not contain this information. The result is that it is not possible to identify whether schooling background impacts on employment outcomes. To the extent that schooling backgrounds are correlated with employment outcomes, the differences in the probability of employment/unemployment by gender, qualification stream and province would be overstated.

Second, and perhaps the main limitation, as with all tracer studies, is that selection bias may influence the results (e.g. the analysis of employment outcomes) and it is not possible to identify the direction of this bias (Branson & Leibbrandt, 2013). While the sampling strategy ensured proportionate sampling by qualification type, vocational field, gender and province, it is possible that there are non-observable differences which could be correlated with the outcomes of interest (e.g. employment status and earnings).

Results

Descriptive statistics

Labour market status, absorption and unemployment rates for women and men by level of qualification and vocational field are presented in Table 2. It is evident that men have higher levels of absorption and lower levels of unemployment for all levels of qualification and across vocational fields. Apart from completers in the NC(V) L4 Services and Production qualification, women, regardless of level of qualification and vocational field, have an unemployment rate of 60%. On the other hand, male completers experience an unemployment rate of below 60% for all levels of qualification and all vocational fields, except for NCV(4) Level 4 Business Studies completers.

There are, moreover, some potentially important differences between employment outcomes by level of qualification and/or vocational field. For example, completers from the Engineering field of study are more likely to be involved in internships (WBL) compared with the other two vocational fields. Also evident is that the largest gender difference in unemployment is for the Engineering N5 Level qualification, with male and female unemployment rates being 42.25 per cent and 61.49 per cent respectively – an approximate 20 percentage-point difference. Self-employment is, furthermore, greatest amongst completers from the Services and Production programmes. Completers of the NC(V) L4 Business Studies qualification have the highest unemployment rates for both women and men – 73.67% and 67.62%, respectively.

TABLE 2: Labour market status by qualification level, vocational field and gender (n= 18 579)

	NC(V)		N4		N5		N6		Total	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
	Engineering Studies									
Labour market status (%)	n=1 584		n=276		n=316		n=1 081		n=3 257	
Employed	14.18 (1.2)	24.65 (1.5)	18.11 (3.4)	22.82 (3.4)	17.26 (2.9)	35.14 (3.9)	17.00 (1.6)	22.35 (1.8)	15.74 (0.9)	24.69 (1.1)
WBL	16.29 (1.3)	14.51 (1.3)	11.81 (2.9)	14.77 (2.9)	12.50 (2.6)	16.89 (3.1)	16.46 (1.6)	17.05 (1.6)	15.62 (0.9)	15.59 (0.9)
Not working	59.45 (1.7)	51.86 (1.8)	59.06 (4.4)	53.02 (4.1)	54.76 (3.9)	41.22 (4.1)	57.50 (2.1)	51.33 (2.2)	58.29 (1.2)	50.81 (1.2)
Self-employed	1.12 (0.4)	3.59 (0.7)	2.36 (1.4)	2.68 (1.3)	4.17 (1.5)	3.38 (1.5)	0.90 (0.4)	3.60 (0.8)	1.45 (0.3)	3.49 (0.5)
Studying	8.96 (1.0)	5.39 (0.8)	8.66 (2.5)	6.71 (2.1)	11.31 (2.5)	3.38 (1.5)	8.14 (1.2)	5.68 (1.0)	8.90 (0.7)	5.42 (0.6)

	NC(V)		N4		N5		N6		Total	
TOTAL	100	100	100	100	100	100	100	100	100	100
Absorption rate	34.75	45.49	35.34	43.48	38.51	57.75	37.70	45.67	36.16	46.52
Unemployment rate	65.25	54.51	64.66	56.52	61.49	42.25	62.30	54.33	63.84	53.48
	Business Studies									
Labour market status (%)	n=646		n=1 990		n=1 785		n=6 997		n=11 418	
Employed	13.83 (1.5)	19.82 (3.8)	20.59 (1.0)	29.92 (2.1)	20.72 (1.1)	30.36 (2.1)	21.30 (0.6)	30.06 (1.1)	20.62 (0.4)	29.69 (0.9)
WBL	9.53 (1.3)	9.01 (2.7)	10.46 (0.8)	9.22 (1.3)	6.85 (0.7)	8.28 (1.3)	10.73 (0.4)	9.42 (0.7)	10.01 (0.3)	9.18 (0.5)
Not working	69.53 (2.0)	63.96 (4.6)	61.83 (1.3)	52.66 (2.3)	63.29 (1.3)	51.38 (2.3)	61.87 (0.7)	53.41 (1.2)	62.56 (0.5)	53.36 (0.9)
Self-employed	1.31 (0.5)	1.80 (1.3)	1.40 (0.3)	3.48 (0.8)	1.68 (0.4)	4.25 (0.9)	1.13 (0.1)	2.54 (0.4)	1.27 (0.1)	2.95 (0.3)
Studying	5.79 (1.0)	5.41 (2.2)	5.73 (0.6)	4.71 (1.0)	7.46 (0.7)	5.73 (1.1)	4.98 (0.3)	4.57 (0.5)	5.54 (0.2)	4.82 (0.4)
TOTAL	100	100	100	100	100	100	100	100	100	100
Absorption rate	26.29	32.38	34.61	45.02	31.92	45.91	35.25	44.42	34.08	44.30
Unemployment rate	73.71	67.62	65.39	54.98	68.00	54.09	64.73	55.40	65.90	55.59
	Services and Production									
Labour market status (%)	n=676		n=395		n=419		n=2 377		n=3 867	
Employed	29.11 (2.0)	36.84 (3.7)	19.81 (2.2)	31.94 (5.5)	27.91 (2.4)	40.00 (5.7)	27.14 (1.0)	34.56 (2.4)	26.79 (0.8)	35.44 (1.8)
WBL	7.52 (1.2)	5.26 (1.7)	6.19 (1.3)	5.56 (2.7)	3.78 (1.0)	4.00 (2.3)	4.61 (0.5)	6.33 (1.3)	5.14 (0.4)	5.74 (0.9)
Not working	52.48 (2.2)	43.27 (3.8)	59.13 (2.4)	47.22 (5.9)	59.59 (2.6)	48.00 (5.8)	55.53 (1.1)	49.60 (2.6)	55.85 (0.9)	47.63 (1.9)
Self-employed	4.36 (0.9)	8.19 (2.1)	3.41 (1.0)	4.17 (2.4)	4.07 (1.1)	2.67 (1.9)	3.96 (0.4)	5.80 (1.2)	3.98 (0.3)	5.88 (0.9)
Studying	6.53 (1.1)	6.43 (1.9)	11.46 (1.8)	11.11 (3.7)	4.65 (1.1)	5.33 (2.6)	8.76 (0.6)	3.69 (1.0)	8.24 (0.5)	5.31 (0.8)
TOTAL	100	100	100	100	100	100	100	100	100	100
Absorption rate	44.42	54.09	33.69	46.88	37.96	49.30	39.33	48.63	34.40	45.10
Unemployment rate	55.36	45.91	65.60	53.13	61.42	50.70	60.45	51.37	65.57	54.83

Source: Own calculations from the TVET tracer study.

Notes: Standard errors (SE) in parentheses. There were 37 missing values for gender in the original TVETMIS database.

Table 3 extends the analysis by considering gender differences in reported monthly earnings by level of qualification and vocational field. Men earn higher wages than women for every level of qualification and vocational field except among the N4 Engineering Studies completers. The sample sizes for the male and female earnings for the N4 Engineering Studies are, however, very small with 25 women and 33 men. Men with the highest monthly average earnings are those that completed a qualification in the Engineering vocational field (R8 423.39), while women's earnings in the same field (R6 049.65) were not significantly different from their average earnings in the field of Business Studies (R6 140.63). Women who completed a qualification in the Services and Production field earned, on average, the least (R5 460.06 per month). Excluding the qualifications which have 100 or fewer observations in each vocational field, the level of qualification with the lowest male average earnings is still greater than the highest female average earnings. Taken together, these descriptive findings suggest that there is a large gender earnings gap across all the qualification types and three fields of study. The other key insight from these summary statistics is that women's earnings do not appear to be higher for those who completed an Engineering-related qualification. In other words, Table 3 offers some preliminary evidence that, among a recent cohort of TVET completers, women do not appear to have attained an earnings premium by completing a qualification in a traditionally male-dominated field of study.

TABLE 3: Mean monthly earnings by qualification level, vocational field and gender (n=4 520)

	NC(V)		N4		N5		N6		Total	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
	Engineering Studies									
Women	5 372.58	428.73	8 404.04+	2 378.09	6 264.41+	1 231.95	6 212.76	393.12	6 049.65	327.22
Men	8 274.97	615.34	6 536.97+	940.80	8 981.82+	1 872.72	8 829.03	851.36	8 423.39	472.70
	Business Studies									
Women	5 144.51	432.89	5 531.82	244.44	6 361.26	340.58	6 347.64	164.21	6 140.63	124.23
Men	5 623.96	774.79	7 527.65	630.91	6 802.40	582.12	7 818.42	346.97	7 524.05	264.32
	Services and Production									
Women	5 687.16	387.79	4 833.33+	681.10	5 865.29	658.12	5 393.17	174.25	5 460.06	159.91
Men	8 141.72	966.85	4 832.00+	491.82	8 667.86	2 140.49	7 151.01	401.86	7 360.35	411.25

Source: Own calculations from the TVET tracer study.

Notes: There were 37 missing values for gender in the original TVETMIS database. Sample size: NC(V) L4 Eng.: female n=130, male n=167; NC(V) L4 Bus.: female n=130, male n=167; NC(V) L4 Services and

Production: female n=183, male n=71; N4 Eng.: female n=25, male n=33; N4 Bus.: female n=354, male n=154; N4 Services and Production: female n=75, male n=25; N5 Eng.: female n=34, male n=44; N5 Bus.: female n=241, male n=125; N5 Services and Production: female n=102, male n=28; N6 Eng.: female n=134, male n=154; N6 Bus.: female n=1 174; male n=453; N6 Services and Production: female n=559, male n=138. +100 or less observations for the level of qualification.

Regression analysis: Explaining gender difference in employment and earnings

Having shown that there are large gender differences in employment outcomes and earnings levels among TVET completers, this section now examines whether demographic characteristics and study choices can explain these gender disadvantages in the labour market. Table 4 shows the results of a linear probability model where the dependent variable is a binary outcome denoting whether a respondent is employed (including the self-employed and those in a WBL programme). In the first specification (I), the only independent variable is gender, and the results show that, on average, women who completed a TVET qualification are approximately 10 percentage points less likely than men to be employed. After including controls for age and province of origin (II), the female disadvantage increases slightly. The third specification (III) includes choice of study field and level of qualification as independent variables and is particularly interesting since it might have been expected that these two variables would explain at least part of the gender disadvantage in employment. However, the results suggest that, while employment probabilities are slightly lower among the completers of Business qualifications (relative to Services and Production qualifications), the completers of engineering-related qualifications are not significantly more likely to be employed. Similarly, there is no evidence that the type (or level) of qualification is associated with employment outcomes. The most important finding from the table, however, is that, even though women are over-represented among the Business qualifications, the female disadvantage in employment is almost unchanged between specifications II and III. In other words, the lower probability among women who have completed a TVET qualification does not appear to be ‘due’ to different study choices. The final specification (IV) considers this finding more closely by restricting the sample to the completers of engineering-related qualifications. The results are surprisingly consistent and suggest that, on average, women who have completed an Engineering qualification are about 11 percentage points less likely to be employed than their male counterparts.

TABLE 4: Employment probabilities among TVET completers (estimation by linear probability)

	I	II	III	IV (Engineering only)
Female	-.102*** (.008)	-.116*** (.008)	-.114*** (.008)	-.113*** (.017)
Age		.003*** (.001)	.002*** (.001)	-.005* (.003)
Province	No	Yes	Yes	Yes

	I	II	III	IV (Engineering only)
Vocational field				
Business			-.022** (.009)	
Engineering			.007 (.012)	
Qualification type				
N4			-.002 (.013)	-.027 (.031)
N5			.001 (.014)	.065** (.029)
N6			.013 (.011)	.016 (.019)
Intercept	.431*** (.007)	.582*** (.022)	.586*** (.025)	.721*** (.073)
F Statistic	168.95 (p=0.000)	71.07 (p=0.000)	48.35 (p=0.000)	8.57 (p=0.000)
R Squared	.009	.036	.037	.029
N	18 535	18 535	18 535	3 256

Source: Own calculations from the TVET tracer study.

*Notes: Standard errors in parentheses. Reference categories include: male, Services and Production, and NC(V). Level of significance denoted by: *** Significant at the 99% confidence level. ** Significant at the 95% confidence level. * Significant at the 90% confidence level. For the first specification (I), the independent variable is gender; the second specification (II) includes gender, age and province of origin; the third specification (III) includes variables from II as well as choice of study field and level of qualification; the fourth specification (IV) includes the same variables as II as well as level of qualification, and, furthermore, is restricted to the Engineering field.*

Table 5 extends the analysis by examining the gender earnings gap among TVET completers. The raw earnings gap (I) is approximately 20% (18.2 per cent to be precise) and increases further to about 24% when controls for age and province are added. There is a relatively large earnings premium for Business (15%) and Engineering (22%) completers compared with those who obtained a qualification in Services- and Production-related fields. However, controlling for the field of study does not change the magnitude of the gender earnings gap appreciably. Even after conditioning on study choices and the level of qualification, women earn approximately 22% less than men. Perhaps most surprising (yet consistent with the descriptive statistics) is the finding in the final specification (IV) that women earn even less than men among the subpopulation that completed an Engineering-related qualification. Among the completers in this field, where women and men are evenly represented, women earn, on average, about 24% less than men (after adjusting the partial elasticity of -0.279). Among recent TVET completers, the somewhat startling finding is, therefore, that women face a significant disadvantage in finding employment and, when they do find employment,

they earn significantly less than men. The key contribution of the analysis is that, contrary to several a priori expectations, these gender disadvantages in the labour market do not appear to be explained by study choices or the historical under-representation of women in the more technical STEM subjects. Even among the cohort of students that attained an Engineering qualification, women experience several key disadvantages in the labour market.

TABLE 5: The female earnings penalty among TVET completers (conditional on employment)

	I	II	III	IV (Engineering only)
Female	-.201*** (.023)	-.246*** (.022)	-.224*** (.023)	-.279*** (.052)
Age		.029*** (.002)	.030*** (.002)	.038*** (.008)
Province	No	Yes	Yes	Yes
Vocational field				
Business			.157*** (.025)	
Engineering			.229*** (.034)	
Qualification type				
N4			-.029 (.041)	.035 (.101)
N5			.022 (.041)	-.047 (.089)
N6			.065** (.032)	.100* (.058)
Intercept	8.69*** (.019)	8.29*** (.060)	8.11*** (.068)	8.16*** (.225)
F-statistic	71.40 (p=0.000)	41.28 (p=0.000)	32.40 (p=0.000)	6.47 (p=0.000)
R Squared	.017	.082	.097	.107
N	4,509	4,509	4,509	712

Source: Own calculations from the TVET tracer study.

Notes: The dependent variable is the log of monthly earnings. Standard errors in parentheses. Reference categories include: male, Services and Production, and NC(V). Level of significance denoted by: *** Significant at the 99% confidence level. ** Significant at the 95% confidence level. * Significant at the 90% confidence level. For the first specification (I), the independent variable is gender; the second specification (II) includes gender, age and province of origin; the third specification (III) includes variables from II as well as choice of study field and level of qualification; the fourth specification (IV) includes the same variables as II as well as level of qualification, and, furthermore, is restricted to the Engineering field.

These findings require at least some further exploration. Using the data collected from the 2018 TVET completers, it is possible to examine at least two explanations for these persistent gender disadvantages – particularly among the completers of Engineering qualifications. The first possibility is that, within the broad category of Engineering, women attained different qualifications than men. However, the data suggest that there are only very small differences in the type of qualification (NC(V), N4⁴, N5 or N6) attained by women and men. Moreover, 93% of men and 91% of women qualified in the subfield of ‘Engineering and related studies’. Similar (and very small) percentages of men and women qualified in ‘Civil Engineering’ or ‘Electrical Infrastructure’. Therefore, there is very little evidence that the large female disadvantages in employment and earnings can be explained by the type or level of qualification attained within the Engineering field.

The other possibility which can be explored – at least in part – with the tracer study data is whether men are more likely to work in the Engineering field after completing an Engineering qualification. The data only allow a self-reported assessment of this possibility, as the questionnaire asked respondents whether they are currently working in a field that is related to what they studied at a TVET college. Since this question was only asked of those who were in employment, it is only possible to examine whether a lower likelihood of being in an Engineering-related occupation might explain the gender earnings gap. Among Engineering completers, about a third (33.7%) of women reported that their ‘work is related to what [they] studied at the college’. In contrast, 44% of men who completed an Engineering qualification reported that their employment was related to what they studied. This finding suggests that at least part of the gender earnings gap may be explained by women failing to ‘break into’ the Engineering field after qualifying. Further support for this conclusion can be found when specification IV from Table 5 is re-estimated on the subsample of Engineering completers who report that their current employment is either related or ‘somewhat’ related to what they studied. When this proxy, working in an Engineering-related job is used, the female earnings penalty is only about 7% (not shown in the table). In other words, when women are able to find employment in the traditionally male-dominated field of Engineering, then their earnings’ disadvantage decreases substantially. The key bottleneck, therefore, appears to be in the transition from TVET college into the labour market.

Discussion and conclusion

The South African PSET system plays a crucial role in addressing the inequalities inherited from the apartheid and colonial eras and in preparing young people to be successful in the labour market. Accordingly, the South African government has set ambitious targets for access to post-school education and the TVET sector is expected to see the largest increase in enrolments over the coming years (see Rogan, 2019). However, the sector has been beset by a number of problems over the past two decades and the employment outcomes of TVET

4 The sample sizes for the male and female earnings for the N4 Engineering studies are, however, very small with 25 women and 33 men.

completers have been somewhat disappointing (Papier et al., 2019). In addition, vocational education has been characterised by large gender differences in study choices and career paths, both in South Africa and further afield. As outlined earlier, these stark gendered patterns, particularly in enrolment and study choice, have prompted some commentators to describe the sector as a site which reproduces gendered inequalities.

Recent changes in the gendered characteristics of TVET enrolment have, however, signalled the arrival of important changes to the sector. Perhaps driven by some of the same factors which have seen a dramatic increase in women's enrolment in higher education, both globally and in South Africa, there is clear evidence that women are enrolling in TVET colleges at a greater rate than men, and, in particular, women are no longer under-represented in traditionally male-dominated fields of study such as Engineering and Construction. Against the backdrop of largely disappointing labour market outcomes and the reversal of long-standing gender differences in enrolment patterns, there are important questions about whether these changes have coincided with gender parity in employment outcomes. In other words, has women's increased enrolment in South African TVET programmes translated into equal opportunities in the labour market? In particular, are gendered employment outcomes more equal within a more 'technical' field such as Engineering?

To answer these questions, we analysed a novel dataset based on administrative enrolment data and a tracer study of recent TVET completers from three vocational fields. The results reveal several important insights which require further investigation. First, there is evidence that women face large and significant disadvantages in finding employment after completing a TVET qualification. Somewhat counter to a priori expectations, our findings do not suggest that the higher risk of unemployment for women is due to their over-representation in qualifications related to Business Studies or Services. Even among the completers with qualifications that fall within the more 'technical' field, women are less likely to be employed and are more likely to be unemployed (e.g. the difference cannot be explained by the slightly higher share of women who are studying). There is also very limited evidence to suggest that women are studying different types of qualifications than men (e.g. NC(V) vs N6). Women are clearly more likely to have achieved a qualification in the Business or Services fields but the share across qualification types is relatively consistent.

Second, there are large and significant differences in earnings between women and men who have completed a TVET qualification. Here there might have been an expectation that the gender gap would be smaller among women who qualified with an Engineering qualification but, if anything, the gap is even wider among Engineering completers. Moreover, there is descriptive evidence that men with an Engineering-related qualification earn more than other completers (although this result is not statistically significant), while average earnings for women are relatively similar across different fields of study. While these findings require further examination, one tentative conclusion is that at least part of the large gender gap in earnings among Engineering completers is due to the lower likelihood of women finding employment related to what they studied. In other words, men who completed an Engineering

qualification are more likely to have found employment in the Engineering field relative to their female counterparts. To the extent that this is the key obstacle to achieving gender parity in employment outcomes, much more research should be devoted to career trajectories and opportunities, WBL linkages and employer perceptions.

There are clearly a number of challenges in the TVET sector, yet it is encouraging that women have been enrolling in greater numbers and that they are also qualifying in fields that have been male-dominated in the past. The key challenge is to translate these gains into gender parity in employment opportunities and earnings. The potential for an increasing need for industry-related intermediate skills that are acquired through the TVET sector (Kraak, 2018), provides an opportunity to ensure that any transformation of the TVET skills system is inclusive of both women and men.

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Technical and vocational education and training (TVET) colleges and industry: Strengthening partnership-building practices

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ABSTRACT

Partnerships between technical and vocational education and training (TVET) colleges and industry play an important role in enhancing the quality of TVET education, both in South Africa and globally. Effective college–industry partnerships enable TVET colleges to stay abreast of technological advancements and changing practices, ensuring their relevance in a time of rapid technological, social and economic change. This study was guided by the research question: How can TVET college–industry partnerships be strengthened to benefit students, colleges and industry? The research aimed to identify strategies for initiating and sustaining mutually beneficial partnerships. Using Activity Theory and a responsive evaluation methodology, the study uncovered challenges in building, maintaining and expanding TVET partnerships but also highlighted successful practices and examples of emerging transformative agency among management teams.

KEYWORDS

TVET college; college–industry partnerships; Activity Theory; expansive learning; transformative agency

Introduction: What we know about TVET college–industry partnerships

Partnerships matter in the technical and vocational education and training (TVET) sector and they are key to improving the quality and outcomes of TVET provision in both South Africa (Petersen et al., 2016) and internationally (Beddie & Simon, 2017). Strong partnerships enable TVET colleges to be responsive to new technologies and new practices across occupations and fields and to maintain relevance in a time of rapid technological, social and economic change (Amey & Eddy, 2023). The primary beneficiaries of partnerships are therefore the TVET colleges themselves. Additional beneficiaries include students who are provided with enhanced learning experiences and also the employers, businesses, industries and communities linked to the partnerships. Because partnerships (with employers, industries and communities) play a role in financing, educational provision and employment opportunities in TVET, productive partnerships are commonly understood as having a multiplier effect in improving the quality of TVET, besides leading to social, economic and personal outcomes (Beddie & Simon, 2017).

There has been considerable growth in the number and variety of TVET and industry partnerships in South Africa (Petersen et al., 2016) and these have had benefits for both the TVET colleges and industry partners. Partnerships enhance graduates' employability but can also provide opportunities to generate new knowledge and capabilities which add to the competitive positioning of the stakeholders involved (Grollmann & Rauner, 2007). The aim of this study was to build knowledge about TVET college–industry partnership-building practices for the purposes of enabling colleges to initiate, sustain and expand partnerships that are mutually beneficial. The research question guiding this study is this: How can TVET college–industry partnerships be strengthened to benefit students, colleges and industry?

Review of the literature on partnership management

This review of the literature focuses on managing partnerships for productive collaboration between TVET colleges and industry. Much of the literature on partnerships is international. Therefore, it does not generally take into account the dynamics underpinning partnerships in the South African context. This applies particularly to the 'contradictory and countervailing policies' in the TVET sector (Needham, 2019:83) that have a negative impact on public–private partnerships; it also pertains to the challenges posed by the need for capacity-building and more flexible systems in the TVET sector (Keevy et al., 2021).

