Journal of Vocational, Adult and Continuing Education and Training

JOVACET
Journal of Vocational, Adult and Continuing Education and Training

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Message of Support from Mrs GNM Pandor, Minister of Higher Education and Training

Internationally there is a scarcity of peer-reviewed academic publications that are specifically intended to promote and disseminate scholarly research into post-school TVET and Adult and Continuing Education and Training.

The first edition of the *Journal of Vocational, Adult and Continuing Education and Training* and its focus on the African continent and the global South is thus timely and most welcome.

The enormous importance of the TVET, Adult and Continuing Education sector to the social and economic wellbeing of our people is not disputed. However, there has been an absence of a credible and quality publication to promote scholarly debate in the field. I am hopeful that this *Journal of Vocational, Adult and Continuing Education and Training* will provide such a platform for the theoretical and conceptual understanding of this sector. I hope also that the Journal will provide a platform for a rigorous and sound analysis of the implementation of the analyses of the scholars that will be published in the Journal.

I welcome the first edition of the *Journal of Vocational, Adult and Continuing Education and Training* and look forward to the interdisciplinary and globally comparative publications that will assist policy-makers, practitioners, researchers and scholars to contribute to and enhance the understanding of this important sector.

Congratulations to the Institute for Post-School Studies at the University of the Western Cape and your partners on this milestone.

I wish you, your contributors and your readers every success in this first edition and continued strength in the years ahead.

Mrs GNM Pandor MP
Minister of Higher Education and Training

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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.

JOVACET is available on open access at: http://epubs.ac.za/index.php/JOVACET

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The Journal of Vocational, Adult and Continuing Education and Training could not have become a reality without the commitment of a number of individuals and organisations who provided support at critical stages of its development.

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We are enormously grateful to our colleagues across the spectrum of post-school provision, who offered helpful advice as the journal processes unfolded.

Thank you to the authors who allowed us to subject their work to scrutiny and for being willing to publish in the JOVACET.

Our reviewers, who gave so generously of their time and talent, deserve a special word of thanks.

Thank you to our Editorial Committee and Advisory Board – we look forward to your continued participation and support.

EDITORIAL

JOVACET Vol 1, Issue 1: Researchable Issues in Vocational, Adult and Continuing Education and Training

Joy Papier
Editor-in-Chief

In this first edition of the Journal of Vocational, Adult and Continuing Education and Training (JOVACET), which we are thrilled to present, it is appropriate that the journey towards this publication should be described. Such description would be useful not only for readers who are unaware of this history – for those who have been involved more closely with the journal's development, it should give pause for reflection on the road that has been travelled.

Within the ambit of post-schooling (beyond compulsory general education), adult and continuing education, higher education, and technical and vocational education and training (TVET) are recognised conceptual domains of knowledge and research. Of the three, higher education studies have historically been more prominent, in South Africa at least, and have generated the most scholarship. Despite the critical social and economic importance of TVET and adult/continuing education and training, research in these areas remains sparse and marginalised, hence the impetus to establish a new academic journal in the South African context, and on the African continent. However, while this focus is its 'niche', the journal intends to consistently position these domains as part of a more complex and dynamic post-school system with articulating components.

In 2014 the UWC Institute for Post-School Studies secured seed funding (see acknowledgements) to undertake a scoping exercise on the need for an academic journal focused particularly on post-school education and training. A comprehensive report was produced and a consultative workshop brought together a wide range of partners for discussion around strategic questions that had emerged from the scoping report, and to chart a way forward. There was general agreement by participants that, despite its stated importance in a variety of policy documents, TVET, but also adult and continuing education, remained

underdeveloped areas of scholarship across the continent. The creation of an academic space for '*building and strengthening the voice of the continent and the global south within international debates on vocational and continuing education and training*' (Journal Scoping Workshop, 2016) was deemed critical to South Africa and indeed the African continent. It was emphasised that such an academic journal should encourage critical engagement and reflect the voices and experiences of practitioners in vocational and adult/continuing education settings, and should seek to 'strengthen opportunities for reflective practice that makes a scholarly contribution to the field'.

Against this background, a journal launch conference was held in November 2017 under the rubric, researchable issues in vocational and continuing education and training, and it is this broad theme that has been the basis for the very first edition of the journal in 2018.

Papers presented at the conference dealt with many dilemmas and unanswered questions in TVET and adult and continuing education, from a variety of angles and vantage points. Hence this edition spans a wide range of issues across the spectrum of post-school learners and learning levels, from policy through to implementation.