Partnerships are co-configurations that require continuous attention as needs change (Amey & Eddy, 2023). To establish a successful partnership, TVET colleges must assess their readiness (Duncan, 2017), clarify their vision, mission and values (Billett & Seddon, 2004), and fulfil industry partners' requirements (Abdullah, 2013). In both South African and international contexts, key indicators of college readiness for partnerships include prior industry linkages (Duncan, 2017), adequate preparation (De Paor, 2018),

and a commitment to aligning college and partner requirements (Sappa & Aprea, 2014). Incentives and government measures can be effective in initiating and sustaining partnerships (Remington, 2018; Keevy et al., 2021).

The most well-known form of college–industry partnership is the dual-education system that is employed in several European countries, most notably in Germany (Taylor, 2009). It is a system that governments in many countries, including the United States, Russia, China and South Africa, are seeking to adopt to improve the ways in which colleges and industries relate to one another (Remington, 2018; Wiemann & Fuchs, 2018). In the dual-education system, periods of theory-based classroom study are alternated with block periods of supervised work experience. Dual-education systems evolved over time and extensive negotiations ‘between employers, unions ... government, and schools over control of training ... and the value of that training in the labour market’ (Taylor, 2009:146). The success of this model has been widely acknowledged but is difficult to replicate as it is ‘dependent on employer engagement’ (Smith et al., 2011:365) and affected by economic conditions (Smith et al., 2011:374).

The successful collaboration between a college and an industry partner depends on the partner’s skills (Sappa & Aprea, 2014; De Paor, 2018; Keevy et al., 2021) and leadership abilities (Remington, 2018; Amey & Eddy, 2023). College staff are expected to play a role in orienting students to the field of practice (Watt-Malcolm & Barabach, 2010; Mesuwini, Thaba-Nkadimene & Kgomotlokoa, 2021), while industry partners provide the necessary training and supervision (Jansen & Pineda-Herrero, 2019). Support and mentoring are also essential, with dedicated support staff being made available for internships and colleagues. The assessment of student interns is a key aspect of partnerships (Yusop et al., 2023), with industry partners usually possessing the knowledge and skills to assess students’ work practices (Pillay, Watters & Hoff, 2013). Industry certification can also be beneficial to all parties (Suroto & Hung, 2018).

The selection of college and industry representatives is crucial to successful TVET college–industry collaboration (Sappa & Aprea, 2014): these representatives should have expertise and clear policies to guide roles, responsibilities and expectations. They exercise various functions, such as orientation and induction training and supervision, support and mentoring, assessment, certification (Flynn, Pillay & Watters, 2016; Mesuwini et al., 2021) and communication (Polesel et al., 2017). Both college and industry partners have roles to play in preparing students for work (Jansen & Pineda-Herrero, 2019).

Partnership-building, with attention being paid to the management and administration of the partnerships, is crucial to the success of collaborations (Huddleston & Laczik, 2018). Early planning (Mesuwini et al., 2021), staff development (Higham & Farnsworth, 2012) and sustainability (Huddleston & Laczik, 2018; Pfeifer & Backes-Gellner, 2018) are key indicators of successful partnership-building. Industry partners should be involved in planning activities, student selection, facility preparation, teacher development (Grollmann

& Rauner, 2007) and teaching materials (Pillay et al., 2013). A clear communication strategy, including TVET and industry contact persons, is essential to maintaining a successful partnership (Polesel et al., 2017). Future planning, such as identifying future partners and expanding networks, can build on existing partnerships (Marock, Hazell & Akoobhai, 2016). Monitoring and evaluation are necessary for assessing the effectiveness of partnerships (Lee, 2010) and for understanding how partnerships might be changing (Tjiptady & Yoto, 2019; Gekara et al., 2020). Extending a partnership as new areas of mutual interest emerge is usually an important issue for effective partnership development (Petersen et al., 2016; Bolli et al., 2018).

The process of setting up and managing partnerships is time-consuming, involving as it does scoping, matching students and facilitating the student–industry match (Armatas & Papadopoulos, 2013). Successful partnerships also undergo expert peer review and strive to understand the different partners’ objectives, constraints and expectations (Makgato & Moila, 2019). In the South African context, productive partnerships would need to include ‘the private sector, communities, industry and labour market experts, civil service organizations and students’ (Keevy et al., 2021:22). The contributions of the partners is to

continuously maintain a responsive and agile TVET system, keep it relevant for the economy, and to make people capable and resilient to tackle current and future challenges in their working and private lives (Keevy et al., 2021:9).

A conceptual model for managing strategic partnerships was developed from the South African and international literature in an attempt to understand the phases of partnership-building and the indicators of successful partnership maintenance, extension and evaluation.

The conceptual model for managing strategic TVET college–industry partnership-building was derived from Rogers, Kent and Lang’s (n.d.) flexible partnership model, which was contextualised for the South African TVET sector. Rogers et al’s model was designed for use with a single partner and for large coalitions for the purpose of guiding partners through the life cycle of successful collaborations.

TABLE 1: A conceptual model for strategic TVET college–industry partnership-building

	TVET college	Common activities	Potential partner
Initial self-assessment	<i>Goals/priorities</i>	<i>Common goals/priorities</i>	<i>Goals/priorities</i>
	1. Vision, mission & values (Needham, 2019; Keevy et al., 2021) 2. Readiness (Duncan, 2017) 3. Skills (De Paor, 2018) 4. Leadership (Remington, 2018)	Shared vision, mission & values Shared interests Complementary skills Joint leaderships Define common projects or tasks	1. Vision, mission & values (Abdullah, 2013) 2. Readiness (Fuchs, 2022) 3. Skills (Sappa & Aprea, 2014) 4. Leadership (Amev & Eddy, 2023)

	TVET college	Common activities	Potential partner
Representative-selection	<i>Roles & responsibilities</i>	<i>Shared contribution</i>	<i>Roles & responsibilities</i>
	5. Orientation (Mesuwini et al., 2021) 6. Training (Grollmann & Rauner, 2007) 7. Support (Higham & Farnsworth, 2012) 8. Assessment (Yusop et al., 2023) 9. Certification (Abdullah, 2013) 10. Communication (Polesel et al., 2017)	Resources Stipends Time Staff Skills Expertise Advocacy	5. Induction (Watt-Malcolm & Barabasch, 2010) 6. Training & supervision (Jansen & Pineda-Herrero, 2019) 7. Mentoring (Pillay et al., 2013) 8. Assessment (Flynn et al., 2016) 9. Certification (Suroto & Hung, 2018) 10. Communication (Polesel et al., 2017)
		<i>Define level</i>	
	National Regional Local	Collegial Advisory Formal	SETA ¹ MoA/U ² Contract
Partnership-building	<i>Activities</i>	<i>Clarify and define</i>	<i>Activities</i>
	11. Initial planning (Huddleston & Laczik, 2018) 12. Teacher continuing professional development (CPD) (Suroto & Hung, 2018) 13. Sustaining (Marock et al., 2016) 14. Future planning (Tjijptady & Yoto 2019) 15. Extending the partnership (Bolli et al., 2018)	Expectations Accountability Division of labour Communication Timeline Conflict resolution	11. Initial planning (Pfeifer & Backes-Gellner, 2018) 12. Capacity development (Pillay et al., 2013) 13. Sustaining (Suroto & Hung, 2018) 14. Future planning (Gekara et al., 2020) 15. Extending the partnership (Petersen et al., 2016)
		<i>Define outcomes</i>	
		Short-term Medium-term Long-term	
Evaluation	<i>Assess progress</i>	Maintenance/evaluation feedback loop	<i>Assess progress</i>
	16. Assess progress (Lee, 2010) 17. Assess outcomes (Makgato & Moila, 2019) 18. Reprioritise, if necessary (Armatas & Papadopoulos, 2013)		16. Assess progress (Lee, 2010) 17. Assess outcomes (Makgato & Moila, 2019) 18. Reprioritise, if necessary (Armatas & Papadopoulos, 2013)

Adapted from: Rogers, Kent & Lang (nd).

¹ Sectoral education and training authority

² Memoranda of understanding (MoU) and memoranda of agreement (MoA).

Theoretical framework for studying the management of TVET college–industry partnerships

Activity Theory was chosen as a theoretical framework for this study of TVET college–industry partnerships as it is a system-level theory of practice (Daniels et al., 2010). Third-generation

Activity Theory (Engeström, 2015) explains and provides key concepts for understanding managerial work across multiple activity systems. It was therefore useful for framing college and industry partnerships as interactions across systems involving various subjects (e.g. students, lecturers, industry-based practitioners and policymakers) who or which engage in collaborative activities to achieve desired outcomes (e.g. student development and workforce preparation). Activity Theory can help with identifying the different components of activity systems, including the division of labour, the tools or resources used, the rules and norms governing interactions, and the roles of the various stakeholders.

In this study, Activity Theory provided a deep, systemic understanding of the factors influencing TVET college–industry partnerships – and interconnections. Activity Theory was used to identify ‘contradictions’ or challenges in the system and to formulate more effective strategies for managing partnerships that could ultimately benefit all concerned. TVET college and industry partnerships often rely on various tools and artefacts (e.g. curriculum frameworks, internship programmes and technology platforms) to support collaboration and facilitate learning and skill development. Activity Theory helped to identify and analyse the ways in which different tools, documents and resources (including human resources) mediate interactions between different stakeholders and shape the dynamics of partnership activities.

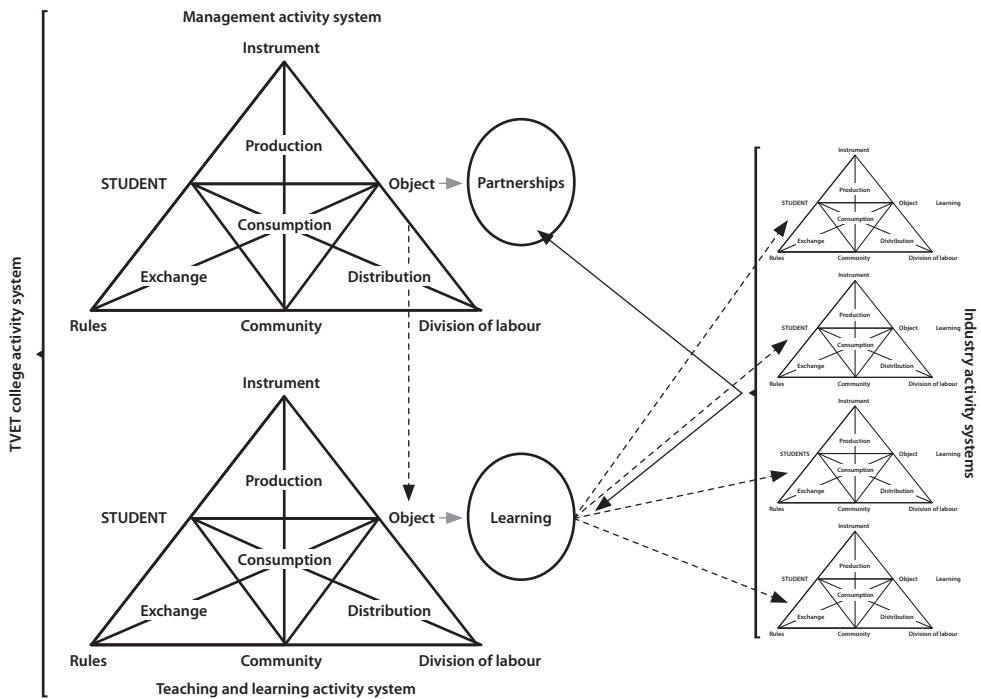


Figure 1: A TVET college–industry partnership activity system

Source: Adapted from Engeström (2009).

Activity Theory emphasises the importance of the historical and cultural context in which activities take place. The framework is therefore useful for considering how historical factors (e.g. policy decisions and economic trends) and cultural norms shape college–industry partnerships, influencing the goals, structures and outcomes. Figure 1 shows how a TVET college on the left-hand side – comprising a management activity system and a teaching and learning activity system – could interact with multiple industry partners. ‘Industry’ is used as a generic term; the potential partners would include business enterprises, banks, hotels, hospitals, clinics, communities, and so on. The industry activity systems on the right-hand side of the diagram represent potential industry partners and workplaces where students might gain work experience and might possibly find employment.

Teaching and learning activity system

In the activity system of a TVET college (bottom left of Figure 1), the subjects are students, whose purpose (or ‘object’) it is to learn. The object of the TVET teaching and learning activity system is the quality of student learning. Lecturers and industry coordinators are located among the ‘instruments’ that mediate the quality of learning. There are other mediational means, such as curricula, facilities, equipment and other resources. For all in the teaching and learning system to work successfully on this object, human and other resources are needed. The lecturers and students work within a TVET culture that has rules and hierarchies of decision-making (rules and divisions of labour, respectively). The rules and divisions of labour may enhance or inhibit students’ and staff members’ ability to work towards the improvement of student learning, particularly that regarding industry experience. The outcome flows from the activity, which, in Figure 1, is represented by dashed lines that show the subject progressing from the learning object to occupy roles as subjects in the industry activity systems. Activity Theory tells us that the outcome – in this case, the employability of students – will improve if the participants do not lose sight of the object (Engeström, 2001), which, in this case, is the provision of high-quality vocational learning. The necessary tools and resources need to be available and appropriate rules and divisions of labour should guide the system. The community of an activity system comprises those entities and individuals that are affected by the system – for instance, the potential industry partners – but who are not directly involved in the work of achieving the object.

TVET college management system

The management activity system shown at the top left in Figure 1 has the primary object of developing policies and providing a conducive working environment to enable the teaching and learning system to achieve its object of quality student learning. This is represented by the dotted line linking the management and the teaching and learning objects. The management activity system, in this case, also has an object of partnership-building. The managers in the TVET college who are responsible for the administration and management of TVET–industry partnerships are the subjects of the activity system. These managers might include a deputy principal and a director of partnerships and/or placement and learnership officers.

For the subjects to succeed in executing the mandates, instruments, which might include human and material resources, would be required. The object of the activity system is building TVET college–industry partnerships and the desired outcome is partnerships that are mutually beneficial and sustainable. The division of labour involves dividing roles and responsibilities among those deputy principals who are responsible for partnerships, directors, placement and learnership officers, and workplace mentors. The community comprises both potential industry partners and other stakeholders, while the rules include DHET (Department of Higher Education and Training) policies, TVET college policies and legislation relevant to skills development in South Africa.

Many TVET colleges are undergoing significant transformation under new policy directives (Buthelezi, 2018) and enhancement initiatives (Sithole, 2019) and they are generally becoming more responsive to industry needs (Marock et al., 2016). Many of these initiatives require industry partners to:

- Support colleges in improving their infrastructure to include industry-equivalent training facilities (Lee, 2010);
- Facilitate teacher sabbaticals in industry (Duncan, 2017);
- Offer industry training (Abdullah, 2013);
- Provide industry certification (Suroto & Hung, 2018);
- Accommodate student placements (Sappa & Aprea, 2014);
- Provide industry representatives to co-assess practical subjects (Pillay et al., 2013);
- Facilitate cultural change (Flynn, Pillay & Watters, 2016); and
- Develop leadership in individuals (Badenhorst & Radile, 2018).

This partnership-focused activity system was the focus of this study.

Contradictions

Figure 1 represents the ways in which the TVET college and industry activity systems could interact. In any activity system – and, more particularly, when more than one activity system is involved in attaining a shared (or partly shared) object – there are likely to be contradictions and tensions that would need to be resolved in order to align the two systems (Taylor, 2009). This would be the case in partnership-building and a key aspect of partnership-building work should involve negotiations between the partners that investigate the contested terrain (Watt-Malcolm & Taylor, 2007). There are essentially three types of contradictions: primary, secondary and quaternary:

- Primary contradictions are those that arise in the elements of the activity system. In the case of partnerships, a primary contradiction may arise in subjects if there is insufficient capacity or willingness among the subjects to maintain or sustain a partnership.
- Secondary contradictions are often caused when instruments are inappropriate to, or insufficient for, attaining the object. In the TVET college activity system, there

could be insufficient resources or the absence of a budget for partnership-building activities. Tertiary contradictions could arise between a TVET management activity system and what Engeström (2001) calls ‘its historically evolving trajectory’. This could involve conflicts between the current practices or norms of the activity system and its future developmental path as set out in policy documents. Overcoming this contradiction is challenging as it requires the subjects to embrace new approaches and technologies for the future.

- Quaternary contradictions often arise between multiple activity systems, such as when there are conflicts between the goals, norms or practices of activity systems that are interconnected or interdependent. For activity theorists, such misalignments, challenges and other disturbances ‘hold within them the possibility of the collective propelling themselves forward to search for new ways of doing and achieving what is not yet there’ (Engeström, 2018:14).

Partnerships are always dynamic processes that evolve over time in response to changing external conditions and internal dynamics. Activity Theory offers insights into the ways in which partnerships develop, adapt and transform over time. These insights highlight the role of learning, innovation and collective problem-solving in driving change. Activity Theory therefore provides a valuable lens for the present study.

Boundary-crossing

Whereas Activity Theory predicts that every activity system will include contradictions, it also emphasises the importance of mediation and of resolving contradictions through collaborative and transformative processes. Boundary-crossing is one way in which contradictions can be resolved. Engeström (2009:313) explains it this way: ‘Human beings are involved in multiple activities and have to move between them.’ Boundary-crossing also occurs between ‘collective activity systems and organisations’ (Engeström, 2009:314); it could therefore be viewed as the interactions between at least two distinct activity systems and it could occur in those moments when different activity systems come into contact and influence each other (Engeström, 2015). This could involve individuals, tools or ideas moving between the systems.

Typically, boundary-crossing is needed when one activity system seeks resources or expertise from another activity system. Finding out about the different practices or tools of different activity systems could spark new ideas and lead to improvement and innovation. Consequently, when two or more activity systems collaborate towards a shared goal, as in partnership-building, boundary-crossing is likely to occur (Flynn et al., 2016) and it is therefore likely to play a role in developing and transforming activity systems.

Knotworking

Knotworking is another strategy that could be employed to resolve contradictions within an activity system (Engeström, 2018). It involves engaging in collaborative problem-solving in

order to deal with contradictions that hinder an activity system's effectiveness. Knotworking – a metaphor that brings together the idea of something 'not working' and an image of the interwoven, tangled nature of a knot – brings diverse perspectives and expertise to bear on a contradiction in an activity system. It can, for instance, help the subjects of activity systems to overcome any limitations in the current system. In the case of a primary contradiction, such as a lack of capacity in a subject group, knotworking could involve collaboration with others who possess the necessary expertise; and when conflicting rules create a barrier, knotwork might involve communication and negotiation to find a workable solution.

In knotwork, diverse subjects, tools or even different activity systems are interconnected to achieve the object. It has been pointed out that this collaborative approach is especially useful in situations that require knowledge to be sourced and applied from various domains (Kerosuo, Mäki & Korpela, 2015). Knotwork is therefore a dynamic and evolving process, and successful knotwork usually requires support from outside the activity system to recognise and facilitate the development of these practices. The interconnected and dynamic nature of knotworking allows for speedier adaptation in a context that is undergoing significant change (Engeström, 2009).

Expansive learning

The concept of expansive learning describes the processes of transformative change and development within activity systems (Engeström, 2015). It is distinguished from other forms of learning by its focus on learning in diverse contexts (which are often very different from those of formal schools or universities) and involving diverse groups of people (Engeström, 2015). Expansive learning could be understood as being a creative form of learning in which diverse subjects bring their different perspectives, experiences and knowledge to an object, which enables innovation. It involves 'essentially learning something that does not yet exist' (Engeström, 2015).

The metaphor of expansion depicts the multidirectional movement of the subjects who are engaged in constructing and implementing a new, broader and more complex object for their activity. This type of learning can lead to transformation both 'at the level of individual actions and at the level of the collective activity and its broader context' (Sannino, Engeström & Lemos, 2016:603). It occurs when

individuals and groups confront and resolve contradictions, leading to the restructuring of activity systems and the creation of new forms of practice and knowledge, or the exchange of resources, ideas, and practices, potentially leading to innovation, learning, and improved outcomes (Sannino, et al., 2016).

Transformative agency

Engeström (2015) explains that engagement in expansive learning (including boundary-crossing and knotworking) can foster transformative agency. This involves individuals

and groups transforming their work practices and adapting to changing circumstances through collaborative learning. Engeström (2015) considers expansive learning to be core to transformative agency in wider communities and work settings. Transformative agency is thus a quality of expansive learning: learning expansively requires individuals or groups to break away from a given frame of action and to take the initiative to transform it. The new concepts and practices generated in an expansive learning process ‘carry future-oriented visions loaded with initiative and commitment by the subjects’ (Sannino et al., 2016:603).

Research methodology: Responsive evaluation

Evaluation research is the approach that was selected for the present study as it can both build knowledge and contribute to the improvement of practice in a field (Stake, 2012). In the TVET context, the use of evaluation research findings can support meaningful change towards improved outcomes for colleges, educators and students. The intention behind the use of evaluation research in this study was both to build knowledge about the management of partnerships and to provide a guiding framework that educational managers could use to improve practices.

There are many different approaches to, and types of, evaluation research. It can play a formative role, identifying areas for improvement, or a summative role (Savin-Baden and Major, 2023), judging the effectiveness of a practice or an intervention. However, the approach selected for the present study was ‘responsive evaluation’ (Stake, 2012), an approach that pays particular attention to ‘the needs of those involved in the evaluation’ (Savin-Baden and Major, 2023:277). A responsive evaluation design can include both formative and summative elements. In this study, because partnerships are ongoing and changing, a formative approach was considered appropriate to improving the way TVET college–industry partnerships are managed, taking into account the caveat that there are no simple answers to the typical formative evaluative questions of: What is working? What is not working? In which contexts? With which groups? And how can it be improved?

Defining the merits of existing practices, separating out the parts played by the various factors – such as the geographical location of a college, the availability of industry partners or the needs of the participants – while appraising their value and making recommendations for improvements are complex undertakings in evaluation research, and particularly so in responsive evaluation (Stake, 2012). There are always confounding and complicating effects in each stage of implementing an evaluation. Yet, despite the many complexities in the formative evaluation of management practices, there is a strong need to evaluate both the existing practices and the actual or potential outcomes of improving both new and existing practices and interventions.

Data collection

The data-collection method used for this study was ‘survey interviewing’ (Singleton & Straits, 2012; Fowler, 2014:110), which, as its name suggests, is a hybrid approach that combines a survey or questionnaire with individual or focus-group interviews. The questionnaire typically

contains predetermined questions, which could be both fixed-response options (such as multiple-choice, yes/no, or rating scales) and open-ended questions that enable participants to express opinions or to provide detailed responses (Singleton & Straits, 2012). In this case, the 70 participants were drawn from the management teams at 21 different public colleges. Survey interviewing produces richer data than standard questionnaires for several reasons: it is facilitated by interviewers; questions seeking clarification can be dealt with directly; the participants can be prompted; reflection can be encouraged (Singleton & Straits, 2012:81), while consistent data collection across sites is also more likely (Fowler, 2014:120). Structured interviewing is widely used in research, surveys, market research, public-health studies and the social sciences; it is also useful for collecting quantitative data and for studies ‘where comparability is important’ (Fowler, 2014:115).

Sampling

Purposive sampling was applied in which partnership management teams (deputy principals of partnering institutions, directors and industry liaison officers or placement officers) across the 50 public TVET colleges in South Africa were invited to participate in the partnership survey. The TVET division of DHET assisted with the arrangements that had to be made for the survey focus-group interviews. While not all of the invitees took part in the survey interviews, the actual participants are typical of the partnership management teams that have been established in most public TVET colleges.

Table 2: Partnership management teams

	Province/region of TVET college	Management team	Number of team members	Team leader
1	Eastern Cape	Team 1	4	Placement Officer
2	Eastern Cape	Team 2	4	Deputy Principal: Partnerships
3	Eastern Cape	Team 3	4	Learnership Officer
4	Eastern Cape	Team 4	4	Placement Officer
5	Eastern Cape	Team 5	4	Placement Officer
6	Eastern Cape	Team 7	4	Deputy Principal: Partnerships
7	Eastern Cape	Team 8	3	Deputy Principal: Partnerships
8	Eastern Cape	Team 20	3	Placement Officer
9	Free State	Team 10	3	Placement Officer
10	Free State	Team 12	3	Placement Officer
11	Free State	Team 17	3	Learnership Officer
12	Free State	Team 18	3	Deputy Principal: Partnerships
13	Gauteng	Team 14	3	Deputy Principal: Partnerships
14	Gauteng	Team 16	3	College Principal
15.	KwaZulu-Natal	Team 13	3	Learnership Officer

	Province/region of TVET college	Management team	Number of team members	Team leader
16	Limpopo	Team 6	4	College Principal
17	Limpopo	Team 15	3	Placement Officer
18	Mpumalanga	Team 21	3	College Principal
19	Northern Cape	Team 19	3	Placement Officer
20	Western Cape	Team 9	3	Deputy Principal: Partnerships
21	Western Cape	Team 11	3	College Principal

This research was commissioned by the TVET division of DHET as a subproject of a Five-Year TVET Research Programme that focuses on the evaluation of public TVET colleges in South Africa.

Ethical considerations

Ethical clearance for this sub-study was received from a university research ethics committee. All the necessary site permissions were obtained through the TVET Directorate. The survey interview sessions were attended voluntarily and informed consent was provided. The participants were informed that they had the right to terminate their participation in the study at any time without any negative consequences. The key ethical dimensions of the study were informed consent, confidentiality, the protection of personal information, data storage and transparency to enable the transfer of relevant knowledge to all those who could benefit from the findings of this study on the management and administration of college–industry partnerships.

Data analysis

There were three levels of data analysis: the first level identified elements of the activity system evident in the data; the second level explained the contradictions in the activity system, and the third level focused on indicators of boundary-crossing, knotworking, expansive learning and the emergence of transformative agency.

Findings: The TVET partnership management activity system

The findings from the survey interviews are presented below, through the lens of Activity Theory.

Subjects: Dedicated partnership management teams

The subjects were management teams comprising college principals, deputy principals in charge of partnerships, and learnership and placement officers. Each partnership had a project team, sometimes called an ‘implementation team’ (Team 7) that was ‘responsible for the partnership’ (Team 16). The teams had varying levels of experience: Team 3 had ‘been

working with TVET–industry partnerships for about 12 years whereas Team 21 had been working with partners for a year and only ‘10% of their key performance [was] weighted towards this objective’ (Team 21).

Object: Partnerships to serve a wide range of purposes

All of the teams were either seeking or working on partnerships, for many different reasons. Many partnerships were sought for the purpose of providing work-based learning for college students:

Some of the partnerships [falling] under my unit deal with placement of learners for workplace-based experience or for experiential learning, internships; others deal with funding of the placement and also ... psychosocial support (Team 4).

As Team 20 explained, placing students in workplaces required funding, so partnerships also had to be set up for ‘funding purposes – [bursaries], WIL, learnerships, institutional development, etc.’. Some partnerships had as their purpose institutional development in which an industry partner provided a ‘workshop upgrade’ (Team 4) or ‘infrastructural development’ (Team 7). Fewer partnerships were intended for lecturer development – in fact, Team 5 was ‘not aware of any’ partnerships created for this purpose. There were, however, teams working with SETAs and industry partners for the purpose of obtaining industry experience for lecturers (Team 18) and, in one case, providing ‘international exchange’ experiences (Team 7).

Tools for finding and sustaining partnerships

A variety of tools were implemented when seeking and consolidating partnerships. The initiating of partnerships usually happened informally

[b]y contacting industry directly ... using electronic communication, walk-ins; and we also ... held a business breakfast event in which we invited potential partners and current stakeholders (as explained by Team 5).

Team 6 similarly described a ‘face-to-face approach and presentation, breakfast meetings’.

To consolidate a partnership, teams used various means such as: (a) questionnaires to assess the relevance of the partnership; (b) an expression-of-interest letter to the partner; (c) a partnership agreement; and (d) a register of all the partnerships concluded. One team member elaborated that ‘with each MoU or agreement, there are clear deliverables with specified time frames for each deliverable’ (Team 20). Standard partnership contracts had a starting date and an end date, with quarterly reports being used to monitor the progress of partnerships against key deliverables.

Division of labour: Who is responsible for what?

All of the teams agreed that clarification of each partner's role and responsibilities was crucial to the success of a partnership, and that partnerships were functional when there was clarity about these elements:

The roles and responsibilities must be clearly defined in the founding agreement, and at the conclusion of a project, meetings are convened (Team 8).

There might be some flexibility regarding the division of labour, as explained below:

The college is responsible for payment of the stipends while the partners are responsible for the hosting and training of learners. The industry partner provides students with relevant workplace training and development; and, sometimes, the industry partner provides funding for necessary training interventions (Team 3).

Whatever arrangements are made, 'the purpose of the relationship is working towards shared goals through a division of labour that all have agreed upon' (Team 19).

Community of potential partners

The community of potential and actual industry partners included those from fields such as insurance, banking, telecommunications, the retail trade, agriculture, engineering, the automotive trade, tourism and hospitality, human resources (HR), construction, non-governmental organisations (NGOs) and non-profit organisations (NPOs), as well as universities, national and regional government departments and local municipalities. A wide range of sectoral education and training authorities (SETAs) were named: AGRISETA, BANKSETA, CATHSSETA, CETA, CHIETA, ETDPSETA, FASSET, FOODBEV, INSETA, LGSETA, MERSETA, MICTSETA, PSETA, SERVICESETA and WRSETA. The SETAs mainly provided the funding and stipends for students engaged in work-based learning, but they also supported other partnership-related activities.

Rules: Partnership governance

Partnerships were regulated in accordance with several official 'rules' that emanated both from the DHET and from the partners, as Team 3 explained in detail:

TVET institutions are mandated, amongst other things, to provide training interventions in ... the form of learnerships, apprenticeships, internships, and skills programmes. The aforesaid interventions necessitate that the TVET institutions forge partnerships with ... industry. Appointments were made with key personnel of ... industry to discuss the need for the partnerships, and a

memorandum of agreement/memorandum of understanding and a service-level agreement were signed depending on the type of partnership.

Outcome: 'Mutual benefits for both entities'

Most teams commented positively on the outcomes of partnership-building, which, in some cases, had been 'very effective but with a few challenges' (Team 13). Some partnerships had existed for many years. Team 10, for example, had 'effective industry partnerships, with some partnerships which had been established in 2013'. For some teams, effective partnerships were those that were 'still going' (Team 15) or that provided 'student and lecturer placement' (Team 6). An example of a partnership that had progressed 'quite excellently' enabled 'some college learners [to] receive employment' (Team 5). In effective partnerships, as one team member commented, there were 'mutual benefits for both entities' (Team 14). Therefore, to varying extents, the college–industry partnerships had worked. As one team member said: 'On a scale of 10 in terms of effectiveness I will give it an 8' (Team 12).

Discussion: From challenges to emerging transformative agency

Although attitudes were largely positive towards partnerships, the teams had also experienced challenges, which are described below in terms of contradictions in the partnership-building activity system.

Contradictions: Identifying the challenges

Primary contradictions in the TVET activity system occurred in the form of inadequate resources for sustainable partnerships. As might be expected, secondary contradictions arose from the severe shortage of resources and created conflict as a result of the inability of the available resources to support the object of partnership-building. For example, there was inadequate 'funding for WIL and work placement opportunities for students requiring WIL' (Team 19); or there were 'delays with SETA payment of stipends and limited funds' (Team 5); or simply a lack of 'reliable funding' (Team 13) more generally. One team explained that a successful partnership had placed students 'every year' but could only 'keep going ... when the college received funding' (Team 15). Similar views were expressed by other teams, such as the comment that partnerships were 'very effective when hosting students [but] stipends are the issue' (Team 10). The lack of resources had an impact on almost all the elements of the activity system. For example, the partners were 'hesitant to take interns if there [are] no stipends available for students. This also causes transport challenges' (Team 10).

Primary contradictions are contradictions that arise within the elements of the activity system. With reference to partnerships, a primary contradiction may arise within subjects if there is insufficient capacity or willingness amongst the subjects to maintain or sustain a partnership. Secondary contradictions are often caused when instruments are not appropriate or are insufficient, for the attainment of the object. In the TVET college activity system, there

could be insufficient resources or the absence of a budget for partnership-building activities. Tertiary contradictions could arise between a TVET management activity system and what Engeström (2001) calls 'its historically evolving trajectory'. This could involve conflicts between the current practices or norms of the activity system and its future developmental path as set out in policy documents. Overcoming this contradiction is challenging, as it requires subjects to embrace new approaches and technologies for the future. Quaternary contradictions often arise between multiple activity systems, such as when there are conflicts between the goals, norms or practices of activity systems that are interconnected or interdependent. For activity theorists such misalignments, challenges and other disturbances 'hold within them the possibility of the collective propelling themselves forward to search for new ways of doing and achieving what is not yet there' (Engeström, 2018:14).

Tertiary contradictions typically occur when an activity system is expected to incorporate practices and technologies that arise from other activity systems, such as using the 'German Model' (Team 18) in a South African TVET context or introducing the idea of 'students becoming entrepreneurs' into a system that had previously focused on 'employment opportunities' (Team 18). Tertiary contradictions are challenging because they usually involve major changes to the system. One team member felt that 'industries may initiate projects with initial outcomes set to be too high and not considering successive plans' (Team 13). Such tertiary contradictions are common when subjects collaborate across activity systems that have different expectations or use different technologies.

Also typical in collaborations are quaternary contradictions, such as the lack of cooperation between (potential) partners, which was experienced by teams as 'some industries not being open to the TVET college sector' (Team 18) or 'companies not responding positively to requests, hence the limited number' (Team 8). One team stated: 'We would love to partner with the nearby mines, but mines are reluctant, citing issues of security, etc.' (Team 6).

While many industries were able to partner with colleges and provided 'good support' for the 'placement of learners for work-based experience and to run projects together', others were found to be 'very difficult' or not supportive (Team 17). One team member described such conflict as 'a lack of communication with some partners and unwillingness to work with colleges' (Team 18). Some of the quaternary contradictions could be ascribed to factors beyond the subjects' control, such as 'companies closing because of COVID-19 and lack of projects' (Team 6). In the South African context, the historical location of some colleges disadvantaged them in their attempts at partnership-building, such as a college being 'in a semi-urban area, which means the majority of the host employers are not found within this area' (Team 2) or a college 'is situated in a semi-rural area where there is a lack of well-capacitated industry partners and, as a result, industry partners are likely not to cover all areas that must be covered in the training' (Team 4). Some quaternary contradictions could be caused by conflicting values or priorities, which is suggested by subjects' descriptions of industry partners as 'difficult' (Team 17) or not 'open' (Team 18), or there being 'poor participation of mentors' (Team 15). One team expressed the view that a conflict of values

existed between the college and industry, claiming that ‘many industries only participate when clear financial gain can be promoted’ (Team 13).

Boundary-crossing: ‘Dovetailing with partners’

Boundary-crossing is an indicator of problem-solving when multiple activity systems are involved in attaining an object. In this case, the differences between the interests and values of colleges and industry have to do with their different objects. The industry partners were focused on production and services, while the colleges were focused on students’ education. This is essentially a theory–practice divide which both partners need to understand before it can be bridged. For example, the ‘security’ issue expressed by the mining company could be negotiated if each partner found out more about the other’s needs and concerns. Visits to industry partners might initiate boundary-crossing activities to resolve some of these challenges. Teams explained that ‘the college provides the industry partner with students to get exposure to how the industry works for a particular period’ (Team 5). Another team reflected that ‘the partnerships provide services that the college cannot offer’ (Team 7), such as the practical component of the qualification; and, in some cases, ‘they sponsor college activities such as graduation and the issuing of performance awards to the best graduating top ten Financial Management students as an example’ (Team 5). Raising awareness of the value of partnerships could help partners to collaborate at a deeper level. One team used the metaphor of ‘dovetailing with partners’ (Team 5), which perfectly expresses the spirit of boundary-crossing: each partner needs to intrude somewhat into the territory of the other to strengthen their connection, as in a dovetail joint.

Knotworking: ‘Nourishing’ the partnership

Knotworking occurred when the management teams worked together to overcome any barriers to partnership-building. One strategy was to ‘share information’ (Team 11); as a participant explained: ‘Once the partnership is established, then we constantly keep communicating and nourishing the partnership and also deal with issues as and when they arise’ (Team 12).

Expansive learning: A ‘bigger scope of partnership’

A key indicator of expansive learning is when subjects begin to think beyond the constraints of their own activity system. So, if local placements for TVET lecturers were not available, then one might provide ‘international experiences’ instead (Team 7). Or when student placements were not available, one might request industry partners to engage in ‘guest lecturing’ (Team 6). Those engaged in expansive learning seemed to see new vistas opening, as expressed by Team 20: ‘Fine for now, but there is ... room for improvement and development to a bigger scope of partnership.’ Another team expressed the need for ‘many more partnerships to make the colleges more effective’ (Team 17). Yet another team member wanted to ‘expand’ the partnerships to ‘[help] the institution to get more industry partners and placement of students to the industry for workplace exposure’ (Team 3). Another envisaged an ‘extension of the partnership scope

specifically for the [rural college's] provision of resources such as equipment and buildings' (Team 20). Expansive learning entails engaging in transformative practice.

Emerging transformative agency: 'We can still do more'

Transformative agency is the desired outcome of collective problem-solving through expansive learning. For example, many teams expressed the view that TVET curricula do 'not meet industry needs' (Team 16), but only some participants took action to overcome this problem. One manager asked industry partners to 'review the college curriculum to respond to the needs of the market' (Team 2). Another included the 'DHET and industry engagement when curricula are developed' (Team 16), while another requested the 'involvement of business and industry in curriculum development' (Team 21). These are examples of emerging transformative agency in which managers recognise their ability to innovate and improve for mutual benefit. This is a start, but as one team put it, 'yes, but we can do more' (Team 19).

Conclusion: Towards enhanced partnership-building

The aim of the present study was to provide an empirical basis for initiating and sustaining partnerships that are mutually beneficial for colleges and industries. Using the lens of Activity Theory and the responsive evaluation methodology, the study responded to the research question: How can TVET college–industry partnerships be strengthened to benefit students, colleges and industry? The TVET managers and teams involved in partnership-building were surveyed and interviewed about their practices. In the study, the concepts provided by Activity Theory, such as 'activity system', 'contradictions', 'boundary-crossing', 'knotworking' and 'expansive learning' (Engeström, 2009; Engeström, 2015) were used to analyse the practices described by the teams and to understand their potential for effective partnership-building. By dealing with the research question in this way, the study has contributed to knowledge in the field of TVET college–industry partnership management and administration. It has also contributed to partnership-building practice. The study has shown how management teams could effectively engage in collaborative processes of expansive learning through boundary-crossing and knotworking, even without formally understanding these terms or processes. These intuitive processes enabled partnership management teams, in many cases, to improve the experiences of students, colleges, colleagues and industry partners. In some cases, there were signs of emerging transformative agency as managers set about innovating and changing existing practices. We can only imagine the impact on colleges if more management teams were to engage in such potentially transformative practices.

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What does 'quality teaching and learning' mean in TVET contexts?

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ABSTRACT

Over the years, technical and vocational education and training (TVET) colleges in South Africa have been subject to criticism for their low pass rates, raising concerns about the quality of vocational education. In contrast to this, successes at certain colleges, as documented in official reports, are less frequently acknowledged. Our research shifted the focus to these successes in order to identify the factors that are driving positive student outcomes and how they align with the understanding of quality TVET teaching and learning. A meta-review of the scholarly literature identified six thematic areas critical to quality enhancement in vocational education as being: curriculum and course content, teaching and assessment strategies, learning environment, student support systems, lecturer attributes, and leadership. Guided by these themes, we conducted research across five South African provinces using questionnaires, interviews and focus groups to gather data from TVET college students and lecturers. Key findings on successful outcomes of colleges in the study highlighted the importance of student-centred pedagogies, the integration of technology in curricula, the development of practical skills, and collaboration with industry in order to locate students' learning in practical vocational contexts. The research lays a foundation for reflecting on continuous quality improvement using empirically derived indicators that can be further developed in the South African college sector.

KEYWORDS

Technical and vocational education and training (TVET) college; student performance; quality teaching and learning; vocational education and training (VET)

Understanding quality in the provision of technical and vocational education and training (TVET)

Internationally, there has been an ongoing research focus on the quality of TVET and what can be done to improve such quality (Wheelahan & Moodie, 2011; Wolf, 2011; CAVTL, 2013; UNESCO, 2015; Misko, Guthrie & Waters, 2021). While the need to improve the quality of the TVET system has been raised extensively in various countries, Wheelahan (2010) points out, *inter alia*, that evaluating quality is a complex process due to the variety of factors that contribute to successful teaching outcomes.

It is evident from the literature that quality in TVET encompasses a range of understandings and conceptualisations that the following observation of Mitchell et al. (2006) illustrates pertinently:

For some stakeholders, quality is concerned with meeting high standards, for others it means achieving excellence, for some it means the same as gaining benefits, and for others it means doing the best one can, under given circumstances. Some [vocational education and training (VET)] stakeholders talk about quality inputs and processes and outputs, while others focus on quality outcomes. Some stakeholders focus on managing quality systems and measuring quality indicators, while others focus on creating cultures to stimulate continuous improvement. However, VET stakeholders generally accept that to achieve high-quality outcomes requires adequate inputs and multiple strategies: there is no single solution and there is no quick fix (2006:34).

More generally, quality in education can be defined as 'the degree to which successful outcomes are achieved against a set of desired benchmarks' (Misko et al., 2021:14). In line with this understanding, in South Africa one of the main policy objectives of the White Paper on Post-School Education and Training (WPPSET) is an improved quality of TVET and performance results (DHET, 2013). TVET college students, in particular, have to 'be prepared, to cope with change; to grow their knowledge, skill, and creativity; and to contribute to developing new products and processes' (McGrath et al., 2019:vii).

DHET, which exercises oversight in respect of the public TVET colleges, releases college performance statistics for public scrutiny annually. Whereas, overall, poor performance is usually the impetus for negative criticism of colleges, there are also institutions that consistently achieve high pass and throughput rates, but these do not garner an equivalent amount of positive attention. The throughput rate is defined as the rate at which a student cohort successfully completes a qualification within the stipulated time frame for that qualification. The public TVET colleges offer two state-funded qualification types: the full-time, three-year National Certificate (Vocational) (NC(V)) comprising three levels of one year each – NCV Level 2, Level 3 and Level 4 – and then trimester and semester part-qualifications of the National Accredited Technical Education Diploma (NATED). Each of these qualification streams or fields consists of a wide range of programmes in various vocational and occupational areas; for instance, in the fields of Business Studies, Engineering, Services, and so on. A 'pass' as determined by DHET at

the time of the research was 40% for all subjects of the Report 191/NATED programmes, and a student had to obtain at least 30% to qualify for a supplementary examination. In the NC(V) programmes, students have to pass all seven subjects at a level to complete the level, but can progress to the next level while ‘carrying’ two failed subjects that would have to be passed before the full qualification at the exit level (Level 4) can be attained. The pass requirements for the NC(V) subjects are these: 50% in each of four vocational subjects; 40% in Life Orientation and English First Additional Language, and 30% in Mathematics or Mathematical Literacy.

In the light of sustained public and media focus on poor performance in TVET colleges, our research was deliberately focused on successful achievements in which high pass rates were seen as a proxy for quality provision leading to success. We applied both inductive and deductive approaches in an attempt to sift out the institutional practices that lead to successful student outcomes, as suggested by scholarship; and to ascertain what college students and lecturers in our study believe contributed to their success.

Meta-review of scholarship on quality in VET

In order to assist our study and guide our data-gathering, we conducted a meta-review of the scholarly literature on quality teaching and learning in vocational education and training (VET). The meta-review of the extant literature produced six thematic areas that were shown to have promoted TVET success:

- Curriculum and course content (see Barnett, 2006; Hénard & Roseveare, 2012; DiBenedetto, 2019; Douse & Uys, 2019; Evans, 2019);
- Teaching and assessment strategies (see Deutscher & Winther, 2019; Dhillon, 2019; Orr, 2019; Panadero, Garcia & Fraile, 2019; Sarıkaya Erdem & Yıldırım, 2019; Sokwane & Adekanmbi, 2019);
- Learners and the learning environment (see Bill, Ellen & Guy, 2012; CAVTL, 2013; Said, 2018);
- Student support systems (Field, Musset & Álvarez-Galván, 2014; Fryer, 2014; Maimane, 2016; Papier & McBride, 2019; Zepke, 2019);
- Lecturer professionalisation and attributes (see Gamble, 2013; Wedekind, 2016; Papier, 2017; Smith & Yasukawa, 2017; Guthrie & Harris, 2019); and
- Leadership (see Crossman & Cameron, 2014; Hoekstra & Newton, 2017; Greatbatch & Tate, 2018).

Owing to constraints regarding the length of this article, the full literature review cannot be reproduced here.¹ Instead, the six areas of quality and the constituent elements associated with quality and successful VET are summarised in the table below.

1 For the full literature review, see Papier, J, Mawoyo, M & Tennison, C. 2024. Quality of teaching and learning at TVET Colleges. Report produced under the Five-Year Research Programme on TVET Colleges, commissioned by DHET and funded by the National Skills Fund (NSF).

TABLE 1: The six areas of quality considered, and their constituent elements

1. Curriculum and course content	<ul style="list-style-type: none"> • Use of technology • Stay abreast with technological advances in curricula • Focus on skills for work • Provide 21st-century skills • Remain student-centred, adapting to the needs and experiences of students • Collaborate with employers and industry to develop innovative pedagogies and symbiosis between college and industry
2. Teaching and assessment strategies	<ul style="list-style-type: none"> • Tolerate student mistakes in learning • Utilise student knowledge and experience • Provide range of assessment and feedback • Provide a blend of theoretical and applied methods • Ensure authentic assessments • Maintain transformative teaching and learning • Encourage self-directed learning • Do group work, research • Offer problem-based learning (PBL) • Ask good questions • Make effective use of information and communication technology (ICT)
3. Students and learning environments	<ul style="list-style-type: none"> • Must be well-adapted • Cultivate a positive classroom climate • Collaborate and contextualise • Provide a real or simulated workplace • Digitise pedagogy • Create a powerful learning environment (PLE) • Ensure complex learning environments
4. Student support services	<ul style="list-style-type: none"> • Support well-being • Offer financial, psychosocial and academic support at pre-entry and on-course levels, and at exit level • Approach student support holistically • Provide quality career guidance
5. Lecturer competencies	<ul style="list-style-type: none"> • Maintain high levels of empathy • Encourage continuous professional development • Provide good initial training vocationally and pedagogically • Encourage capabilities in teaching, learning and assessment • Combine vocational pedagogic knowledge and occupational expertise
6. College leadership	<ul style="list-style-type: none"> • Ensure effective, efficient, dedicated and motivated leadership • Ensure flexible leadership responds to complex and changing context

These six areas of quality delivery served as a guide to the design of our data-gathering instruments, according to which the quality of teaching and learning in TVET colleges could be described and evaluated. Taken together, these tentative indicators covered aspects of the vocational educational experience which ought to receive attention in order to deliver high-quality education that is relevant, effective and supportive of students' needs. The range of these elements also suggested that quality TVET teaching and learning does not neatly fit a single definition but is a complex combination of elements and inputs.