The foreword by George Afeti, a scholar who has worked in post-schooling across Africa, opens a window onto the crisis of unemployment on the continent, and government attempts at revitalising vocational education with a view to providing employment-orientated skills training for youth and adults. As is generally the case in post-conflict economies, TVET as a sector is largely weak and emergent, and in need of systemic reform and funding. While policy development is acknowledged to be under way, there is the recognition of a policy mismatch, where policy goals are not supported by enabling systems and structures. Afeti points to ten 'key inhibiting factors' that ought to be addressed in order to revitalise TVET in Africa.

The painful reality of policies that fall short on their promises is conveyed also by John Aitchison in a policy thought-piece that provides a comprehensive overview of South African government attempts at the reconstruction of TVET and adult education. In an environment of competing interests, however legitimate, adult and community education (and TVET to a lesser extent), have drawn the short straws and continue to operate within budgets that inhibit them from achieving policy goals. The apparent vacillation on the part of authorities with regard to the crisis of those not in employment, education or training (NEET), through persistent underfunding of viable education and training options for them, is what leads Aitchison to believe that the problem (the 'nettle') is being weakly grasped, and can only result in unpleasant outcomes.

Still at a fairly macro-level, André Kraak reflects on the rationalisation and differentiation policy that was executed among universities in South Africa in the early 2000s, and the impact of institutional mergers on particularly the role of the former 'technikons' in the skills development continuum. Kraak argues that, in the move from 'technikons' to 'universities of technology', there has been significant academic drift, and that the former technikons have lost their

vocational edge in respect of high-level applied skills development in the technology fields. Two country case studies, of the Netherlands and Finland, are provided to showcase vocational systems alignment initiatives that are particularly aimed at fostering an applied research and development focus, and institutional engagement in local economic development. The rapid growth of these polytechnic systems is contrasted with the relatively low number of graduates from 'applied' technical programmes at reconstituted technikons in South Africa since 2000, the latter situation being ascribed to a 'flawed policy process' in respect of the former technikons, which has been to the detriment of applied training and research.

A stronger focus on the public TVET colleges, particularly on the concept of leadership, emerges from research undertaken by Robertson and Frick and Terblanche and Bitzer in articles dealing with leadership development at college manager level, and with development of curriculum leadership, respectively. In the former article, Robertson and Frick acknowledge the multiple roles that college leaders are called upon to play in the complex environment of public TVET in the throes of reform, balancing internal and external roles, and operating in an increasingly managerialist culture. They report on college leader perceptions of their roles with regard to management and leadership, which is a constant balancing act, with leaders in the study lamenting their loss of focus on teaching and learning (which they believe should be their core function) due to a preoccupation with corporate governance.

Terblanche and Bitzer, on the other hand, conceptualise a framework to support training and development of curriculum leaders, where TVET curricula are conceived of as structured theory combined with practical learning, and with workplace learning. They argue that leading curriculum change on the ground is hampered by centralised control of curriculum processes, and limited powers to effect such change at the college level. Nonetheless, the authors report on a study that undertook to establish how college participants at various leadership levels understood the curriculum changes that needed to be effected. In the process, respondents commented on aspects they believed to be critical to curriculum change, and the centrality of industry alignment of college curricula. Many of the shortcomings of current programmes were highlighted, for instance outdated content and limited practical training, though these are generally well known and have been prioritised by government for urgent attention. In spite of nationally designed curricula, college leaders believed that they ought to develop curriculum design skills in order that curricula be made more responsive to industry and community needs. A curriculum development framework based on input from college leaders is proposed, together with suggested modules for building necessary leadership skills.

Policy intentions for TVET state that at least two avenues should remain open to TVET graduates, that of progression into higher education, and access into employment. However, articulation of TVET learners into universities has proven difficult to effect, and tends to depend largely on institutional relationships and cooperation. Needham and Papier share the outcomes of a research and development project that negotiated a pathway for learners employed in the insurance sector who undertook an upgrading programme in TVET colleges, for entry into a university qualification at a higher level. In the project, learners performed fairly well at

the TVET college, but subsequent throughput at university was exceedingly poor, and the reasons for this are interrogated. Part of the problem, it emerged, was the gap between the exit level of the college qualification and the entry level of the university qualification. In addition, differences in curriculum structure, assessment regimes, and learning support between what was effectively a practice-informed, industry-driven programme delivered at the college, and a more theoretical university programme, left learners with insufficient disciplinary knowledge to cope with university learning.