Methodology

The research employed both inductive and deductive methods in an attempt to respond to the research questions posed. An iterative process between the literature review and qualitative fieldwork was necessary because the evaluative framework derived from the literature informed the fieldwork but was not considered to be a blueprint, since the qualitative data could also possibly expand or extend the range of elements that had been distilled from the literature. Notwithstanding this, the six thematic areas guided our data-collection survey that included both open- and close-ended questions. Additional qualitative fieldwork through focus-group discussions and interviews offered deeper insights into the contextual realities of colleges regarding the elements of the framework that we had constructed from the literature review.

Sampling strategy

We used as a measure of quality the performance success rates published in the official annual statistics of DHET over four consecutive years (2016–2019) in respect of the prescribed national TVET qualifications. These enabled us to identify those colleges with both high enrolments and high performance for this study.

Using the officially published data, the completion rates of colleges in the fields of Engineering (N1–N6), Business Studies N6 and the NC(V) Level 4 programmes in each of the nine provinces were compared with the national completion rates for these qualifications over the four-year period. In addition, based on the performance of individual provincial colleges, an average performance rate was assigned in order to obtain an overall ranking of provincial performance regarding the specified qualifications. Using the top five (out of nine) provinces, 14 (of the 50) public TVET colleges were identified for participation in the research, which also attempted to achieve a spread of urban and peri-urban and/or rural colleges as far as possible. Ethical clearance was obtained from the university under whose auspices the study was being conducted and permission for the participation of TVET colleges was granted by the DHET; in addition, college heads were contacted to request their agreement to participate. Since colleges across provinces would have different high-enrolment programmes depending on their specialisations within qualification streams, high-achieving colleges were asked to self-select the specific offerings that met our specified criteria of being both high enrolment and high performing at their colleges. Once the specific ‘successful’ programmes had been identified (i.e. those whose completion rates were close to or above the national mean annually), a random 20% sample of the students in those high-achieving programmes and their lecturers were sent information and request letters, which the colleges were asked to distribute. The support of DHET was also solicited to encourage the colleges to participate. It was hoped that, since the research was an opportunity for colleges to showcase positive achievement, this would be a motivating factor for college principals to participate.

Data-collection instruments and process

We applied the six areas of quality teaching and learning as indicators iteratively with a view to developing an appropriate set of indicators for the local context. The tentative indicators drove the development of a survey questionnaire comprising mostly close-ended questions to elicit from college students and lecturers their teaching and learning experiences and also their perspectives on what enabled their success. In addition, focus-group discussions with college lecturers gathered information on pedagogies and strategies that the lecturers believed enhanced teaching and learning for their students and improved student outcomes. Focus-group discussions with groups of students gathered in-depth information on the teaching and learning practices at their colleges and what they perceived to have contributed most to their success.

Two survey instruments were developed, one each for lecturers and students. Paper-based surveys were distributed to the 14 colleges, of which eight ultimately returned completed data. Altogether, 2 427 responses were collected from students, constituting a 38% response rate based on the 6 458 student questionnaires despatched; and 272 questionnaires were collected from lecturers, representing a 53% response rate from the 509 lecturer questionnaires distributed to colleges.² A total of 34 campuses across the eight colleges participated in the research.

The eight colleges participated in the survey and an additional two participated in the qualitative research. The additional two colleges had not been able to distribute the survey questionnaires due to internal difficulties at the time of that exercise, but requested to be included in the qualitative interviews and focus-group discussions subsequently. All of the interviews and focus groups were conducted in person by trained researchers, who audio-recorded and transcribed the discussions for analysis.

Data analysis

The survey data were reviewed for inconsistent, invalid, missing or outlier data using statistical methods. Data standardisation was used to identify and convert the data from diverse formats into one uniform format. For the open-ended questions, thematic codes were developed to convert the data into consistent and valid formats.

Descriptive statistical data analysis was applied to the close-ended questions, while thematic analysis was employed for the open-ended questions. Notwithstanding some limitations, the survey elicited significant data on the research questions asked in the study. In addition, focus-group discussion data were analysed thematically and coded feedback areas are reported in the findings below, in response to the following overarching research questions:

2 It is important to note that, since these were paper-based questionnaires couriered to the colleges for distribution, it is not clear whether all of the questionnaires delivered to the colleges were distributed to all the lecturers and students.

- What makes for quality teaching and learning at successful TVET colleges?
- What pedagogies, methodologies and technologies promote learning in successful TVET colleges?
- What teaching and learning approaches and practices assist in preparing learners for the workplace?
- How can TVET colleges address the range of diverse learning needs of TVET college learners to enhance success rates?

Findings

RQ1: What makes for quality teaching and learning at successful TVET colleges?

Key themes that emerged from the qualitative data, as expanded on below, were related to engagement and participation, assessment and outcomes, teacher expertise and professional development, leadership and management, and student support.

Engagement and participation

According to the data, quality teaching and learning can best be described and measured by the extent to which students are engaged and participating in the educational process – metrics which serve as vital indicators of the effectiveness of teaching and the depth of learning. For example, lecturers stressed the importance of professionalism, humanised pedagogies and student empowerment, suggesting that a quality educational experience is one where students are actively involved in a safe and supportive environment. The lecturers at these colleges collectively supported the assertion that quality teaching is manifested in classrooms where students are actively participating, feel psychologically safe to engage and where learning is fun. As one lecturer pointed out: ‘I try to make lessons fun and enjoyable by getting them [students] to engage.’

What learning and teaching strategies/activities helped you learn best? (n = 2 427)

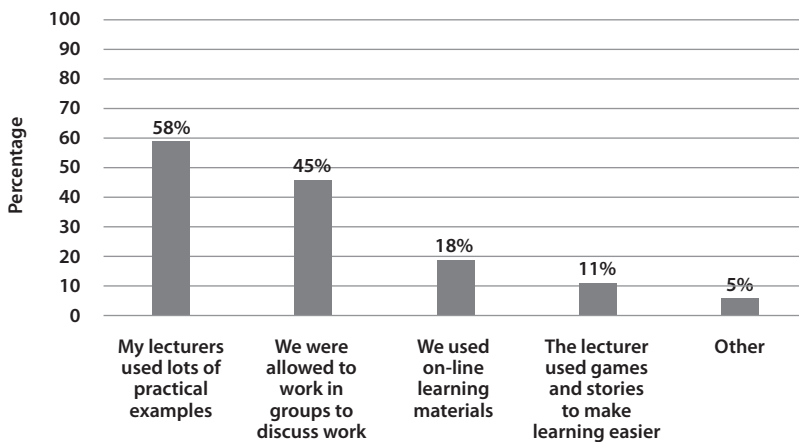


FIGURE 1: Learning and teaching activities or strategies that best helped students to learn

Some lecturers noted that, while they believed in the necessity for student participation, time constraints and resources often had an impact on the quality of teaching and learning.

From the students' perspective, the balance required between theory and practice and the importance of supportive student–lecturer relationships were highlighted. Students were in agreement with lecturers that instructor knowledge was critical, and they cited interactive teaching methods as key to fostering an engaging learning environment through group work, online materials and gaming, as highlighted in Figure 1.

The quotations below from students and lecturers elaborate the strategies that helped students to learn best:

We do practicals and theory, but practicals make it easier ... to understand the course that I'm doing and what people do in that industry. (Student)

Theory and practical parts are the best learning methods for ... [*me*]. (Student)

I use a lot of demonstrations and play videos so that they can see what they learn in theory versus [the] practical. (Lecturer)

Videos, online/cellphones are used for students to immediately see the connections to real-life situations. (Lecturer)

Some students expressed their preferences for one-on-one teaching methods for the purposes of asking questions and achieving a better understanding. The students also appreciated sufficient college preparation before examinations and access to lecturers for help in this regard, as illustrated by the following extracts from the students' data:

Lecturers gave [us] old exam papers and some gave [out] notes, which helped a lot.

They give us past exam questions and ... [*make*] some notes for us to study.

In Industrial Electronics, my lecturer made it fun and enjoyable. The examples were very practical and once taught you will never forget [them]; ... it made my final exams ... easier.

Assessment and outcomes

Lecturers underscored the importance of a robust evaluation system that includes student assessments and outcomes as key to measuring the quality of teaching and learning. They advocated an approach that not only reflects academic achievement, but also prepares students professionally and personally as the ultimate testament to quality education. They highlighted the importance of diverse competency-based assessments, including practical assessments such as sales pitches and marketing proposals in Business Studies, emphasising

the application of real-world skills as a measure of quality. These lecturers cited regular assessment and student feedback as tools for gauging effective teaching and also as fundamental to monitoring academic progress, workplace preparedness and student perceptions.

However, despite assessment being valued for a quality learning process, some criticism was levelled at onerous paper-based assessments and limited practical testing at TVET colleges. A lecturer stated:

The assessment methods do not deal with real-work, realistic problems. They only deal with tests.

This was supported by a student, who observed:

The assessment methods do not reflect real-world challenges. We need more practical assessments that prepare us for the industry.

Notwithstanding the strongly centralised assessment regimes that public TVET colleges are subject to, lecturers across the campuses participating in the study attempted, in their classrooms, a range of competency-based assessments, including practical assessments related to those industries that the students would be entering. Students confirmed that their lecturers provided valuable practical experiences aimed at preparing them for future jobs in their industry.

Teacher expertise and professional development

Lecturers across the board firmly believe that their own continuous improvement and their understanding of workplaces are crucial to quality teaching. The lecturers believe that it is important for them to be involved in curriculum development, which was not the case at the time of the research, as this would improve the quality of the curriculum and the content. One lecturer expressed her disappointment thus:

At the moment, I, as the lecturer, am not participating in curriculum development, since a lot of things here are centralised in DHET.

Although there were some negative perceptions about lecturers, students generally expressed positive sentiments about their lecturers, with some indicating that the lecturers are knowledgeable and make the effort to help students understand the course material. The following extracts highlight the students' positive perceptions of their lecturers:

The lecturers are very satisfactory and have a broad knowledge of the course. They put in so much effort, encouraging and motivating us to do our best, and they always go the extra mile for us as students.

They put in extra work and you leave every lecture having understood everything and [been] given room to ask questions.

Leadership and management

Students credited colleges' management with creating conducive learning environments, for example by providing security on campus and supporting lecturers to do their work well. When asked how they would describe the kind of leadership at their college that could contribute to student success, most of the lecturers mentioned three types, with supportive leadership mentioned by most of them – as indicated in Table 2.

TABLE 2: Types of leadership identified as being able to contribute to student success

Type of leadership that could contribute to student success	Frequency count (n = 272)
Supportive leadership	73
Academic leadership	31
Democratic leadership	41

Supportive and academic leadership were described as support being given to both lecturers and students in order to improve learning outcomes. Democratic leadership was perceived as being consultative and tenets of democratic leadership that were mentioned by lecturers included: leaders adopting ideas from staff members; engaging with foresight; being forward-thinking, open to discussing challenges faced by learners, open and friendly but firm and fair, and accessible to students in resolving issues; and also a leadership style that emphasises responsibility, time management, dedication and hard work.

Whereas most students indicated that they could not comment on management as they had not interacted at this level, positive leadership styles and effective management at their colleges are regarded as contributing to a conducive learning environment. Despite their positive sentiments, some lecturers voiced concerns about questionable management practices, outdated policies and the need for a paradigm shift in the approach of management to teaching and learning. They also highlighted the impact of politics and bureaucracy on the decision-making processes in the institution.

RQ2: What pedagogies, methodologies and technologies promote learning in successful TVET colleges?

Key themes arising from the respondents' feedback were these: hands-on, active learning; multimedia and technology; collaborative learning and peer support; learner-centred pedagogies; inclusive and supportive classroom environments; and industry and real-world engagement. These are explained below.

Hands-on, active learning

Many of the lecturers and students identified hands-on, active learning as a critical factor in promoting learning success for college students. For example, the use of diverse teaching methods, including demonstrations and multimedia technology, was said to accommodate different learning styles. Lecturers supported the integration of multimedia in workshops,

advocating real-world experience with the latest tools and technology. This approach assisted the students in making theoretical knowledge more concrete and relevant, a sentiment also echoed by many lecturers. They noted the use of visual aids such as overhead projectors and Internet resources to support various learning styles, underscoring the need for technologies that provide a rich learning experience and prepare students for professional contexts.

Hybrid learning, described as combining technology with face-to-face teaching, not only diversifies pedagogy, but also aligns with industry needs, enhances employability skills and respects the diversity of student backgrounds and learning styles. It is evident that such an integrated approach is seen as being vital to the modernisation and effectiveness of TVET education and for preparing students for the dynamic demands of the workforce.

Multimedia and technology

Students across various fields mentioned that they appreciated the use of visual learning methods and practical work activities, but many expressed concerns about the shortage of tools and equipment for practical work, about outdated textbooks and about a lack of focus on new technologies. There were disparities between lecturer and student reports regarding the quality and quantity of these resources. Lecturers noted the role of Moodle and e-learning platforms as facilitating successful revision. Online learning was seen as being key to fostering peer learning and providing flexible learning options; and the lecturers similarly advocated the use of more visual aids and projectors to support different learning styles and supplement classroom instruction. The students provided first-hand insights into the effectiveness of practical, multimedia instruction and a multimodal approach that engages them across different sensory-learning channels. Most of the students make use of their own devices for learning with technology, particularly smart phones, as reflected in the figure below:

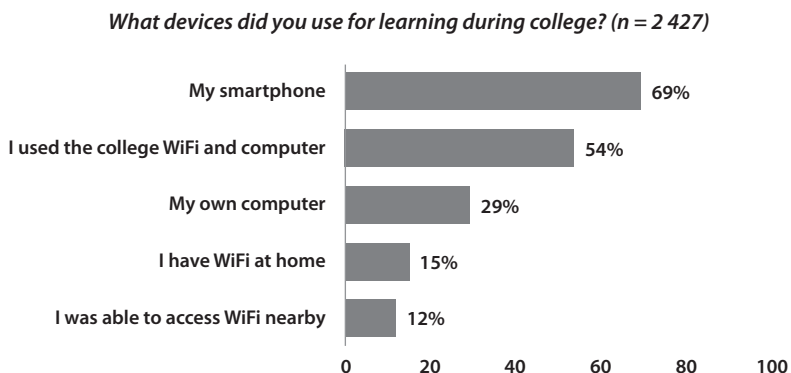


FIGURE 2: Devices used by students during their studies

Collaborative learning and peer support

Collaborative learning and peer support are considered to be central to promoting learning success across TVET colleges, as highlighted by the lecturers who stressed the significance of varied

learner-centred pedagogies and group work in catering to diverse learning styles. Group work is seen as a method with which to accommodate visual, auditory, reading or writing and kinaesthetic learners. Many lecturers reported on the value of group study and peer learning for teamwork, skill development and knowledge sharing. One lecturer pointed out the role of case studies and role plays in applying course material to the real world, with peer support being integral to this process.

Learner-centred pedagogies

Many of the lecturers reported learner-centred pedagogies (LCPs) to be effective methods of teaching; they also spoke of the effectiveness of LCPs in tailoring education to various learning styles. Lecturers noted their use of demonstrations and videos to enhance practical understanding, in these ways cementing theoretical concepts with tangible experiences. A blend of technology and traditional learning, they held, facilitated the immediate application of learned skills through video and peer learning. The lecturers stressed the importance to academic success of respectful, inclusive environments and also of engaging classroom discussions. Overall, there was consensus among both the lecturers and the students that learner-centred pedagogies are instrumental in promoting learning success by engaging diverse learners through a synergy of methodologies and technologies tailored to individual learning styles and needs.

Inclusive and supportive classroom environments

According to the lecturers, fostering an inclusive classroom climate and implementing student-driven research projects boost engagement and students' critical competencies. Differentiated instruction, respectful learning spaces and supportive study materials are strategies that affirm the value of diverse student needs, promoting success. Similarly, lecturers emphasised the need for using real-life examples to make learning relatable and in so doing enhancing comprehension and accessibility for students from varied backgrounds. Students said they appreciated individualised assistance, including counselling and remedial instruction.

RQ3: Which teaching and learning approaches and practices assist in preparing learners for the workplace?

Themes from the data regarding this matter are highlighted below. These are industry and real-world engagement; soft skills development; up-to-date curricula and technology; career-readiness; and professional attitudes.

Industry and real-world engagement

It appears from the data that preparing work-ready graduates is a multifaceted process involving the incorporation of practical skill-building, real-world scenario exposure and industry interaction into the curriculum. The lecturers voiced the importance of practical skills, case studies and current technologies in education, emphasising the need for practical technology skills as a preparatory tool for the workplace. They spoke about the importance of experiential learning in workshops as being pivotal to building practical competencies, while industry engagements are perceived as having the ability to keep course content in line with workplace advancements. Whereas the importance of WIL is recognised, there are variances in the extent to which students have access to WIL, although

this does not seem to be consistent across programmes. For example, some students in Engineering indicated that there is no engagement with industry, whereas others studying Plumbing indicated that there is access to WIL. Similarly, at one campus, students pursuing Business Management qualifications indicated that there is some industry experience, whereas others studying Financial Management indicated that they did not get much exposure to the industry. Whereas lecturers' and students' views on teaching and learning converged in the study, the greatest divergence surfaced in relation to workplace experience, where most lecturers cited internships as a method used to prepare students for the world of work, a method that was cited by the lowest proportion of students, as highlighted in the following figures (Figures 3 and 4).

What preparation for work, if any, does your college provide for students? (n = 272)

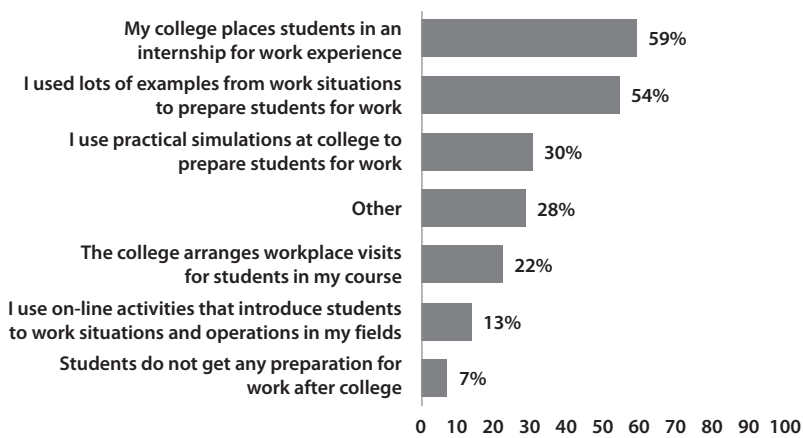


FIGURE 3: Kinds of preparation for work provided by colleges: Views of lecturers

What preparation for work, if any, did your college provide for you? (n = 2 427)

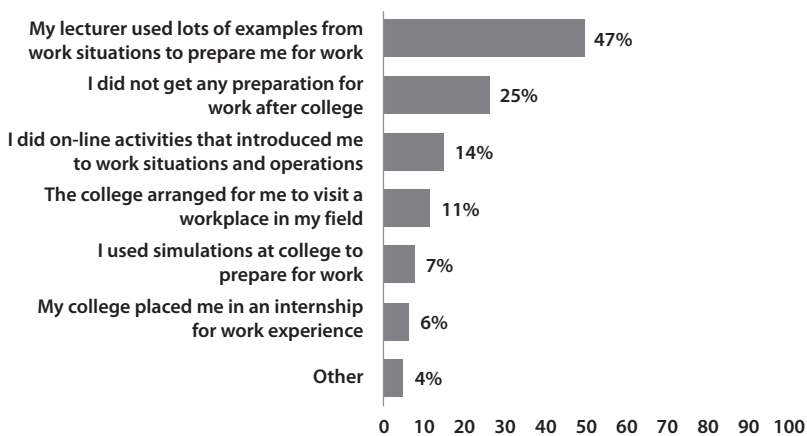


FIGURE 4: Kinds of preparation for work provided by colleges: Views of students

However, there was congruence between the two groups in citing examples from work situations that prepare students for the world of work.

Soft-skills development

Developing soft skills and combining practical technical training with the cultivation of professional soft skills were regarded as necessary to prepare students to meet the cultural and interpersonal demands of today's workplace. For example, lecturers explicitly targeted soft skills in their recommendations, emphasising the crucial role of these skills in career success. They suggested that these skills should be integrated formally into the curriculum to prepare students more adequately for professional environments. The lecturers indicated that practical skills, coupled with direct industry engagement and work visits, make education more relevant to the workplace. They agreed among themselves about the importance of aligning course content with industry needs, a measure facilitated by ongoing communication with industry partners. Students, too, attached credence to the value of industry-aligned course content and work placements for fostering professional attitudes and behaviours.

The lecturers emphasised the importance of discipline and professional behaviours and also the value of industry-aligned course content and work placements for fostering professional attitudes and behaviours. Career-readiness and professional attitudes, it was held, are crucial to instilling professional etiquette, effective workplace communication and a strong sense of ethics. The following extracts from lecturers' data are illustrative:

Key approaches that assist in preparing TVET learners for the workplace include experiential methods like site visits, as well as cultivation of professional soft skills and discipline. Workplace exposure and career-readiness skills are critical.
The discipline instilled in our students will take them far in the future.

Quality teaching and learning [are] grounded in real-world relevance and evolved through continual assessment and improvement processes in collaboration with stakeholders. Measurable outcomes include skill competency, workplace readiness, and student feedback.

Having workshops that simulate real-work environments with industry-standard tools and equipment is invaluable for TVET students. Experiential hands-on learning allows students to develop practical skills and gain confidence. Exposure to realistic scenarios and workplace conditions also helps with the transition from college to employment.

Up-to-date curricula and technology

The importance of up-to-date curricula and technology was strongly supported by lecturers across various TVET colleges. For instance, lecturers highlighted practical training as essential, with an emphasis on current technologies and equipment to mirror workplace

settings. Practical skills, case studies and relevant textbooks which they incorporated to some extent, were repeatedly mentioned as critical for preparing students for employment.

Career-readiness and professional attitudes

Preparing students for the transition to the workplace transcends the acquisition of technical knowledge and skills, as was gleaned from various interviews with both lecturers and students across the colleges. The consensus was that instilling professional etiquette, effective workplace communication and a strong sense of ethics is imperative. For instance, lecturers underlined the significance of practical training and the integration of current technologies, and also the value of direct industry engagement through work visits and industry-linked projects. Similarly, the importance of including experiential learning and industry alignment in course content was emphasised.

RQ4: How can TVET colleges best respond to the range of diverse learning needs of TVET college learners to enhance success rates?

The findings reveal that, to accommodate the diverse needs of TVET students and prepare them for success, a multifaceted approach is required. Differentiated and individualised instruction, inclusive classroom environments, industry engagement and soft-skills development, as commented on below, are all considered to be critical components. By implementing these strategies, it was held, TVET colleges supported their diverse student populations more adequately and ensured that their graduates are well prepared for successful careers.

Differentiated and individualised instruction (DII)

Differentiated and individualised instruction emerged as a crucial approach to meeting the varied needs of students. By tailoring teaching methods and materials so as to accommodate different learning styles and experiences, educators said that engagement and learning outcomes were improved.

Student-driven projects

Student-driven research projects promote self-directed learning and cater to a diverse range of interests and backgrounds.

Inclusive environments

Creating inclusive classroom environments where diverse learning needs are acknowledged and accommodated, and the use of daily life examples to make content more relatable and accessible, were emphasised. The lecturers focus strongly on culturally responsive teaching to help overcome individual barriers and create an adaptive learning environment that involves integrating students' cultural backgrounds into the curriculum and classroom management.

Peer tutoring and mentoring

Peer tutoring and mentoring were said to be valuable strategies for supporting diverse learners, as is indicated in these extracts from students' and lecturers' data:

Allowing students to express themselves through group discussions. (Student)

Class discussion, debates, group discussions. (Student)

My classroom environment is one full of positive energy where students learn in a very respectful manner. Peer learning [is] being practised ... most times. (Lecturer)

Students can help each other when we do classwork. (Lecturer)

By fostering language support and open communication, these approaches help to respond appropriately to specific learner challenges and serve to enhance the overall learning experience.

Conclusions from the data

It is evident from the data that there is a heightened awareness among both the lecturers and the students who participated in this study of what constitutes quality teaching and learning in TVET and of what has enhanced student success in the colleges that participated. It is noteworthy, though, that the lines between 'what is' and 'what ought to be' at times become blurred for lecturers and students; but it is clear that colleges with successful student outcomes aspire to what they consider to be best practices in teaching and learning, practices which find purchase in the elements of quality that were derived from the research literature. Notwithstanding the students' and lecturers' input about what could be improved upon, there is significant evidence of the college lecturers striving to uphold these good practices.

This study focused on the pedagogies, methodologies and technologies that appear to be promoting learning success in TVET colleges and which are strategies that align with the curriculum-related success indicators found in the relevant scholarship. Hands-on active learning was emphasised as a critical factor, with diverse teaching methods such as demonstrations and multimedia technology being key in this approach. Collaborative approaches and industry site visits were emphasised, as were the importance of applied learning together with visual aids and Internet resources to support various learning styles. Practical exercises and case studies were recommended as key methodologies for furthering applied learning. Teaching and learning approaches and practices that help to prepare learners for the workplace, such as formative assessment and technology integration, also assisted in preparing students for the dynamic demands of the workforce and ensured that almost all students' needs were met. Overall, it was held that the preparation of work-ready graduates involves incorporating practical skill-building, real-world scenario exposure and industry interaction into the curriculum.

A robust evaluation system that includes varied student assessments was viewed as essential to measuring the quality of teaching and learning, an approach that is not only reflected in the

academic achievement, but is also geared towards preparing students professionally and personally for their working lives beyond college.

The lecturer participants strive to create *inclusive and supportive classroom environments* that they believe enhance the success rates among a diverse student body, while the cultivation of *professional behaviours and soft skills* is seen as necessary for meeting the cultural and interpersonal demands of today's workplaces.

Finally, *supportive leadership* was mentioned most often as being the type of leadership that contributes to student success.

Synergies between the research literature and the findings of the research

The data converged on four common threads that resulted from a juxtaposition of the literature meta-review and the qualitative research data. These threads are a student-centred focus, the integration of technology, the development of skills and competencies, collaboration and contextualisation, as set out in the sections below. We use extracts from the comprehensive literature review referred to earlier simply to illustrate the synergies with the empirical data.

Student-centred focus

There was a strong emphasis in the research literature on focusing on the needs of students through curriculum design, teaching strategies and support services in order to create environments in which students can thrive academically, socially and personally. In the qualitative data, there was an emphasis on curricula that adapt to students' needs and experiences, teaching strategies that engage with students' cultural backgrounds, and support services that accommodate their emotional and academic needs.

The areas of focus raised in this thread accord with the definition of 'quality teaching' espoused by Hénard and Roseveare (2012):

Quality teaching is the use of pedagogical techniques to produce learning outcomes for students. It involves several dimensions, including the effective design of curriculum and course content, a variety of learning contexts (including guided independent study, project-based learning, collaborative learning, experimentation, etc.), soliciting and using feedback, and effective assessment of learning outcomes. It also involves well-adapted learning environments and student support services (2012:7).

Integration of technology

The utilisation of technology in modern VET classrooms has been highlighted in multiple indicators in the literature. Curricula are expected to be technologically current, teaching

strategies ought to incorporate digital tools and learning environments should be enhanced through digitisation. The emphasis on ICT, in both curriculum development and classroom practice, illustrates a broader trend towards digital literacy and the use of technology to enhance learning. Qualitative data obtained from students and lecturers similarly underscored the importance of technology-infused teaching and learning and a concern about providing future-focused training for workplaces. Evans (2019:952) points to the 'forces' that are shaping new perspectives on vocational learning:

... the emergence of new technologies permits new ways of learning and contributes to the reshaping of work as digitization and automation gather pace. New learning technologies are influencing the ways in which people participate in existing formal learning programs and through individual accessing of online resources. Second, new workplace occupations and technologies have emerged with new knowledge and skill requirements. These undermine old boundaries between vocational and academic learning

Development of skills and competencies

A shared emphasis is apparent in the literature on VET institutions being responsible for the development of practical skills and competencies across various indicators. This was particularly evident in curricula dealing with work-related skills, authentic assessments in teaching, and learning environments that simulate real-world conditions. The alignment with industry needs and vocational training reflects a broader educational objective to ensure that students are job-ready upon graduation, goals that were echoed by both the students and the lecturers in this study, and also in the South African TVET policy documents. This sentiment is echoed in the literature on relevant 21st-century skills and 4IR (4th Industrial Revolution): for instance, the OECD recommends that

VET students develop wider competencies alongside immediate job skills so they can more easily move from one job to another over their working life or shift to another career path' (OECD Directorate for Education: Education and Training Policy Division, 2011:10).

Research also points to the need for employability skills that equip workers for the changing workplace and to be productive citizens (DiBenedetto, 2019; Douse & Uys, 2019).

Collaboration and contextualisation

Collaboration with industry and contextualisation in real-world environments were recurrent themes in both the meta-review and the qualitative research data. This emphasis was expressed in suggestions for working with employers to shape curricula, using real or simulated work environments for learning, and for teaching strategies that are rooted in practical vocational contexts to ensure that education remains relevant and applicable to students' future careers.

Vocational learning in the authentic environment of work requires the collaboration of learning institutions and industry in partnerships that aim expressly to benefit both students and lecturers. Gustavsson and Persson Thunqvist (2019:984) hold that ‘both school- and workplace-related conditions must support putting knowledge to work in the workplace context’; this should be achieved through a process of recontextualising knowledge and skills. A UNEVOC Network report cited by Bahl and Dietzen (2019:3) underscores the perspective in the literature that work-based learning is being ‘increasingly recognised ... as an effective strategy to promote [the] quality and relevance of education and training’.

Significance of this research

The findings of both the desktop literature review and the empirical fieldwork shone a light on what contributes to successful student outcomes in VET, and also on some of the necessary preconditions for quality teaching and learning. These findings may be informative for lecturers, policymakers, college management and funders when they consider the necessary support systems and structures that ought to be put in place in order to build an enabling framework for quality teaching and learning at TVET colleges in South Africa. Through a comprehensive meta-review of the literature on quality in VET systems that was supplemented by investigative and qualitative fieldwork, this project has contributed towards the development of robust, valid and contextualised indicators according to which TVET college quality could be described. It might also serve as a basis from which to reflect on continuous quality improvement. The next steps would be to interrogate these findings critically and to use them to inform the design of an instrument that could be piloted among TVET colleges as a possible self-evaluation tool, which could then enhance the utility value of this national research project.

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Systems analysis of the national performance management system for TVET lecturers in South Africa

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ABSTRACT

A quality performance appraisal (PA) and continuing professional development (CPD) system is an essential component of a national performance management system for TVET lecturers. It is intended to support an improvement in lecturer quality and accountability, strengthens student graduation rates and feeds national human resource development for sustainable employment. The aim of this research study was to contribute to improvements in the functional integration and synergies between PA and the CPD system as applied in TVET colleges. The study involved the collection of qualitative data at six South African TVET colleges in order to develop a general description that captures the key features and interactions commonly shared across the case studies in a general analytic model. Data collection, coding and analysis informed the iterative development of a systems model based on causal loop analysis (CLA). This application of the CLA tool provided the means to represent multiple relationships and the feedback loops between them visually. We found that four main causal loops strongly influence the dynamics of PA and the CPD system. The findings offer an analytic platform for further research towards strengthening and reviewing the overall performance management system for TVET lecturers.

KEYWORDS

Performance appraisal; continuing professional development (CPD); causal loop analysis (CLA); TVET colleges; TVET lecturers

Introduction

This article is devoted to a research study that explored the ways in which technical and vocational education and training (TVET) lecturers' performance appraisals (PA) and continuing professional development (CPD) activities take place in the institutional environment of TVET colleges. The intention was to identify systematically the course of the PA process, including the formal transactions between individual lecturers and their managers, according to mandated processes, requirements and deliverables. The research also explored the quality of the mechanisms and resources required for an institution to support the process and the intended achievements that might lead to improvements in the quality of teaching and learning experienced by students.

The critical importance of the measures in place to evaluate the quality of TVET lecturer performance (Wedekind et al, 2024) lies in their contribution to national human resource development by equipping young people with intermediate technical and vocational skills that will enable them to enter the world of work and engage in productive and decent employment (HRDCSA, 2022). Improving the synergy between TVET lecturers' PA and their CPD can lead to enhanced lecturer competencies and therefore to the enhanced training and graduation prospects of college students. This research is therefore directed towards understanding the tenor and characteristics of both PA and CPD at the college level, with a particular interest in fathoming lecturers' perceptions and experiences of the processes. The research aimed to generate a system map that highlights the features of the PA–CPD's functioning which, from the perspective of TVET lecturers and managers, are conspicuous for their effect on the quality of the professional development process for lecturers.

Causal loop analysis as a data-gathering and an analytic tool

Causal loop analysis (CLA) has been advanced by the systems dynamics research community and is frequently applied to organisational settings (Richardson, 2004; Peters, 2014; Acaroglu, 2017). This approach has been applied to medical systems (e.g. Sarriot et al., 2015; Renmans, Holvoet & Criel, 2017;) and less frequently to education systems (e.g. Groff, 2013). The application of CLA to TVET systems is relatively untested and constitutes an important part of this article: to experiment with the application of CLA with a specific focus (namely on PA and CPD) in a manner that could enable it to be applied to other studies in TVET.

CLA offers analytic value because the approach provides a structure according to which complex systems can be unravelled and analysed (Richardson, 2004; Peters, 2014). CLA as an analytic method is an aid to understanding system complexity. In other words, CLA is a simplification of reality that is used by researchers or management to comprehend a system's operation during a specified period. It is frequently necessary to explain the outcome of a CLA, for which a narrative or storytelling technique is useful (Richardson, 1997). In the context of systems thinking and CLA, cause-and-effect relationships are central to understanding the way different elements in a system interact with and influence, or have an impact on, one

another. Changes in one variable can affect many elements in the system because they are linked and interdependent (Richardson, 1984). Accordingly, the CLA method is grounded in understanding a cause-and-effect relationship that occurs when a change in one variable ('the cause') leads to a change in, or a consequence for, another variable ('the effect').

The cause is therefore what initiates (or contributes to) the effect. The cause may, on its own, have a direct effect or may only indirectly (contribute to or) bring about an effect. The effect involves a change in the characteristics of the receiving variable, which then changes the way it interacts with the other variables to which it is related. This interaction produces one or more chains of cause-and-effect relationships between variables in the system. The systems under analysis in this research primarily involve human social and individual interactions. Unlike an analysis of systems that deal with inanimate objects – for instance, manufacturing systems – human interactions and communications are more complex, so that very rarely are the 'causes' of either increases or decreases in one variable due solely to any one interaction between any two variables.

Complex systems that are inclined to change over time are known as dynamic systems. The dynamic behaviour of a system may contribute to evolving patterns and behaviours that can frequently exhibit non-linear patterns reflecting uncertainties and non-linearity. This means that even in a system that consists primarily of a set of variables designed to work in combination to achieve a common purpose, this may not necessarily occur as intended. Interactions between the elements may lead to new, sometimes unanticipated, conditions that may have positive or negative consequences for the participants or institutions in the system (Richardson, 1984). Because of these uncertainties, complex systems are challenging to predict, understand or steer. Examples of complex systems include ecosystems, economies, population systems and social networks. Systems analysis emphasises a methodical and interdisciplinary approach to understanding such systems and provides a method for examining the relationships and interactions among system variables to identify opportunities for improvement in the system's efficiency, effectiveness and user-friendliness.

The CLA methodology is oriented towards generating a visual representation of the system variables and their cause-and-effect interrelations in the form of causal loop diagrams (CLDs). These CLDs are used to depict dynamic interrelationships between variables graphically. Furthermore, CLDs allow us to visualise these variables and their *relationships* over time. They explain the behaviour of a system by depicting a set of interconnected nodes together with the feedback loops created by the connections. One or more of the nodes may present the core symptoms of a problem; and identifying the affected nodes will help to trace the causal chains leading to the challenges preventing the system's full success. Therefore, CLDs enable the researcher to visualise holistically how the parts of a system interact in order to have a positive or a negative impact on a particular outcome (Richardson, 1984).

Our approach was therefore to use CLA to investigate the challenges and opportunities in the current configuration of PA and CPD for TVET lecturers. Our main research question

was this: ‘How can the relationship between PA and CPD be enhanced within the overall performance management system for South African TVET lecturers?’ The research was premised on the critical role of TVET lecturers and the extent to which a fair accountability process in TVET colleges can make the sector more efficient and, by implication, better able to contribute to resolving the country’s challenges in job creation and skills development.

Using CLA in the systems analysis approach in this study offered analytic value by providing a structured methodology according to which the complex system could be unpacked and analysed to identify:

- the relevant variables influencing engagement with PA and the CPD system; and
- the quality of the interactions between variables and how these influence the outcomes of the PA process and the developmental role of CPD in it.

Data-gathering was conducted using a qualitative approach. Individual and small focus-group interviews were used to gather information, first, about the PA processes and the lecturers’ and the departmental heads’ understandings and experiences of it. And, second, about the links between PA and CPD as core elements of the performance management system. The fieldwork also examined the participants’ understanding of how well PA and CPD processes are integrated in the system. The processes investigated included access to CPD opportunities, the impact of lecturer motivation, and stakeholder involvement and feedback in the system. Fieldwork was followed by data-coding, data-capturing, analysis and the creation of CLDs.

Driven by the aim of contributing to improvements in TVET college institutional quality and development, the analysis focused on identifying good or promising practices and also on less effective elements in conducting PAs and weaker links between the PA and CPD processes. Challenges and potential gaps affording opportunities to make improvements were sought. Interviews were held with TVET lecturers, their supervisors and senior TVET managers (campus manager or college principal). Interviews covered the PA and CPD processes, lecturer experiences and the functioning of the systems at departmental and institutional levels.

The analysis also aimed to identify patterns of similarity between, and variations in, PA and CPD implementation across institutions to understand how colleges have adapted these processes to their specific needs. The interview findings were then used to develop a draft CLD that serves as a visual representation of the current PA processes and CPD activities in the participating colleges. The CLD also mapped the positive and negative influences on the effectiveness and quality of PA and CPD, as represented through interdependencies and feedback loops. The CLD was then refined so that it conveyed simultaneously occurring activities, dynamics and tensions in the system. It could then be used as input for a group discussion, with the feedback being used to refine the diagram further to represent the workings and interaction of system elements more closely.

The main challenge in using the CLA method was to unpack the complexity of multiple relationships between variables in the identified system. The initial two-step process involved: (1) identifying the variables that make up the system; and (2) identifying cause-and-effect relationships between variables in the system through exploration and analysis of the interview data.

The third step was to create a graphical representation illustrating the system's interdependencies and feedback loops. These relationships are represented graphically in the CLD, where arrows show the direction of cause and effect between variables and loops to reflect the way the impact of changes in one variable could percolate throughout the system.

This mapping exercise aimed to identify, describe and represent the variables in the system and their interrelationships. The term 'mapping' is used as a convention only and should not be taken to imply that the resulting diagram represents a fixed landscape. Furthermore, this research exercise was deliberately framed within the broader institutional landscape in which the core PA and CPD functions interact. This means that, while internal and environmental factors such as financing that have an impact on the PA and CPD processes in each institution are central to this study, the vertical articulation of the PA and CPD process at the national, provincial, college and campus levels, though not central to this study, do need to be kept in mind. Nonetheless, the human resources (HR) management functions relating to the governance, resourcing and operation of the PA and CPD processes are referred to from the college perspective only, to retain the research focus at that institutional level.

It must, however, be re-emphasised that systems thinking and CLA as an analytic method are an aid to understanding system complexity but do not solve the inherent complexity on their own. However, the systems-based nature of the CLA analysis allows for a more holistic and nuanced understanding of institutional processes and dynamics within which professional relationships and experiences relating to performance appraisals and professional development opportunities play out.

Approach to data analysis

The process of identifying the relevant variables consisted of two steps:

- Inductive coding of interview transcripts to identify an initial long list of variables and the frequency with which they appeared across all the interviews; and
- Iterative re-evaluation of the prominence of variables according to interviewee observations as to the relative influence of variables in shaping the PA process.

Although we took into account the frequency with which interviewees mentioned variables during coding, our approach was otherwise largely qualitative. When evaluating the prominence of variables, we focused on the phrasing and tone that interviewees used in describing the variables and on the polarity they attached to each variable.

Table 1 lists the 15 main variables that emerged by focusing specifically on variables related to the PA and CPD procedures which participants identified that they were involved in in their capacity as lecturers, campus management (the main unit responsible for implementing the PA and CPD) or college management.

TABLE 1: Variables included in the CLD analysis¹

	Variable	Description	Participant responses
a.	Senior and departmental leadership committed to presenting the PA as devoted to lecturer professionalism	The PA is presented as designed for the holistic development and professionalisation of lecturers	Monitoring for appraisal 'is identifying gaps for the purpose of supporting lecturers to grow professionally'
b.	Willingness to marshal institutional resources for lecturer development	College resources are devoted to fostering lecturer well-being and developing reward systems	'[W]e do have – as a college – a well-structured ... health and wellness programme at all of our delivery sites, including our head office'
c.	The integrated quality management system (IQMS) process is presented as developmental at induction and regularly after that	The IQMS is presented as a variable of a holistic appraisal process rather than as an isolated event	'[T]here's a need for proper induction into why this is happening'
d.	Lecturer and leadership acceptance of reward system	The degree to which lecturers recognise strong performance leads to intrinsic and extrinsic rewards	'I believe that colleges need to put more effort into recognising and acknowledging the importance of lecturers in this instance'
e.	Lecturers motivated to commit to mutual development and growth of colleagues through the appraisal process	The degree to which lecturers recognise that their professional development also involves the development of their colleagues	'It's a good developmental tool because it doesn't just look at the manager rating the subordinate; it's also a 360. They can do their own self-assessment; their PA is with you when they're being assessed ... so it's a good reflection for the employee'
f.	Lecturers expected to ensure sufficient quality of teaching staff	The level of understanding that the quality of teaching at the institution is the responsibility of all teaching staff	'After every administration of a task we need to do analysis and check whether we are improving or not. So, if we are not improving, then that is where we will be sitting down'

¹ Variables are numbered for ease of reference.

	Variable	Description	Participant responses
g.	Lecturer openness to constructive feedback	How open the lecturers are to receiving constructive feedback	'I think it improves relationships'
h.	Trust in integrity of appraisal process	Level of belief in the developmental aims of the appraisal process	'Lecturers know what is required of them; they know why we are doing this, so no one perceives it as being negative or anything like that; there are no difficulties in it ...'
i.	Appraisal completed primarily for compliance purposes	The extent to which lecturers believe the appraisal process is beneficial to their development	'[M]ost of the time you find that most people do it just for ... compliance, instead of actually doing it for ... development and growth'
j.	Likelihood that lecturers receive 1.5% raise	The chances are that lecturers will receive a notch increase after the appraisal process is completed	'If it wasn't for that 1.5%, a lot of lecturers would not even bother to do [the IQMS] because they feel ... it's such a waste of time, because nothing comes back to them from the exercise'
k.	Appraisal is narrowly regarded as an instrument that assigns lecturers to training	The extent to which the appraisal process is understood as being largely a mechanism for providing lecturer training	'But when it comes to actually actioning those personal plans, I think that's where the wheels fall off'
l.	Lecturers' perception of appraisal as a developmental opportunity	The level of lecturer understanding of the PA process as devoted to the holistic development of lecturers	'Isn't it that the purpose of the appraisal is also ... the whole process of [the] IQMS [and] is also to improve the performance of lecturers?'
m.	Lecturer frustration when requested training is not provided	The level of frustration with an appraisal process that does not satisfy the training recommendations it makes	'So sometimes the frustration is too ... [much] for them; they say: "What's the use, then, if we don't go for training?"'
n.	Appraisal regarded as lacking professional value	The extent to which the appraisal is regarded as a perfunctory exercise completed for the purpose of compliance	'Yes, but it's standard, it's like, what can I say, it's like, you just conform, put in numbers in your IQMS and then you submit'
o.	Acceptance of the appraisal process with potential additional developmental steps	The level of recognition that the PA process might increase demands on lecturers, with the ultimate aim of further growth	'Sometimes it is not easy for us to say: "This one does not qualify to get their pay progression"'

Having identified these variables, the next step was to identify the links between the variables by framing the following questions for each one. For example, with reference to a hypothetical Variable X:

1. ‘Which other variables will Variable X influence?’ This question helps to uncover the direct effects of Variable X on other variables within the system. It helps to identify the downstream variables that are influenced by changes in Variable X.
2. ‘Which other variables will influence Variable X?’ This question explores the influences on Variable X, highlighting the upstream variables that can affect the behaviour or state of Variable X. It helps to identify the variables contributing to changes in Variable X.

These core questions therefore helped to identify those variables that have a direct impact on, or which are being affected by, other variables. This means that the questions also enabled the direction (or polarity) of impact to be established.

Polarity and impact power of causal loops

The relationships between variables are represented by arrows that show the direction of influence – these are known as ‘loops’. A combination of loops in a process can influence the conditions in a system. Loops can be either reinforcing (positive feedback in a certain direction) or balancing (negative feedback in the opposite direction), which contributes to the system’s overall behaviour.

A positive effect in a causal loop indicates a relationship in which an increase (or a decrease) in one variable leads to a corresponding increase (or decrease) in another variable. Positive effects can create reinforcing loops that can either enhance or strengthen the system or amplify negative aspects. A negative effect in a causal loop diagram refers to a relationship where an increase (or a decrease) in one variable leads to a decrease (or an increase) in another variable. A system may have both balancing (or stable) and reinforcing loops. The presence of balancing loops can stabilise the system in a particular state that could be either virtuous or negative (Richardson, 1986; Richardson, 1997; Haraldsson, 2004).

The polarity of a variable indicates its potential to have an impact on another variable in a positive or a negative way. This analysis has therefore contributed to the study in two ways: by identifying variables relevant to and influencing the outcomes of the PA and the CPD system; and by associating each variable with having a positive or a negative impact on the system.

The identification of variables, including the polarity of their impact, is useful to policymakers and regulators for mapping variables in relation to each other in the system. This information needs to be augmented by evidence about the strength of the variables to influence other important variables and so shift the outcome of a system in its entirety. A limitation of this study is that it could not be designed to examine the strength of the variables identified due to the limited availability of quantitative data on the impacts of variables on each other.

Discussion and analysis of the causal loop diagram (CLD)

Primary variables in the performance appraisal (PA) and continuing professional development (CPD) processes

The CLD that follows maps out the topography of the variables in the study, usefully identifying a group of three primary variables that are closely connected to other variables in the PA and CPD processes.