Two articles deal with college lecturer development, an area of TVET in which the local knowledge base is considerably thin. With the legislation in 2013 of a lecturer professionalisation policy and new official qualifications for teaching in TVET, universities have been given the task of developing and offering the new qualifications, and these are at various stages of registration and accreditation at the Council on Higher Education (CHE). Van der Bijl and Taylor, in their article, consider the issue of lecturer internships/placements in industry as a prerequisite for certification in the new qualifications. Work-integrated learning (WIL) is compulsory for teacher education students, where students undertake a stint of practice teaching in school settings. This same model applies to vocational teachers (college lecturers), where they need to undergo a period of practice teaching at college, but with the additional requirement that they spend time also in an industry setting. The rationale for this is that college lecturers need to understand the work spaces that their students will be entering in order for there to be more effective teaching in a college context. They argue that university faculties of education would have little experience of student placements in industry settings; hence they report on a 'WIL for Lecturers' project that undertook industry placements for in-service college lecturers, and surveyed lecturers who had completed their placements, about their motivation for taking up a placement, and their industry experiences. Lecturer feedback was instructive, with most lecturers reporting positive learning experiences that made them feel part of a broader professional community and allowed them to establish relationships with industry experts in their field.

Rudman and Meiring, also on the topic of vocational teacher education, take a retrospective look at a short capacity-building programme instituted prior to the new qualifications for lecturers, with a view to offering a transformative lens for the construction of new lecturer qualifications currently under way in universities. Using their programme as a vehicle for incorporating the university commitment to a humanising pedagogy, the authors undertook a small study of how lecturers perceived the implementation of this approach and their perceptions of its influence on their classroom practice, which they followed up two years later with the same lecturers. Based on self-reflections of the lecturer participants in the training programme, the article tentatively concludes that humanising pedagogies in post-conflict societies still fractured by distrust, are potentially transformative and healing, albeit implemented on a small scale and aimed at transforming 'one lecturer at a time'.

Moving from the local to the global, Martin Mulder delves into a German initiative that intends to set out a research programme on TVET, and comments on the priority research areas and

themes that are being proposed. The research strands that were derived confirm the need for collaboration across localities, in that the insufficiency of the knowledge base is widely accepted across contexts, and many of the questions posed are similar. Mulder highlights four research themes that are relevant in international VET development, but which resonate strongly in the issues that would be recognised as necessary research areas locally. Each of the four themes – cooperation between employers, industry and government; learning within work; national standards; and qualified vocational staff – speaks to generally accepted concerns on these matters, and can be located in the range of research topics Mulder gleaned from international reviews of vocational research, and helpfully clustered for prospective researchers. International VET research cooperation, Mulder avers, is 'important for positioning VET and VET research higher on the ladder of esteem in education and educational research', but he cautions that 'continuous improvement of practice' which contributes to an increase in the quality of learning processes and to improved results should be the ultimate goal, rather than research for the sake of research.

Finally, Shirley Walters rounds up this cross-sectoral edition and its focus on 'researchable issues' with an article on 'adult learning and education in times of climate crisis'. Using the Western Cape's recent drought experience to illustrate how adult learning has had to accommodate the concern with saving water, Walters brings together key insights about both environmental matters and the place of adult learning. The concept of ALE (Adult learning and education) is mooted as part of an emerging discourse that is attempting to find a common language for adult and lifelong learning. Adult learning is concerned with all aspects of living and livelihood, and is called upon to respond to the myriad challenges of individual and community life, in line with popular education and its roots in social movements. Advancing the sustainability of life on our planet is one of the areas of contestation that demands innovative responses, and Walters holds that the participation of people in these struggles is critical for learning, and for building the agency to effect change that results from such struggle.

We are proud of all our authors who subjected their work to robust scrutiny, and we sincerely hope that this first edition will be a stimulus for future contributors to the JOVACET. Our deep appreciation goes to all who have made this first and historic publication possible.