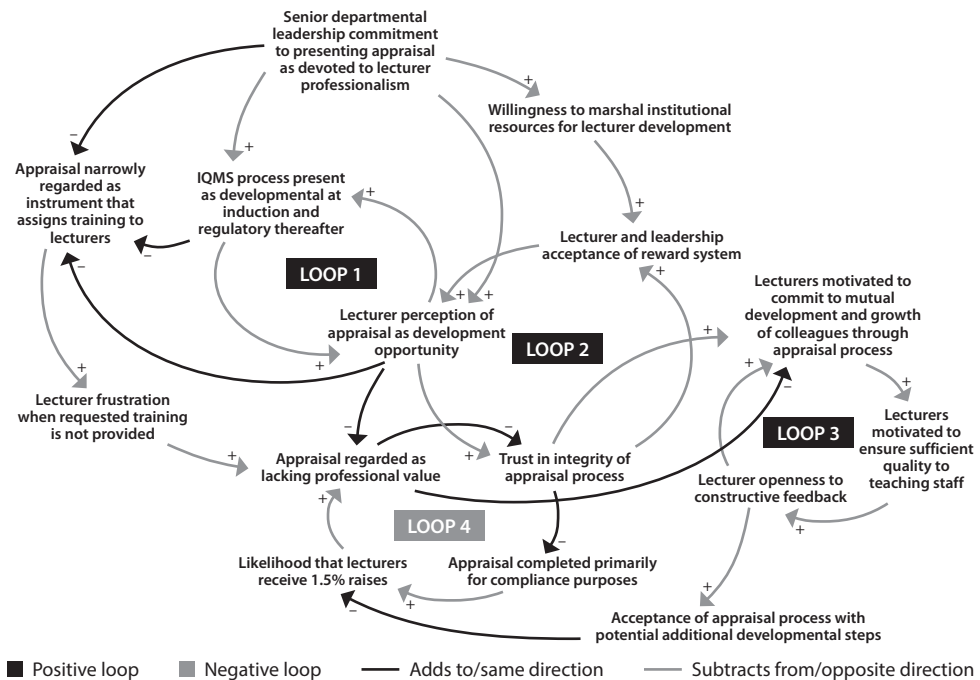


FIGURE 1: CLD of PA and CPD processes

The three primary variables that are highly connected to other variables within the PA and CPD processes were identified as being the following:

- *Leadership commitment to the process of PA and CPD informed by an aspiration towards professionalism*: Important because a fundamental assumption of professionalism is that practitioners proactively take up opportunities to improve their personal or professional development.
- *Lecturer perception of the appraisal as a developmental opportunity*: Important because it emphasises lecturers' growth in contrast to instances where lecturers perceive the appraisal as being narrowly directed to evaluation that may be top-down or used only as a tool for allocating CPD opportunities.

- *Trust in the integrity of the appraisal process:* Important to secure the common shared trust of both the lecturer and the supervisor. The appraisal is a high-stakes process and trust is an important foundation from which lecturer participants draw confidence and motivation to improve their personal growth and performance. Likewise, the supervisor, who may also find the process challenging, must feel reassured that the process provides satisfactory guidance and workable checks and balances.

Interconnectivity and polarity

Identifying the nodes with the highest number of connections by counting the number of interconnections for each variable is useful because changes in these nodal variables will probably have an impact on a higher number of variables with which they are linked. The variables presented in the CLD figure above are presented in Table 2 for ease of reference. This table confirms our interpretation of the CLD figure. It is also important to note that the most connected nodes are shared between lecturers and leadership. This implies that the PA and CPD system may work to its maximal potential only where both leadership and lecturers have, from their perspectives, bought into and supported the process.

The polarity of variables can influence the overall potential of the system to generate a positive or a negative outcome. Where the most connected variables are linked into causal loops with a positive polarity, this means that they have the potential to have a more powerful impact on outcomes from the PA and CPD system. Where this is not the case, it is unlikely that the system as a whole will function optimally, except in pockets where an important variable with a high polarity is present in lecturer and leadership behaviour and attitudes.

The variables with a negative polarity bear further scrutiny because they identify particular areas that may be viewed as potential weaknesses in the process. All of these variables reflect characteristics of the process that can degrade lecturers' inclination to engage. The CLD outcome indicates that lecturers question the intrinsic value of the PA as an obligation that has little value for their occupational advancement. They are frustrated with the poor delivery, or non-delivery, of training opportunities, which inhibits a growth mindset.

Regarding the 1.5% annual salary increase reward, in some colleges this is taken for granted as practically all lecturers qualify for this by submitting the required documents. Only non-compliant lecturers – a small minority – may be denied this reward. In this case, it may be difficult to justify the increase as being an incentive and it may rather be viewed as having no particular polarity. In other words, the 1.5% annual salary increase reward does not operate as an incentive – it is neutral.

TABLE 2: Connectivity in the causal loop diagram (CLD) and polarity of variables

Nodes with a positive polarity and the most connections to other variables in the CLD
1. Leadership commitment to presenting appraisal as devoted to lecturer professionalism
2. Lecturer perception of appraisal as a developmental opportunity
3. Trust in the integrity of the appraisal process
Variables with negative polarity
4. Appraisal is narrowly regarded as an instrument that assigns lecturers to training or training to lecturers
5. Appraisal is regarded as lacking professional value
6. Appraisal is completed primarily for compliance purposes
7. The likelihood that lecturers receive a 1.5% pay progression
8. Lecturer frustration when the requested training is not provided
Variables with positive polarity
9. Lecturers are expected to (or to just) commit to the mutual development and growth of colleagues through the appraisal process
10. IQMS process is presented as developmental at induction and regularly after that
11. Acceptance of the appraisal process with potential additional developmental steps
12. Willingness to marshal institutional resources for lecturer development
13. Embrace of an institutional reward system
14. Lecturer openness to constructive feedback
15. Lecturers are expected to ensure sufficient quality of teaching staff

Depending on the college context, there were significant variations in experiences regarding the PA process, as demonstrated through negative variables (4), (5) and (6). For instance, in some colleges, the PA process was understood and experienced as being part of a holistic design of the working environment in which the college, as employer, was seen to have demonstrated consideration for lecturers' general well-being beyond its immediate function of providing teaching services to meet the college's mandate. However, at other colleges, the lecturers observed that the PA process was mainly a 'paper exercise' performed simply to fulfil institutional performance requirements and was consequently without any professional or personal value.

It is necessary to consider the underlying consequences for a college, campus or department where the PA status quo is a paper exercise and the participants go through the motions without meaningful engagement. In these instances, the fundamental intention of the PA, which is to advance professional growth and the quality of lecturer performance, may not

be fulfilled.² The difficulty that emerges from these scenarios is that lecturers may not be held substantively accountable for their performance and professional development. Lecturer criticism of the PA as being an authoritarian ‘corrective’ exercise carried out by a supervisor³ instead of being collegial and respectful was not apparent.

The variables with a positive polarity refer to three management-related actions:

- Directing institutional resources to fund and support lecturer development (12);
- Developing and implementing reward systems (13), and
- Promoting the personal appraisal process as a developmental exercise throughout the year (10).

Variables with a positive polarity for lecturers include the following:

- Contributing through collegial participation in appraisals (9);
- Collegial support for improved collective lecturer performance (15);
- Acceptance of the consequences of the PA, including the requirement to undertake additional actions mandated for personal development (11), and
- Openness to learning from each other (14).

Causality and predictability

The CLD of a particular institution’s system with changing variables displays a dynamic and interconnected set of relationships in the system. A degree of variability is expected between each particular institutional context due to the different polarities of the variables and the unique variances in the characteristics of each TVET college’s PA and CPD processes.

The CLD depicted above was constructed using interview data from five TVET colleges in five of the six Department of Higher Education and Training (DHET) regions. The CLD focuses on the ways in which management and lecturers view and experience the PA process as it currently operates. The group of participating colleges represents 10% of all colleges nationally, although a larger proportion would have been desirable. Nonetheless, from our snapshot of colleges we found significant differences not only in the ways in which the colleges approach the PA process, but also in the way principals, campus managers, heads of department (HoDs) and lecturers regarded its meaning and importance.

2 There are contributing factors. In employment environments, the PA is commonly experienced as personally trying for both parties – the person rating their colleague and the person being rated – owing to known psychological and emotional factors which need to be countered through mechanisms that include the development of relationships of mutual respect and trust (Tziner & Murphy, 1999; Spence & Keeping, 2011).

3 Meaning a manner that is perceived or experienced as corrective or correctional and which emphasises inequality or ‘uncollegiality’ in supervisor–lecturer relationships.

The CLD is therefore not aspirational but rather a rendering of the elements of PA as presented in the TVET colleges we visited. In the diagram, we outline both positive and negative dynamics, which are labelled as positive and negative loops. On the one hand, we highlight positive, virtuous processes that promote and reinforce staff development, professionalism, collaboration and lecturer well-being. On the other hand, we also identify variables that contribute to an appraisal process which emerges from and further engenders institutional inertia. In what follows, we draw out the most integral variables that shape appraisal outcomes; then we explain each loop in turn, referencing any interview data as necessary.

Before proceeding, a note on terminology. While the IQMS frequently came up in our interviews, it should be viewed as only *one variable* of the PA process, not as the core element. Indeed, regarding the IQMS as the core of the appraisal process is, as we shall see, a contributor to negative PA outcomes and to inertia in the PA process. All references to the IQMS in our diagram and in this narrative should therefore be taken as specific only to the tool authorised by DHET to track lecturer performance, determine growth areas and score lecturer performance according to specific metrics (knowledge of specific learning fields, discipline, diversity, etc).

Our conception of PA, it will become clear, is more expansive, encompassing the institutional promotion of lecturer professionalism, mechanisms for recognising and rewarding staff and a general understanding that the appraisal process is an opportunity for individual development as teacher, colleague and technician. The PA process is therefore above and beyond the use of the IQMS for observing and assessing lecturers, developing codified personal growth plans (PGPs) and scoring for notch raises. If lecturers accept this conception of PA, they will, as one campus manager emphasised, understand that it ‘is something ... for [their] own personal growth’. Therefore, ‘having that in mind should actually be an intrinsic motivation’ for seeking out improvement.

In our diagram, three prominent variables are rendered in bold characters. These constitute what we determined to be the most influential factors in assessing institutional commitments to the professionalisation of staff and, by extension, in promoting effective teaching and learning. These variables are: (1) ‘Senior and departmental leadership are committed to presenting appraisal as devoted to lecturer professionalism’; (2) ‘Lecturer perception of appraisal as a developmental opportunity’; and (3) ‘Trust in the integrity of the appraisal process’.

If we focus broadly on **Loop 1**, we can see numerous effects of leadership presenting the appraisal as developmental in orientation. Crucially, this informs a positive institution framing for the IQMS at induction and after that as a variable in the larger PA process that is developmental in orientation. As a campus manager noted, induction is an opportunity for the appraisal process to be presented to the lecturer as something that is ‘not to punish or police ... but it’s for ... developmental purposes’. Management must, in the words of

a campus head, 'sell that idea in that mind frame', and then 'people begin to understand that this is there to support so that they can improve'. If this vision of the PA process is successfully promoted, then this can contribute to (2), 'Lecturer perception of appraisal as a developmental opportunity'. This perception leads to positive feedback, by which the developmental orientation of the appraisal process is reaffirmed during induction. As one campus manager noted, 'there's a need for proper induction into why this is happening'. These elements constitute the positive virtuous loop.

If leadership does not continually present and reaffirm the appraisal process as developmental and/or this idea is not internalised by lecturers, the dynamic changes significantly. A narrow conception of appraisal emerges. And, without framing the appraisal as developmental, the PA process in general and the IQMS process more directly become seen as bureaucratic mechanisms for assigning lecturers to training. If lecturers' training needs are not met, as specified in their personal growth plans (PGPs), then the appraisal process loses its meaning. As one senior lecturer noted, 'it will take me maybe five years ... to be considered for such a course' as indicated in the PGP: '[T]here's just too much red tape ... to get to where you are supposed to get to in terms of development.' The whole process, then, becomes seen as perfunctory or 'punitive', for 'you don't feel as if whatever action you have taken is serving you'.

In this situation, the negative **Loop 4** becomes operative: 'The appraisal [is] regarded as lacking professional value.' This view leads, in turn, to a decline in (3), 'Trust in the integrity of the appraisal process', and to the 'Appraisal [being] completed primarily for compliance purposes'. As the same senior lecturer emphasised, filling in the IQMS then becomes a perfunctory action directed at receiving a 1.5% notch pay increase: 'the reason why people will mainly commit to doing it, then naturally you will get your pay progression If it wasn't for that 1.5%, a lot of lecturers wouldn't even bother to do it.' IQMS then becomes a check-box exercise, further reinforcing lecturers' perceptions that the IQMS and the PA processes more generally lack professional value, as they do not promote lecturer professionalisation.

Another crucial element here, as embodied in **Loop 2** and **Loop 3**, is the role of the PA process in recognising and rewarding lecturers. If (1) 'Senior and departmental leadership [are] committed to presenting appraisal as devoted to lecturer professionalism', then this, for those we interviewed, leads to the marshalling of institutional resources for the holistic development of lecturers and the development of a rewards system. At some colleges, 'the appraisal is an opportunity to give the credit' to 'the lecturers' who do 'amazing things'. When the appraisal is used this way, it contributes not only to lecturer recognition of the PA process as a developmental opportunity and trust in its integrity (as rendered in **Loop 2**), but also to a broader commitment by lecturers to the college and to the growth and the increasing professionalism of their colleagues (depicted in **Loop 3**). Furthermore, when the appraisal is viewed as not simply a check-box exercise, it can be experienced as a vehicle for openly giving and accepting constructive feedback, which, in turn, motivates lecturers

to invest in the further professional development of their colleagues. At some colleges, however, feedback is given inconsistently; consequently, these colleges do not develop a culture of growth in which lecturers are motivated to pursue improved teaching quality.

Link between PA and CPD

Table 3 captures the factors that have an impact on the relationships between the PA and the CPD of TVET lecturers through positive and negative feedback loops. The first column of the table depicts each variable. In the second column, the variable’s positive potential is depicted through a virtuous loop, while the third column draws attention to the possibility of a negative interaction between PA and its support programme. The personnel likely to be affected are presented in the last column. The variables identified as being relevant to this bilateral relationship are the following:

- Performance appraisal accuracy and fairness;
- CPD alignment with job responsibilities;
- CPD alignment with career goals;
- Feedback and mentoring by supervisors;
- Collaboration and peer learning;
- Reflection and self-assessment, and
- Industry or employer feedback, either personally or mediated by a supervisor.

TABLE 3: Causal loops, with positive and negative causal loops having an impact on the potential synergies between PA and CPD activities

Variables	Positive loop	Negative loop	Key interaction with:
Performance appraisal accuracy and fairness	Accurate and fair PA identifies specific areas for targeted CPD activities and raises lecturer confidence that the contribution of activities to their performance will be recognised. Improved performance and positive PAs prompt a cycle of growth and development for lecturers.	Inaccurate or unfair PA demotivates lecturers and reduces their commitment to CPD. Decreased effectiveness of CPD drives a cycle of dissatisfaction and disengagement among lecturers.	Supervisor

Variables	Positive loop	Negative loop	Key interaction with:
CPD alignment with job responsibilities	<p>Where CPD aligns with job responsibilities, the lecturer has a clear focus and purpose.</p> <p>Improved CPD positively affects competence, recognition and motivation of lecturers.</p>	<p>Misalignment between CPD activities and job responsibilities makes activities less relevant and meaningful to lecturers.</p> <p>This leads to reduced engagement and to stagnation in lecturer performance.</p>	Supervisor
CPD alignment with career goals	<p>When CPD activities align with lecturers' career goals, motivation can be enhanced. Improved performance through CPD positively affects future career progression opportunities.</p> <p>Lecturer and supervisor agree on the balance between developing current departmental lecturer skills and creating career progression opportunities that motivate continued lecturer engagement. The agreement may refer to a period longer than a single annual PA cycle.</p>	<p>Misalignment between CPD activities and career goals can result in decreased relevance and motivation.</p> <p>Lecturers may struggle to see the value in CPD efforts, leading to reduced engagement and to performance stagnation.</p> <p>The supervisor and lecturer need to find an appropriate balance between current needs for teaching skills in the department and potential for lecturer growth.</p>	Supervisor
Feedback and mentoring by supervisors	<p>Regular and constructive feedback and mentoring provide guidance and encouragement for lecturers.</p> <p>It adds value to the effectiveness of CPD's contribution to improving lecturer performance.</p>	<p>A lack of feedback or poor-quality feedback can hinder lecturers' progress.</p> <p>Without guidance, lecturers are less likely to correctly identify areas for improvement. They may not prioritise areas for urgent training appropriately. This can affect performance negatively, leading to suboptimal personal growth.</p>	Supervisor

Variables	Positive loop	Negative loop	Key interaction with:
Collaboration and peer learning	<p>Collaborative learning opportunities, including communities of practice or peer-to-peer knowledge-sharing, can enhance CPD effectiveness.</p> <p>This occurs through best practices, diverse approaches, the exchange of ideas to improve skills and knowledge collectively, and the exploration of collaborative teaching.</p>	<p>Having few opportunities for collaboration – either formal or informal – limits the scope for lecturers to enrich their own and collective practices.</p> <p>CPD initiatives that are less impactful limit growth and reduce the inclination to engage in further CPD.</p>	Lecturer together with peers
Reflection and self-assessment	<p>When lecturers work to enhance their self-awareness and adopt reflective practices, they open up opportunities for professional growth. These are opportunities to identify areas for improvement and to set meaningful goals towards enhanced performance.</p>	<p>Undeveloped capacity for self-reflection limits lecturers' ability to recognise their strengths and to acknowledge areas for development.</p> <p>Without practising regular self-reflection, lecturers are limited in their ability to become fully capable, self-improving teaching professionals.</p>	Lecturer personal commitment
Industry or employer feedback – personally or mediated by supervisor	<p>Insights into the skills and knowledge required in industry enhance lecturers' skills and knowledge, leading to the increased relevance of their teaching to students and better prospects for graduate employment.</p>	<p>Limited external feedback or industry engagement can contribute to a knowledge gap or misalignment between lecturers' skills and industry needs.</p> <p>The outcome is less adequate student graduate preparation and reduced employability.</p>	Lecturer relationship with industry or employers

Overarching observations

Applying a CLA tool to the TVET lecturer PA and CPD system has enabled us to identify several inputs or interventions that could improve the internal dynamics of the system that – by shifting feedback loops in the right direction – contribute to a better experience for all the participants. This outcome, in turn, improves lecturer quality and, ultimately, student success in the labour market.

Recognition and rewards

Recognition has an intrinsic effect because it emphasises the value of a lecturer's work beyond extrinsic reinforcement; it also has a psychological impact in that it boosts an individual's sense of self and their motivation, which can engender pride and encourage purpose in further professional achievements. Recognition also has a broader effect in fostering a positive culture and, furthermore, it can enhance a sense of community that is able to feed into collaborative activity. Lecturers will benefit not only from management recognition, but also from peer recognition, and so the means of achieving this need to be devised.

Student feedback

Student feedback is a valuable area of engagement because it can encourage a sense of student belonging to a community that is aligned with an institution's aspirations for quality performance and student success. More importantly, student feedback provides information on dimensions of a college's provision of multilevel service delivery. Regular-feedback mechanisms or channels (such as surveys, focus groups, workshops (including online and in-person interactions)) can help a college to assess the effectiveness of its programmes and to make the necessary adjustments.

Appropriate emphasis on vocational purpose of teaching and learning

A perception exists among lecturers that the IQMS document does not cater adequately for the vocational aspects of the curricula or teaching. Too much emphasis is said to be placed on the pedagogical aspects of teaching (such as the way the lecturers use their teaching and workshop resources and interact with students) and insufficient on the pedagogical tactics that lecturers could use to impart on-the-job, occupation-specific technical skills. The TVET sector is, however, predominantly an occupation-based sector, with many lecturers being artisans who are then given facilitated training on appropriate teaching practice once they join the staff of a college. They therefore do not come in as trained teachers. It is, however, now mandatory that all lecturers have a teaching qualification, although this has been met with some resistance as it requires quite a change of mindset – although less so from 'younger staff members, who are quite eager' to upgrade their teaching skills.

Responsiveness and feedback during the annual cycle of planning and procuring training and development opportunities need to be improved

The lack of follow-through in putting into action training requests put forward in lecturers' PGPs is seen as a reason for lecturers not being motivated to take the PA seriously as a document that unlocks concrete opportunities for relevant professional development. A further consequence is that lecturers feel they are not being heard. A critical uncertainty in planning and providing training lies in understanding the roles of lecturers and their supervisors and/or HoDs, the way the HR management and procurement sections in the college head office finalise the desired training requests, and the extent to which there can be consultation about these processes. There is also a perceived lack of support for lecturers' further studies.

Lack of access to work-integrated learning

A concern expressed by some lecturers in trade and technical occupations was their limited access to work-integrated learning (WIL). This concern contributes to the overall impression among lecturers that their colleges demonstrate limited responsiveness to their needs despite the longstanding policy emphasis on WIL as a pillar of lecturer development and a means of aligning lecturer performance with the demand for industry skills. This apparent contradiction between policy direction and limited implementation leaves lecturers feeling frustrated, even ignored, by TVET governance.

Accountability practices are weak

A college is the unit according to which qualifications are awarded and it is therefore accountable for the overall quality and pass rates of learners as a whole and also by programme and certification. Lecturers are held accountable within the boundaries of this process. A campus manager explained that college programmes which finish low in national rankings while their lecturers claim to have scored high in the PA would be subjected to queries. This means that all PA scores 'must be linked to evidence'. For some colleges, this requires a meeting with senior lecturers, HoDs and lecturers to discuss the reasons for awarding certain scores. This therefore motivates the appraisers to engage in meaningful feedback with the lecturer in question regarding their appraisal mark so that the correct score can be agreed on. And if the score is low after such consultation, then corrective measures such as additional training need to be implemented.

Digitisation of appraisal processes will be more efficient

There is evidence that colleges are moving towards digitising their PA processes and documentation because this can produce substantial savings in time and administrative effort for the participants. The main advantage is that appraisal and evidence documents are shareable and accessible to both supervisors and lecturers in the cloud. One college has partly

redesigned the PA document to make it easier to complete electronically. Note that these improvements support the in-person appraisal meeting and do not replace it. The emergent digitisation process gathered pace during the COVID-19 pandemic when staff were home-based and a nationwide initiative aimed at digitising the appraisal process by initiating the creation of a cloud for each college which would help to make the process more efficient.

Lecturer (or staff) well-being programmes are necessary

Some colleges have undertaken initiatives to alleviate the professional and personal pressures on lecturers. Such initiatives may contribute to lecturers being aware that the institution is concerned with their well-being. They can include:

- programmes and professional services to support lecturers' mental health (e.g. counselling and relaxation and mindfulness programmes);
- stress-reduction and stress-management workshops; and
- health and wellness programmes such as fitness classes, wellness check-ups and nutrition advice.

Capacity-building programmes for lecturers and managers

Based on the outcome of this research, an opportunity has arisen to begin *implementing capacity-building programmes for lecturers and managers*. These are aimed at enhancing their understanding of the value and implications of using CLA to support better-informed institutional decision-making processes at a personal or an institutional level. Lecturers could be motivated and empowered to contribute actively to the process; moreover, the quality and accuracy of a CLD would benefit from such broader participation.

Conclusion

This research has identified several leverage points where specific TVET colleges have taken the current system, with all its limitations, and have proactively enhanced its quality. For example, one college has built supportive overarching organisational cultures that reinforce the professional development of TVET lecturers and, in addition, reflect their concern beyond the PA towards fostering the personal growth of each individual holistically by the introduction of wellness programmes.

We have demonstrated that the relationships between PA and CPD can be made more explicit through the CLA process. For instance, the research observed a key weakness: that the PA gives greater prominence to the pedagogy of theory subjects than to the pedagogy of skills-based instruction. This inequity, lecturers from a technical background experience as diminishing their expertise. Critically, the IQMS is perceived as time-consuming, overly bureaucratic, and characterised by limited induction and preparation and poor communication. These and the other insights discussed above are generated via the CLA, which provides greater rigour

and clarity that more traditional qualitative methodologies alone may not have been able to generate. In turn, these findings provide a solid foundation for further development by incorporating further quantitative data to assess the strength and impact of particular causal relationships with the aim of improving the overall performance management system for South African TVET lecturers.

A further iteration of this research could provide an important opportunity to advance our understanding of the complex dynamics of TVET lecturer PA and CPD systems. This could be achieved by undertaking further iterations of the causal loop analysis to enable insights to be developed into the causative mechanisms that are so valuable to policymakers.

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What is a ‘quality TVET lecturer’? Problematising the concept of quality in vocational education

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ABSTRACT

Notions of ‘quality’ in technical and vocational education and training (TVET) and the ‘quality TVET lecturer’ are often referred to in policy and public discourse in South Africa but are rarely defined. This leads to only partial identification of what is necessary for driving up quality. This article reports on a review and survey of how the ‘quality TVET lecturer’ is understood in academic literature and public and policy discourse in South Africa. Through the Bourdieusian lens of fields, we identify the quality TVET lecturer as a player in two fields – education and the economy, which have distinct identities, rules and power dynamics. We argue that knowledge, skills, expertise and qualifications from both the education and the economic fields are important. Therefore, attempts to improve quality by focusing on the competence and commitment of TVET lecturers according to their teaching is likely to have a limited impact on TVET lecturer quality. While the model presented is based on work in South Africa, this framing of quality is relevant to Sustainable Development Goal 4 and the challenge faced by many TVET systems of linking TVET to industry.

KEYWORDS

TVET lecturers; quality; Bourdieu; fields; South Africa; SDG4

Introduction: Problematic notion of quality

The notions of 'quality' in technical and vocational education and training (TVET) in South Africa and of a 'quality TVET lecturer' are often referred to in policy and public discourse. For instance, the policy on professional qualifications for lecturers in TVET sought to contribute to 'the availability and development of quality lecturers for the TVET sector by putting in place a set of suitable higher education qualifications ...' (DHET, 2013:7). The National Plan for Post-School Education and Training (NPPSET) refers to the government's vision of building a 'quality post-school system' and 'improving lecturer quality' (DHET, 2023:24, 32). The recent TVET Research Programme of the Department of Higher Education and Training (DHET) included more than 30 research projects, one of which focused specifically on the quality of TVET lecturers (Wedekind et al., 2024). As is evident from the foregoing policy documents, the term 'quality' is frequently used but rarely conceptualised.

The importance of 'quality' TVET and TVET lecturers is also evident beyond South Africa. The African Union (AU) described the delivery of quality TVET as being dependent on the theoretical, technical and pedagogical skills of the TVET lecturer (AU, 2007:9). Moreover, the International Commission on the Futures of Education stated that teachers are the most significant factor in attaining and delivering educational quality (International Commission, 2021:22). In addition, a UNESCO–UNEVOC study on trends in future-oriented, 'high-quality' TVET systems focused frequently on the quality training and support required by TVET teaching staff, particularly through industry exposure and private-sector partnerships (UNESCO–UNEVOC, 2020:22, 36). This notion of 'quality TVET lecturers' is often associated with student outcomes as measured by qualifications and skills and the importance of their relationships with industry. However, the challenge – to which we turn in this article – is that there is no clear consensus or definition of what is meant by a 'quality TVET lecturer', which only serves to undermine attempts to identify and improve quality.

The word 'quality' is a noun when used in reference to a person: 'excellence of character, good nature, virtue' (OED, 2024); or 'the special feature or characteristic' of a thing; it also functions as an adjective: 'of high quality, excellent' (OED, 2024). The term is also used and defined differently in various contexts. Quality management systems use process-based approaches to manage, improve and demonstrate organisational commitment to quality (ISO, 2024). In agriculture, 'quality' can refer to the attributes of a fruit or vegetable and the different needs and wants of customers (Shewfelt, 1999). In healthcare, 'quality' can denote the optimal balance between possibilities realised and a framework of norms and values constructed in interactions between people (Harteloh, 2003). Here 'quality' is linked to the internal dynamics, norms and values of a system, organisation or process which interact with external contexts, conditions, norms and interests. In TVET policy, there is often an assumption that qualifications are a proxy for such internal–external dynamics (DHET, 2013; DHET,2023).

There are multiple expectations of the quality TVET lecturer *internally* regarding the educational or pedagogic processes of teaching, curriculum application and student

development in the classroom (Rauner, 2007; Gamble, 2013; Wheelahan, 2015; Mulder, 2017). Externally, a primary objective is to prepare young people for the world of work, bridging the gap between TVET and the labour market (Republic of South Africa, 2014). This external quality is often promoted through work-integrated learning¹ (WL) both for students and to ‘improve the quality of lecturers’ (DHET, 2023:68,73). The 2030 National Development Plan (NDP) also framed TVET as helping to tackle societal challenges through its role in economic development, tackling poverty and a more knowledge-intensive economy (National Planning Commission, 2012:28,48). Similarly, the DHET policy on TVET lecturer qualifications states that social and economic growth ‘relies heavily on the development and maintenance of a viable, responsive and effective TVET sector’ (DHET, 2013:3). Such statements reflect increasing expectations about what TVET can deliver in transforming societies and domestic economies and the resultant implications for the TVET lecturer (Barnett, 2006; Papier, 2011), who faces both the internal world of TVET and the external world of work.

South African scholars recognise the problem of poor-quality TVET lecturers in South Africa (Blom, 2016; Wedekind, Watson & Buthelezi, 2016; Buthelezi, 2018; Blom et al., 2022). In part, this is because few TVET lecturers possess the perceived ideal combination of attributes alluded to in policy documents: significant industry experience, good academic qualifications and sound pedagogical knowledge (DHET, 2013; DHET 2023). TVET lecturers have also faced major challenges, including: curriculum reforms; institutional mergers; massive growth in student enrolments; low salaries; issues regarding morale and rates of staff retention; and inadequate equipment and resources – despite recapitalisation efforts. Given these challenges, to understand and conceptualise quality fully it is necessary to consider not only questions of pedagogic practice, professional identity and qualifications, but also factors such as the institutions themselves, industry linkages and power relations. For this purpose, we adopt a sociological perspective to frame our empirical approach to conceptualising the quality TVET lecturer in relation to the wider socio-economic dynamics of TVET.¹

If quality is assumed and not explicitly defined, it is difficult to understand and identify poor and/or low quality or to design appropriate interventions and policy instruments that support and improve the quality of TVET lecturers. In what follows, we present a sociological framework based on the Bourdieusian concept of fields. Bourdieu viewed the social world as a field of power comprising multiple relatively autonomous fields, where fields each have distinct rules, struggles and positions of power and are subordinated to different degrees to the economic field (Bourdieu, 1985). Bourdieu’s concept of a field is different from that of a broad area of academic study such as the field of education or medicine, although the

¹ We note the relevance of quality assurance processes and lecturer development programmes in South Africa. The theoretical work here complements recent work focused more specifically on the measurement and professionalisation of TVET lecturers. See, for example, these projects: Quality of Teaching and Learning at TVET Colleges; Towards the Professionalisation of TVET Lecturers; and Toward a Performance Management Framework for TVET Lecturers in South Africa, in the DHET Research Programme on TVET <<https://www.dhet.gov.za/SitePages/TVET-Research-Programme>>.

Bourdiesian logics of power and a tacit sense of knowing how to play the game could indeed be applied to academic fields. Following the Bourdiesian concept of field, individuals enter the field of education (and the subfield of TVET with its own orthodoxy) with the ability to think, act and respond to the opportunities offered. However, they do so with unequal amounts of capital, such as inherited wealth or family connections and habitus which may or may not resemble the dominant structures and values of that field (Grenfell & James, 1998). Therefore, from Bourdieu's conceptualisation of education, TVET as a subfield of education is a space which promotes the idea (or illusion) that academic capital and/or market-compatible skills can be gained and converted into employment in the economic field (Black, 2022; Ronnie, 2023).

We now present an empirical review of the ways in which the quality TVET lecturer is understood in South Africa by drawing on three sources: the academic literature, policy discourse and a survey of key TVET stakeholders. We then discuss this critically through the Bourdiesian lens of fields. This lens provides a more institutional, systemic level of analysis of the quality TVET lecturer as being co-located in two fields, TVET and the economy. In conclusion, we summarise our sociological conceptualisation of TVET lecturer quality and discuss the implications for the literature, policy and professional development.

Bourdieu, fields and TVET lecturers

To make sense of the multifaceted dimensions associated with quality TVET lecturers, we draw on the work of French social theorist, Pierre Bourdieu. Bourdieu's work was influential as part of a wider reinvigoration of the sociology of education in the 1970s. His concepts of cultural capital, habitus and field have become central to the study of education over the past half-century. Bourdieu's concepts provide a language of description that enables us to discuss the dynamics of quality and identify the key domains in which the work (and habitus) of a TVET lecturer reside. As discussed later, this framing builds upon a nascent body of South African literature that is applying Bourdiesian analysis to TVET in South Africa.

In this article, we cannot engage in a detailed discussion of Bourdieu's work and his contribution to education research. However, we are conscious that his concepts have at times been misappropriated and used in isolation. Grenfell and James (1998:16) argue that concepts such as habitus and field are often used without reference to their theoretical basis and sometimes in ways which indicate a misunderstanding of them. Scholars have explored the methodological implications of Bourdieu's ideas and have argued that researchers should ensure that they do not use Bourdieu's concepts superficially – like 'hairspray sprayed across an academic text' (Reay, 2004; Reay, 2019). We seek to guard against this by recognising the context in which Bourdieu's work originated and the relationship between Bourdieu's concepts of field and cultural capital and habitus. These three key concepts locate the TVET lecturer in the social conditions (systems, history and discourses) in which power relations are produced, reproduced and contested (Emirbayer & Johnson, 2008; Black, 2022).

Bourdieu developed his ideas through empirical anthropological studies between the late 1950s and the early 1990s, informed by his family background, education and work in France, and later as a conscripted soldier in Algeria. Therefore, his ideas emerge from specific times and places and need to be suitably modified for different contexts. Bourdieu sought to develop a theory of practice that is robust enough to be objective and generalisable, yet one that also accounts for individual, subjective thought and action (Bourdieu, 1990; Bourdieu, 1993; Grenfell & James, 1998). Bourdieu's work was in part a reaction to the overly deterministic nature of Marxist understandings of the social world that ultimately reduced all aspects of social organisation to the economic field. While recognising the importance of the economic field, Bourdieu's work tried to understand the role that other fields play in society. Instead of understanding everything as a class conflict, Bourdieu argued that social space is multidimensional (Bourdieu, 1985).

Here we are particularly concerned with the Bourdieusian concept of field. A field is a structured system in which individuals, institutions and groupings all exist in relation to one another (Grenfell & James, 1998:16). Fields each have different power structures, hierarchies of influence, logics and habits of practice due to their relational nature with power (expressed as forms of social, cultural or economic capital) and embodied habitus – the minimum amount of knowledge, skill or talent required to be accepted as a player (Bourdieu, 1993; Lingard & Christie, 2003:320; Emirbayer & Johnson, 2008). As Bourdieu stresses,

the whole history of a social field is present in a materialized form – in institutions ... – and in an embodied form – in the dispositions of the agents who operate these institutions or fight against them (Bourdieu, 1985:738–739).

Therefore, fields operate with distinct logics, rules, boundaries and forms that reflect the struggles and power relations within that 'field of play' over time.

The concept of a field is part of a wider theory of practice, one that identifies social spaces, the practices that constitute a field and the positionality of individuals within that field. For the researcher, these structural positions and their generating principles can either be located or mapped (Grenfell & James, 1998:16). In applying the concept of a field to TVET lecturers, we also turn to recent work applying Bourdieu's work to the TVET sector in South Africa. Ronnie (2023) drew upon Bourdieu's concepts of field, *illusio* and institutionalised cultural capital to understand the barriers that prevent TVET colleges from supporting graduates to convert the academic capital of their vocational qualification into employment. One of the key recommendations was the pivotal role that actors outside of TVET – specifically industry – can play in ensuring a more inclusive and meaningful TVET sector. They can do so not least by including industry players in integrated policy on, and strategy processes regarding, skills and TVET that lead to more relevant curricula for TVET colleges to offer their students. Nzembe (2018) also focused on educational outcomes in a TVET college in South Africa. Through the lens of cultural capital, Nzembe found that sociocultural factors such as student preparedness for the TVET curriculum, the language of instruction, approaches to

assessment, academic support programmes and educational resources all had the potential to 'make or break students' chances' of accessing and succeeding in their academic programmes (Nzembe, 2018:40).

Most relevant to the objective of this article is the study by Black (2022). Black used the relational nature of Bourdieu's key concepts as a framework for analysing the way or ways in which TVET is positioned in relation to both basic education and broader political economic forces. This, he writes, entails juggling issues of quality in the classroom while having to articulate with multiple other fields. In Black's representation (see Figure 1), the field of TVET (as a subfield of education) is shaped by the different goals, logics, practices and power dynamics that characterise the fields of education and the economy. These fields reside within the broader field of social power, where factors such as race, class, language, religion, gender and geography all shape opportunities and experiences in life and TVET (Black, 2022:246).

Black notes that within the subfield of TVET the position of a college is complex: it is often required to function simultaneously as a provider of post-school education for adults and as an alternative education route for students who have been alienated by mainstream education (Black, 2022:242). Beyond that, against the backdrop of the broader field of social power, the TVET college also supports the instrumental acquisition of skills and recognised certificates that can be traded for future economic and cultural capital (Black, 2022:245). This, in turn, means that TVET and TVET colleges are interconnected with the logics of the economic field and the subfields of industry with their distinct industry trends, standards and changing demands for which they are attempting to prepare students (Black, 2022:246).

Whereas Black (and Nzembe and Ronnie) does not focus specifically on TVET lecturers or lecturer quality, Black's study underscores (as do those of Nzembe and Ronnie) the value of a sociological approach for situating the notion of TVET lecturer quality within the socio-economic and institutional dynamics of the TVET system. In Figure 1, the concept of field illuminates the interconnected nature of TVET with other fields, but immediately points to the problem of understanding and defining the quality TVET lecturer: In which field does the TVET lecturer reside?

Naturally, one might position a TVET lecturer in a TVET college. However, as alluded to in policy documents, TVET lecturer quality is also linked to the field of the economy. Black visualises the field of the formal economy and the labour market as industry subfields. In a Bourdieusian sense, these denote different hierarchically organised workplaces and occupational fields (within the economic field and the broader field of social power), each with its own distinct forms of capital (in the form of qualifications or networks) and industry-shaped habitus (Runcieman, 2018). We note, of course, that much work also occurs in the informal economy and in other fields, but for the purposes of framing TVET lecturer quality in public TVET we begin our analysis with Black's framing of the fields of formal education and the formal economy. To begin to understand quality in this context, we first turn to the ways in which the research literature discusses quality lecturers and then report on our empirical data.

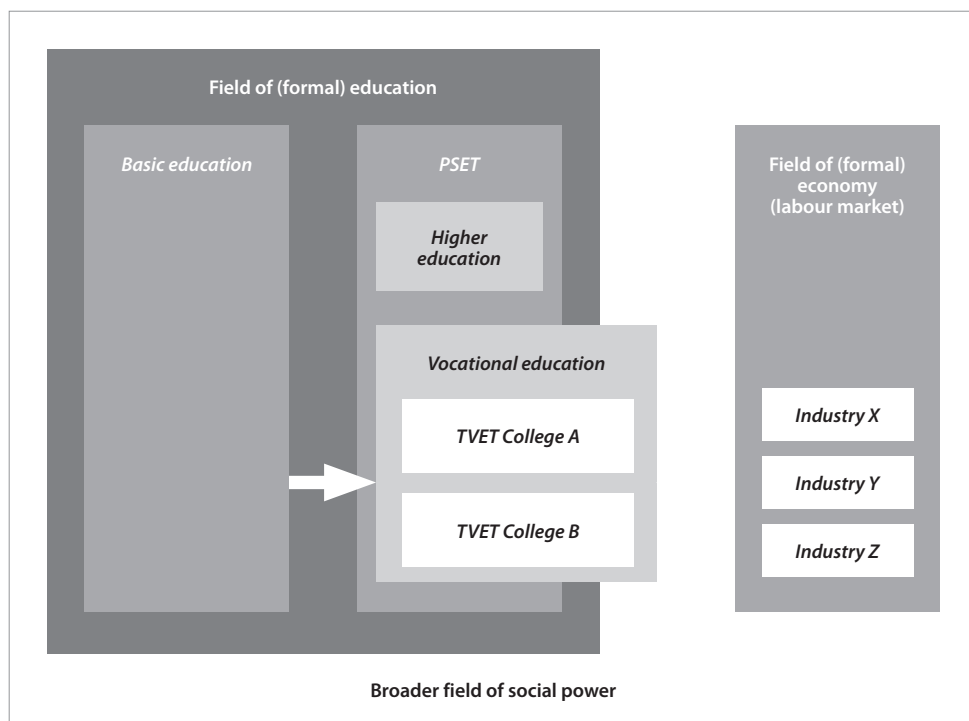


FIGURE 1: Relationships of vocational education with other fields that shape its goals, logics and practices (Black, 2022:247)

Understandings of ‘quality’ TVET lecturers

For the purposes of our research project, we first identified the ways in which the quality TVET lecturer has been defined and conceptualised in the South African academic literature. We searched online libraries such as Web of Science (Clarivate) and Google Scholar using keyword strings² on the theme of quality TVET lecturers in South Africa, with 59 articles emerging from our review. To understand how ‘quality’ and the quality TVET lecturer were discussed and conceptualised, we collated the following information in an Excel database:

- Does the article **define** quality (yes, no, partly, unclear)?
- **Number** of times the word ‘quality’ is used.
- Is **TVET lecturer quality** discussed and, if so, how?

2 TVET lecturer quality, TVET South Africa, TVET teacher education, teacher development in TVET, teacher learning in TVET.

'Quality' frequently used but not defined in the literature

The literature survey showed that, while there are differences in research contexts, numerically, the term 'quality' is used frequently but in relation to a variety of different aspects of TVET rather than about TVET lecturers per se. For example, studies have been conducted on the quality of the curriculum (Masoabi & Alexander, 2021), the quality of educational processes (Wedekind & Mutereko, 2016) and quality work-integrated learning (WIL) (Mesuwini & Mokoena, 2023) work-integrated learning (WIL). Most of them, however, did not define 'quality' in a comprehensive manner and very few directly mentioned the term 'quality TVET lecturers'.

Most of these studies presented a vague picture of the quality TVET lecturer. Out of 59 studies, 22 did not use the word 'quality' or engage with the notion of 'TVET lecturer quality'. Of the remaining 37, only a few referred directly to the notion of TVET lecturer quality – for example Mesuwini, Thaba-Nkadimene and Kgomotlokoa (2021) and Mesuwini et al. (2023) specifically to establish the nature of their learning and determine how the lecturers understood their learning. However, since the launch of this WIL initiative, what these lecturers learnt, and how they understand their learning has not been researched. This study sought to investigate the nature of learning of these lecturers. The study was conducted in three TVET colleges in KwaZulu-Natal (KZN, in reference to the need for professional qualifications, Papier (2021) on quality teachers with the necessary abilities and pedagogies to prepare students for the workplace in a changing world, and Van der Bijl (2021) on the critical function of industry experience in improving the quality of TVET lecturers.

Quality: Associated with knowledge, competencies and WIL

Whereas the phrase 'quality' was used but rarely defined, it was possible to identify key assumptions underlying the knowledge and competencies of the quality TVET lecturer. Many studies confirmed that both theoretical and practical subject knowledge (underpinning a specific occupation) was necessary in order to be a proficient TVET lecturer (Gamble, 2013; Wheelahan, 2015; Van Der Bijl & Oosthuizen, 2019). *Pedagogical knowledge* was regarded as something that helps quality TVET lecturers to cope with diverse student needs (Yassim, Rudman & Maluleke, 2019), combined with curriculum and assessment processes that build occupational competence and prepare students for the workplace (Papier, 2021; Teane, 2021). Finally, up-to-date industry knowledge is also regarded as critical to preparing students for employability (Wedekind & Mutereko, 2016; Papier, 2017). But whereas subject and industry knowledge were associated with notions of quality, much research focused on pedagogical knowledge, suggesting that this is regarded as particularly important for enhancing the quality of TVET lecturers.

From the studies in our analysis, various competencies are also associated with quality, though the use of the concept was highly diversified. For instance, TVET lecturer quality was associated with student-centred competencies related to student well-being, inequality and

post-apartheid social justice (Gaffoor & Van Der Bijl, 2018; Yassim et al., 2019). Training, professional qualifications and continuing professional development (CPD) that build TVET lecturer competencies are also important (Van Der Bijl & Oosthuizen, 2019; Blom et al, 2022). TVET lecturer quality is also associated with WIL, that is, those competencies learned in the workplace that help to bridge the gap between education and work for students (Van der Bijl & Taylor, 2016; Van der Bijl, 2021) and formalised professional development for TVET lecturers (Govender & Dhurumraj, 2024).

Finally, many studies also refer to low-quality TVET lecturers as one of many challenges facing the sector. Studies note the tension between idealised perceptions of the TVET lecturer and, in contrast, factors such as a restrictive assessment culture, systemic weaknesses and persistent inequality (Allais, 2012; Govender & Dhurumraj, 2024). It is notable, then, that, across the published studies reviewed, discussions about the quality of TVET lecturers consistently lacked a consideration of the positioning of the TVET lecturer in the wider socio-economic system.

Overall, the literature showed that multiple knowledges, competencies and professionalisation routes might be regarded as important to forming a quality TVET lecturer. As stated at the outset, though, the notion of ‘quality’ is frequently used but rarely defined, reflecting a lack of clarity about what is meant by quality in TVET and, more specifically, the quality TVET lecturer. In the second stage of our empirical analysis, we conducted a survey to explore perceptions of TVET lecturer quality among key stakeholders.

Public and policy perceptions of the quality TVET lecturer

To build on the insights that emerged from our literature review, we conducted a survey designed to help us understand the perceptions of TVET lecturer quality among key stakeholders. The survey was grounded in a framing of quality presented in policy discourse. The respondents were asked to rank a series of 10 statements in terms of what was most and least important for quality TVET lecturers (see Figure 2).³ As an organising framework for the survey statements, we used the knowledge mix outlined in the 2013 DHET Government Gazette policy on professional qualifications for lecturers in TVET. This policy refers to the necessity for TVET lecturers to be specialists in their disciplines and specialist teachers who understand both the context in which they are working and the learning needs of a diverse range of students (DHET, 2013:13). Here, competent pedagogic practice is viewed as a combination of integrated and applied knowledge forms that do not exist independently of one another (DHET, 2013:9–11).

3 We conducted a pilot study during the period October–December 2022 and in response we reduced the statements from 12 to the 10 listed here and dealt with the technical difficulties of ranking the 10 statements. The official survey was conducted between January and July 2023.

A high-quality TVET lecturer:

- Applies the national TVET curriculum to the local context;
- Creates a learning environment that replicates workplace practices and behaviours;
- Equips TVET students to be lifelong learners;
- Explains the theory behind workplace practices;
- Has relevant workplace experience and qualifications;
- Includes social and environmental issues in their TVET teaching;
- Makes sure that 'what' they teach and 'how' they teach are up to date and relevant;
- Organises TVET teaching and assessment to support the learning needs of individual students;
- Organises (WIL) or workplace experiences; and
- Teaches TVET students study skills and basic life skills.

FIGURE 2: Survey statements – rating a high-quality TVET lecturer

After this quantitative ranking exercise, two qualitative follow-up questions were posed to help us understand the respondents' perspectives on the most important characteristics of a quality TVET lecturer. We recognised that key actors in the TVET system (TVET institutions, the private sector and government) might have differing expectations of quality as it pertains to TVET lecturers; therefore, the survey targeted a wide range of participants in South Africa, including TVET lecturers, college principals, academics, policymakers, TVET students and industry.