FOREWORD

Revitalising technical and vocational education and training in Africa: Issues outstanding

George Afeti

Chair, African Union Continental TVET Expert Group

Introduction

One of the stark realities of Africa today is the crisis of youth unemployment. Every year, about 10–12 million poorly skilled young people exiting the various levels of the education system enter the labour market (AfDB & OECD, 2012), where they end up in insecure and sometimes hazardous employment with no prospect of further education or training. Even graduates of higher education institutions are not spared the frustration of seeking and not immediately finding a job. In countries such as Zambia and Ethiopia, young graduates may take up to five years after training before finding a job in the formal sector (ILO, 2013). In Ghana, it is estimated that the economy needs to create 300 000 new jobs per year to absorb the growing number of unemployed (Honorati & Johansson de Silva, 2016). In Tanzania, approximately 800 000 people enter the labour market each year (ILO, 2012), in contrast to the absorptive capacity of the public sector of only 40 000.

Young people without jobs or hope for a better future live a daily life of frustration. Such frustration, co-mingled with desperation and loss of self-esteem, is pushing many young people to seek any means of livelihood, including embarking on the perilous journey of migration across the Mediterranean Sea to Europe. Others may be entrained into a life of crime or be used as instruments of politico-religious violence or as combatants in armed conflicts. Youth unemployment therefore poses a threat to political and national stability, and social cohesion. The good news is that many African governments have now come to appreciate the critical role that technical and vocational education and training (TVET) can play in equipping young people with skills for the world of work.

Revitalisation of TVET is making only timid progress

The increasing importance that African governments now attach to empowering the youth through employment-orientated skills training is reflected in the skills development strategies that governments have developed and are implementing to revitalise their TVET systems. Countries such as Botswana, Ghana, Kenya, Malawi, Namibia, Rwanda, Tanzania and Uganda have established national TVET agencies and workforce development authorities to coordinate, regulate and generally drive skills development to support the productive sectors of their economies. Many years ago, South Africa established sector education and training authorities (SETAs) to oversee and support the development of technical competencies for the various sectors of industry.

However, in many countries, access to quality TVET is unequal and inequitable, partly because of the uneven geographical distribution of training institutions. The majority of the better-endowed TVET institutions are located in the urban centres, making it difficult for poor rural dwellers to get access to the quality and diversified skills training opportunities that their compatriots in the cities do. The use of information communications technology (ICT) and other technology-mediated interventions to increase access to TVET is still in its infancy in almost all countries. On the whole, TVET in many African countries suffers from inadequate financing, obsolete technology and weak organisational structures.

The skills development situation in post-conflict countries such as Liberia, Sierra Leone and South Sudan, although improving, is still challenging. Many years of war and conflict have left the learning and training infrastructure in these countries damaged or destroyed, resulting in poor learning outcomes and low training capacity; and this, against the backdrop of a high demand for employable skills training by the youth, including demobilised soldiers and former child combatants. In poorer countries, there is a shortage of trained TVET professionals, policy-planners and employment-sector analysts at the national and institutional levels to drive the entire skills acquisition system. This situation has reduced the ability of training providers and government ministries and agencies responsible for TVET to effectively match training to labour market demands or the needs of local entrepreneurs and small businesses. The TVET programmes themselves, especially in the formal sector, lack flexibility, relevance and responsiveness. In countries where there is no central TVET coordination agency or National Qualifications Framework (NQF), the national TVET system lacks coherence, and quality standards may vary from one training provider to the other.

Policy reforms

Against this background, reforming national TVET systems has become a major focus of the education and training agenda of many countries. Policy reforms are geared towards promoting access and participation, equity, training relevance, employability and the strengthening of system governance, management and financing. The African Union has

produced a Continental TVET Strategy to foster youth employment (African Union, 2014); this strategy provides a comprehensive framework for the design and development of national policies and strategies that support economic development and contribute to poverty reduction. The Continental TVET Strategy rightly recommends that national TVET policies should be firmly rooted in indigenous knowledge and learning systems, and that the influence of both local cultural practices and values and globalisation on TVET delivery should not be ignored.

Generally, many of the TVET reforms in Africa have concentrated on addressing the general weaknesses associated with the governance and management of the system. However, these systems-level reforms have fallen short of positioning TVET as an effective response to the triple challenges of sustainable socio-economic growth and industrialisation, youth employment and poverty alleviation. What are the factors inhibiting the transition from policy to desired outcomes? One key factor is policy mismatch.

Policy mismatch

In many respects, Africa is a continent of contrasts. African countries come in different sizes and shapes, with a great diversity of cultures and governance models, and are at different stages of socio-economic development. Consequently, policies that work in one country may not yield the same outcomes in a different politico-economic environment. It is therefore important to link TVET policy reforms to clear and realistic national economic and human resource development goals that consider national values, culture and rate of technology uptake as well as the impact of globalisation on the domestic skills development agenda.