Broad understanding of quality

More than 81% of the respondents rated all 10 statements as being either important or most important (see Figure 3). This indicated a perception that the notion of the 'quality' TVET lecturer includes a wide range of topics and responsibilities. One respondent (a TVET lecturer) commented:

They are all important; [it's] just not possible to do all the above in [the] time frame given in class.'

In terms of what was rated most important, the high-quality TVET lecturer 'applies the national TVET curriculum to local contexts', ensures that 'what they teach and how they teach are up to date and relevant' and explains the 'theory behind workplace practices' while creating 'a learning environment that replicates workplace practices and behaviours'.

‘A high-quality TVET lecturer’:

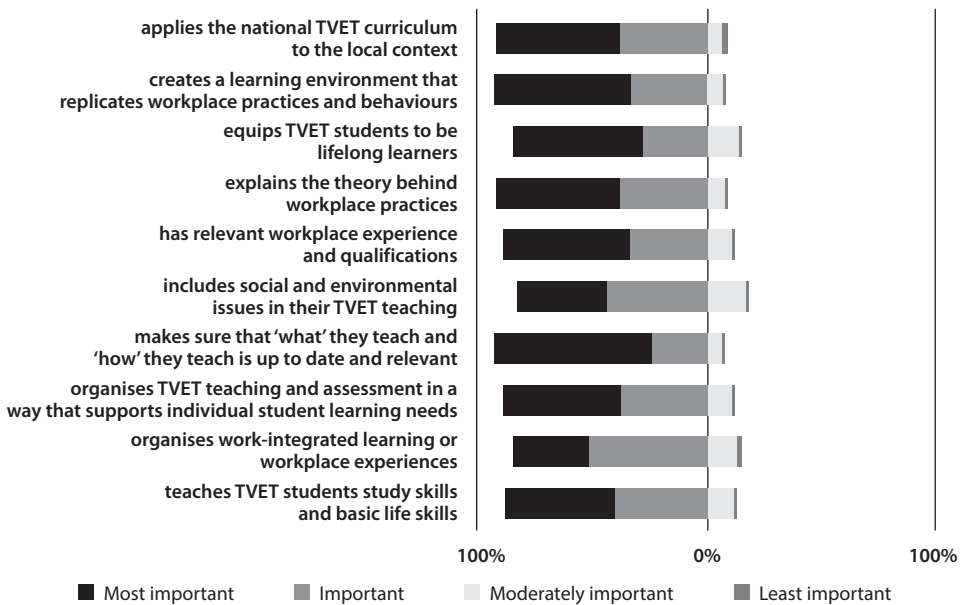


FIGURE 3: ‘Most’ to ‘least’ important ratings

Dedication of the quality TVET lecturer

The respondents were also given the opportunity to explain why they rated statements as ‘most important’. The primary theme among those who responded was the connection between lecturer and student and an ability to identify and manage different student learning needs:

A lecturer who takes time to understand student backgrounds, who plays a parental role, and skills and knowledge of [the] workplace. [TVET lecturer]

She uses blended learning to the maximum of her capabilities and still finds innovative ways to teach the content. She stays relevant and up to date with the world of work with resources and examples. [TVET college leader/manager]

Quality was associated with equipping students for the realities of the workplace, often by being connected to industry with relevant industry skills, knowledge and expertise:

Vocational education is complex and needs a dynamic lecturer who is engaged with his/her material, learners and workplace. [Policy/civil servant]

Lecturers need to be engaged and exposed to industry practices as much as possible. [TVET college leader/manager]

The narrative responses conveyed the sense that quality was not just about qualifications and the curriculum. The respondents referred to TVET lecturers who went beyond the call of duty and who were dedicated and passionate despite being confronted by overwhelming challenges and resource constraints:

Dedicated to ... [the] task – not the highest qualified but keeps an eye out for new technology and new developments in the industry that the students are being trained for. [Academic/research]

Even ... [with] no resources ... [they care] about students – that they get quality education that will equip them for the working environment. [TVET lecturer]

Finally, the survey did not include questions related to factors that undermine or hinder the quality TVET lecturer because we felt that such a focus was unlikely to yield new insights about the challenges facing TVET and the quality TVET lecturer. However, when participants were asked if there was 'anything else' they would like to tell us about quality TVET lecturers, many cited challenges such as the lack of resources, poor-quality students, ineffective recruitment practices (including patronage) and the need for industry connections:

Lecturers need to be educated or trained about the new technology in industry and include it ... [in] their curriculum so that learners can be relevant in industry. [Policy/civil servant]

Work-based training must be ongoing to keep up with relevant and up to date industry trends/4IR/AI technology. [TVET lecturer]

The respondents also asked that this research communicate to DHET that lecturers 'do care', that they are 'doing the best they can with limited resources' and that they are desperate to see the TVET system improved.

Summary

Our analysis of the literature showed that the term 'quality' is used frequently but that most papers did not define 'quality' or the quality TVET lecturer. It was, however, possible to identify common assumptions in the academic literature and key policy documents which emphasised the need for quality TVET lecturers to be professionally qualified and equipped with subject, industrial and pedagogical knowledge while at the same time possessing the competencies to satisfy students' needs and the demands of the workplace.

In the survey responses, a wide range of topics and responsibilities were linked to the notion of quality, including the curriculum, workplace knowledge that is theoretical and locally relevant, WIL, and an emphasis on empowering the students – despite the

significant challenges. Across our dataset, theoretical, practical and pedagogic practice (internally) within the classroom and external connections to workplace and industry were seen as important.

In the remainder of this article, we consider these wide-ranging perceptions of what it means to be a quality TVET lecturer through the Bourdieusian lens of fields.

Discussion: Thinking in terms of fields

Field of education and TVET subfield

From the conceptual perspective of fields, the dominant field within which the TVET lecturer is located is the field of education. It comprises both formal and informal education components spanning a person's life course, but it is discursively dominated by the formal system that prioritises young people in schools and various forms of post-school activity, including TVET.

Within the field of education, discourses about education focus on learning and teaching processes and relationships, with conceptual languages focused on pedagogy, curriculum, assessment, didactics and so on, and also on the systemic arrangements that facilitate these processes in various settings. TVET lecturers are expected to master such educational knowledge if they are to practise effectively in this field. The literature review and survey both demonstrate that the notion of TVET lecturer quality is directly associated with good general pedagogic practice such as lesson planning, assessment techniques and the use of educational technology, which suggest that the TVET lecturer is primarily located in this field.

As a subfield of education, TVET shares many of the characteristics of the superordinate field but is distinguished by a specific purpose: to prepare students for the transition to, or within, the separate field of the economy (UNESCO–UNEVOC, 2020; Black, 2022). This focus on the world of work and preparing students for the workplace suggests that a quality TVET lecturer requires skills that are distinct from the general education habitus and skills: the literature and our survey refer to specific TVET pedagogies linked to work, particularly WIL. For TVET lecturers, this distinct feature of TVET requires experience (and often relevant work-related qualifications) linked to the field of the economy. To understand this connection to the field of the economy, it is necessary to explore the distinct dynamics of that field.

TVET lecturers and the field of the economy

The field of the economy is complex, consisting of many subfields and institutions, with the human activity of work at the core. The dominant discourses focus on work arranged in jobs, often defined as occupations, carried out in various public and private organisational settings. There is

also increasing recognition of the importance of the informal economy and unpaid work such as childcare and domestic labour. However, the TVET subfield is generally expected to prepare students for the formal part of the economy and for specific occupations and occupational tiers.

Distinct knowledges, competencies and practices (often uncodified) are tied to occupational activities in workplace settings. Such knowledges might be generated informally through communities of practice and formally through processes which vary from setting to setting (e.g. from firm to firm); they are therefore usually best learned through practice. For TVET lecturers to prepare learners in the field of education for the transition to occupations in the economic field, they need to master such knowledges.

Mastering knowledges in the field of the economy might be achieved if TVET lecturers are experienced in their chosen occupation or have developed expertise through forms of simulation of work activity such as in training facilities. However, because activities in the economic field are constantly changing, it is not sufficient simply to build up knowledge of the economic field and then move back to the education field. From a fields perspective, the notion of having a 'connection' to industry or bridging the gap between the college and local industry is not the same as actually being in the field. To be a player in a field, one has to maintain the habitus and cultural and social capital of the field and not simply be connected to it. This points to our key argument regarding the notion of quality: the quality lecturer must necessarily be able to move between the two fields.

Building upon what is known from the literature, public or policy assumptions and our own analysis of fields, it is possible to identify quality and, in particular, the quality TVET lecturer as residing in two distinct fields. The survey statements and the literature emphasise a broad range of competencies that locate quality within the fields of education *and* economy. In the classroom (in the TVET subfield), this includes competencies related to understanding and responding to student mental, emotional and learning needs while recognising the impact of wider socio-economic histories, particularly the ongoing legacies of apartheid. Industry knowledge and familiarity with the demands of business and industry are also critical to equipping students for the workplace. In part, this refers to the ability of the TVET lecturer to embody the habitus and forms of capital of a workplace (in the economic field) in order to assist the TVET student to acquire the necessary habitus and capital.

Quality is playing in two fields

The concept of field provides a metaphor for describing the positioning of a TVET lecturer in a particular context, and a language for describing how that context relates to other fields and influences, and is influenced by, those fields. Fields are semi-autonomous and interrelated; and certain fields, particularly the economic field, have a direct impact on other fields, though not always in a deterministic way. By applying the Bourdieusian lens of field, it is possible to frame the quality TVET lecturer as an active player in two fields. This lecturer needs to be cognisant of the different expectations, power relations, influences and roles of other fields.

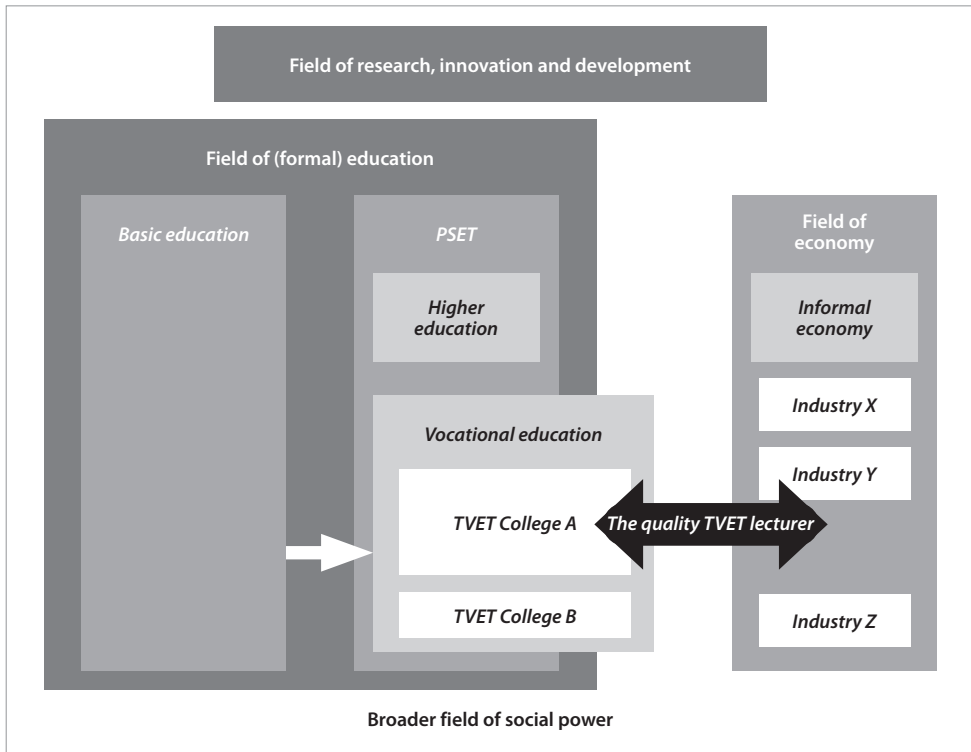


FIGURE 4: Fields perspective of the quality TVET lecturer

Source: Authors' own, adapted from Black (2022).

Using the analogy of sport, the quality TVET lecturer is akin to being a player in two fields – for example, a Bafana Bafana footballer in one field and a Springbok rugby player in another.⁴ Football and rugby are two completely different sports, and so being a quality player in both fields of play requires two distinct sets of skills and understandings of the different formal and informal, unwritten or hidden, rules of the game which also define how to act and succeed (*habitus*). For example, there are similar formal rules of player conduct vis-à-vis the referee in both sports, while, informally, it is normal to shout at the referee in one field (football) but culturally frowned upon in the other (rugby). However, the framing of quality in the literature focuses primarily on the rules and dynamics of one field (TVET as a subfield of education) and very seldom includes a holistic understanding of the pressure of being a player in two different fields.

4 Bafana Bafana and the Springboks are the popular names of the South African national men's teams for football (soccer) and rugby union. We deliberately used football and rugby in this sporting analogy because these two sports (along with cricket) are the three most popular sports in South Africa, reflecting early British colonial influences. Pervasive social and cultural dynamics related to race and wealth in these sports are somewhat akin to the interrelated nature of Bourdieu's concept of field, capital and *habitus*.

We visualise this in an expanded version of Black's work. Our model, *a fields perspective on the quality TVET lecturer* (see Figure 4), frames the duality or co-location of the quality TVET lecturer as being situated both within the TVET subfield (of education) *and* within the economic field. It is not sufficient to focus narrowly on only one field when exploring quality. This dual-field dynamic means that the TVET lecturer is required to be co-located (physically at times, but more commonly in respect of their sense of self or identity) in both fields. Therefore, quality is not only a set of personal attributes or skills or knowledge but it is also bound to a set of relationships in each of the two fields.

Multi-field dynamics

While we locate the TVET lecturer as a player in two distinct fields in our model, this somewhat binary – though novel – dual-field framing does not sufficiently capture all the dynamics of quality that we are aware of in the literature and as evidenced in our data. Fields are not tightly bounded spaces; rather, the dynamics both within and between fields and subfields can all affect the individual lecturer and the TVET system. In particular, the political field directly affects both the education and the economic fields and shapes discourses, rules, regulations and flows of resources in each. Education is highly regulated by most states (particularly with respect to children and young people) and the economy is central to ensuring that resources are available for the state to deliver education and other services to its citizens. In the case of TVET, actors in the field of politics shape curricula and qualifications, determine institutional forms and funding, and play a direct role in quality assurance measures. TVET lecturers do not have to be political, but they need to be aware of how this field interacts with the fields of education and the economy and the subfields of TVET and industry.

The field of research, innovation and development (RID) is also linked to quality in TVET. For example, developments in disciplinary knowledges underpin knowledges applied in the workplace and find their way into university curricula and eventually into the school and TVET curricula. Innovations (from the economic and education fields) also find their way into the world of work through new technologies, processes and products. Being able to recognise the implications of such innovations for future developments in the economic field is crucial if the TVET curriculum is to remain relevant. As with the field of politics, TVET lecturers do not need to be located in the field of RID, but they do need to be aware of and understand how such processes can both constrain and enable the work that they do.

A further dimension in the multi-field dynamics of quality is the field of social power. This is evidenced by policy expectations related to the social role of TVET colleges as second-chance institutions for individuals who have dropped out of the schooling system and as an alternative route into higher education. Similarly, the informal economy has links to TVET that need to be foregrounded, given the scale and scope of this sector in the context of South Africa. A quality TVET lecturer accordingly needs to explore ways in which their students might use their skills for livelihoods that may reside in the informal economy. Therefore, while it is not included in our analysis, we depict the informal economy as a subfield of the economic field.

The fields concept points to a much broader set of fields that interact with and affect quality and the quality TVET lecturer; therefore, Figure 4 represents a more complex understanding of quality. While the TVET lecturer is usually not directly located in the field of politics and RID, their co-location within the fields of education and the economy is strongly affected by these fields and the broader field of social power. Quality, then, is not only about an individual and whether they strive to be a quality lecturer; it is also rooted in these complex multi-field dynamics. The simultaneous positioning in two discrete fields and the multi-field dynamic has serious implications for policy and theory. This we turn to in the final section of our article.

Implications for policy and theory

Recognising that the quality TVET lecturer is akin to being both a professional footballer and a professional rugby player fundamentally challenges the way DHET and the wider TVET system might think about and support quality. The co-located nature of the TVET lecturer as presented in our model decentralises the dominant view in policy and theory that more training and professional qualifications leads to quality TVET lecturers. While the development of professional qualifications specifically for TVET lecturers responds to a gap in South African TVET, these are education qualifications ranging from a diploma in TVET to a postgraduate diploma in TVET,⁵ delivered by public universities, admittedly with requirements for WIL components (DHET 2013:7–12; DHET, 2023). The fields perspective reiterates the point that knowledge, skills, expertise, training and qualifications from *both* the education *and* the economic field are important. However, TVET policy continues to equate quality with academic teaching qualifications; and while lecturers' limited experience of industry is well noted (Hofmeyr & Vally, 2022; DHET 2023), the emphasis on pedagogy creates a misalignment with what is predominantly an occupation-based TVET sector (Paterson et al., 2024:10). Draft strategy documents envisage a greater role for business and industry as part of the effort to enhance quality – by providing WIL opportunities for lecturers, for example. But, in the main, this has not transpired and the minimal involvement of industry in TVET continues to be a major weakness in South African TVET – as it is in many countries (Hofmeyr & Vally, 2022:55). Therefore, any notion that quality can be improved by focusing only on the competence and commitment of the TVET lecturer as measured by their professional teaching qualifications in the education field is likely to have a limited impact on overall TVET lecturer quality.

The quality TVET lecturer has to embody the habitus and capital of an educator working in a college *and* be embedded in the relevant social and material networks within the economic field in order to be an active player in that field. An emphasis on qualifications in one field while not placing equal focus on access to, and experience in, the workplace undermines the dual functionality of the TVET lecturer. This would be similar to investing only in improving skills as a football player while reducing an individual's ability to perform on the rugby pitch.

5 Optional academic qualifications in education are also available to TVET lecturers interested in pursuing academic research and/or professional development (DHET, 2013:12).

Consequently, the model presented here has implications for the way TVET and TVET lecturers in particular are connected to industry. For the purposes of our model, industry encompasses the variety of sectors, business types and industries that exist in the economic field. Consequently, the outworking of this dual field functionality is likely to be dependent upon which industry and occupations the TVET lecturer is most closely associated with. It will also be different for those TVET lecturers who teach more general subjects, although even here the connection to the world of work is important.

There are also implications for the time and resources required to enable the TVET lecturer to play the game, that is, to understand new techniques and changes in the rules of the game in two fields, and to build and maintain the occupational identity of somebody in both education and industry. The findings outlined above confirm the consensus in the literature and in policy and public discourse that outdated curricula and a lack of resources, technologies and WIL opportunities undermine quality in TVET.

If, then, as we argue, the quality TVET lecturer resides in two fields, quality is fundamentally undermined where resource constraints restrict TVET lecturers to being located only in the education field – a challenge that is compounded where policy, capacity-building and training agendas focus primarily on only the education field.

Conclusion: The complex co-field dimensions of quality

Research to date has not adequately defined quality or the quality TVET lecturer, leading to the partial identification of what is necessary for driving up quality in TVET. What we have demonstrated is that, by placing the TVET lecturer at the centre of the analysis, it is possible to build a more complex understanding of quality. Through Bourdieu's concept of field we identified the quality TVET lecturer as a player in two fields, each of which is dependent upon distinct identities, rules and power dynamics (capital and habitus) and the need to have more than just these two fields in the frame. This suggests that it is not enough to focus on capabilities, qualifications and subject- or industry-specific knowledges and having a *connection* to industry. Instead, TVET lecturers need to be *part of industry* in some form, in ways that are appropriate to their occupational specialism and remit as a TVET lecturer.

Further work is required to analyse and theorise what it means to facilitate the quality TVET lecturer as a player in two fields. This includes a consideration of the different dimensions of quality that underpin this co-location, such as pedagogic practice, building and maintaining links to industry and the workplace. and more complex multi-field dimensions such as the future world of work. Moreover, there are important implications of the model in its application to the individual and the specifics of their occupational specialism and the TVET college type, and their physical proximity to local industry, for example.

The research underpinning this article took place in South Africa, funded by the national DHET, but the implications of our model are relevant to other TVET contexts, and,

specifically, to the transformation of TVET in alignment with the TVET aspect of Sustainable Development Goal 4 (UNESCO, 2021). Globally, challenges remain in linking TVET to industry so that TVET lecturers possess the necessary knowledge, skills and competencies to prepare students for the future world of work (UNESCO–UNEVOC, 2020). The co-field location of the quality TVET lecturer in both the education and the economic fields provides a novel foundation for reframing and (re)theorising this TVET–industry challenge and the ongoing pursuit of quality within TVET.

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EDITORIAL POLICY AND PROCEDURE

The *Journal of Vocational, Adult and Continuing Education and Training* (JOVACET) recognises the need for critical engagement through studies in TVET and Adult and Continuing Education and Training, and for encouraging critical scrutiny of this expansive knowledge area on the African continent.

The voices and experiences of practitioners, reflecting on all aspects of teaching and learning within vocational education and adult education settings, should be heard through publication of empirical and robust research. While the journal clearly wishes to take forward academic scholarship, it also seeks to strengthen opportunities for reflective practice that makes a scholarly contribution to the field. New knowledge emerging out of complex developmental contexts has significant value and needs to be showcased beyond existing geographical and political boundaries. The journal is therefore committed to also supporting the development of emerging researchers by providing them with a space to present and defend their research among a network of global scholars. Within the field of vocational and continuing education there is substantive ‘grey literature’ that remains in project report form. The journal is potentially a vehicle for the translation of this important work into an academic contribution to a wider community of practice and thereby enhancing its value.

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The editors are accountable for everything published in the journal and should therefore:

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Themes for categorising papers

The submitted papers will be organised according to the following streams, but are not limited to the following:

Steering Global Disruptions

- Climate change
- Digitalisation
- Fourth Industrial Revolution (4IR)
- Learning Management Systems
- Demographic change
- Migration
- Energy Security and Transition

Inclusion in Education (2024 marks 30 years since adoption of Salamanca Statement)

- Re-orientating current TVET policies for inclusivity
- Adapting teaching methods to accommodate vulnerable groups of learners
- Training and support of TVET teaching staff/trainers to enable them to accommodate the diverse needs of learners

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- Private sector engagement
- Sustainable curriculum
- Digital transformation collaborative efforts
- Commitment of partnerships to advance common projects

- Articulation
- Funding opportunities
- UNEVOC network and TVET contributions to sustain their membership

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Prof M. Maphalala; Prof S. Khumalo

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The Journal of Vocational, Adult and Continuing Education and Training (JOVACET) recognises the need for critical engagement through studies in technical and vocational education and training (TVET) and adult and continuing education and training, and for encouraging critical scrutiny of this expansive knowledge area on the African continent.

Editorial

Joy Papier

Thought piece: Promoting employment-oriented skills development in Africa: Reality, relevance and research as enablers

George Afeti

A reflective overview: European vocational education and training reform: The Copenhagen process 2002 to 2024

Steven Bainbridge

Gendered labour market outcomes among South African technical and vocational education and training (TVET) completers

Tamaryn Jean Friderichs, Michael Rogan and Seamus Needham

Technical and vocational education and training (TVET) colleges and industry: Strengthening partnership-building practices

Tuletu Njengele, Penelope Engel-Hills and Christine Winberg

What does 'quality teaching and learning' mean in TVET contexts?

Joy Papier and Monica Mawoyo

Systems analysis of the national performance management system for TVET lecturers

Andrew Paterson, James Keevy and Zaahedah Vally

What is a 'quality TVET lecturer'? Problematising the concept of quality in vocational education

Volker Wedekind, Jo-Anna Russon, Zihao Liu, Zolile Zungu and Mixue Li



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