The complexities of TVET are often not well understood by policy- and decision-makers in many African countries. Important issues such as vocational disciplines or occupational areas to prioritise in the learning process, the quality of provision, relevance and employability, financing, the transitional pathways into employment, and critical poverty-reduction strategies are only superficially addressed in national policy frameworks.

Very often, the policy objectives lack concrete details on how to achieve the stated policy goals. For example, to ensure that the skills supply meets the demands of the labour market, the familiar strategy is to link training to information on skills gaps and shortages gathered from a labour market intelligence system, without spelling out how to build the technical expertise required for undertaking such an exercise. Policy objectives are often guilty of emphasising what needs to be done without articulating how the objectives would be attained. Similarly, recommending TVET as a vehicle for getting young people into self-employment often ignores the need for governments to create an economic environment that is favourable to employment creation. Policy mismatch has the same effect on the employment climate as skills mismatch. Neither is responsive to the needs of the labour market.

Issues outstandings

Effectively revitalising TVET in Africa would demand that some key inhibiting factors within the TVET ecosphere be dealt with. Ten inhibiting factors are elaborated on below.

Moving from system reform to system improvement

After years of implementing policies to reform their national TVET regulatory and governance frameworks, countries should now shift the emphasis to system-improvement interventions. Strengthening the TVET delivery system requires appropriate training equipment and process simulators, an adequate supply of training materials, and practice by the learners. Other critical requirements include relevant textbooks and training manuals, qualified instructors with experience in enterprises, and the participation of industry practitioners in training delivery.

Assuring the employability of trainees, furthermore, begins with effective guidance and counselling of potential learners in the choice of training programmes commensurate with their aptitude, academic background, career ambitions and the current or future job openings. The notion of employability presupposes that the skills needs of the labour market should drive training provision. In this regard, increasing investment in the TVET sector to build a strong capacity to implement a system-improvement strategy is important. Systemic reform alone is insufficient.

Assessing the influence of globalisation on national skills development strategies

A result-orientated approach to revitalising TVET is to align policies and strategies to the market environment. Understanding the pathways to the employment market is the first step in designing system-improvement interventions. Although globalisation may have both positive and negative impacts on national economies, the complexities of the labour market and the influence of globalisation on domestic production systems should drive training delivery strategies. How can cheap imports of basic consumer items compete on the domestic market with similar goods manufactured by local artisans and manufacturers? Skills development for decent employment and poverty reduction cannot happen in the absence of an enabling market environment that favours the domestic production of goods and services.

Placing equal emphasis on both the social and the economic dimensions of TVET

While African countries need advanced skills to enhance productivity, transform the economy and catch up technologically with other regions of the world, the drive for economic growth should not overshadow the potential power of TVET to contribute to realising meaningful individual livelihoods for the poor and vulnerable of society.

The social dimension of TVET is just as important as the aspiration for national economic growth. As some authors have argued (McGrath & Powell, 2015:12–19), TVET should shift the focus from over-concentration on economic growth to the wellbeing of individuals. Skills

development should focus more on supporting development that is sustainable for individuals, communities and the environment, while also being concerned with eradicating poverty, inequality and injustice.

However, the social or individual wellbeing dimension of TVET cannot be dissociated from the wealth that accrues from national economic growth and industrialisation. Industrialising African economies is a necessary precondition for wealth creation and may well contribute to a skills development ecosystem that opens up employment opportunities for individuals with technical and vocational skills. Promoting social justice and eliminating economic inequalities through TVET cannot, therefore, be separated from a macroeconomic environment that creates sustainable demand for technical and vocational skills.

Several factors inhibit the drive towards industrialisation. Industry cannot grow without access to raw materials, markets for finished products, sources of capital and access to technology. Other inhibiting factors include poor transport and communications infrastructure, and limited access to reliable energy. However, the greatest drag on industrialisation is the absence of qualified and competent human capital: a technically skilled labour force is a prerequisite for sustained industrialisation. Promoting manufacturing and industrialisation requires investment in technology, modern production machinery and human capital.

Aligning training policy to national macroeconomic policies

Technical and vocational education and training by itself does not automatically result in economic growth, the provision of jobs or the eradication of poverty. Rather, TVET requires an economic policy environment that promotes the creation and growth of enterprises and stimulation of the economy. When businesses grow or expand, demands for new or additional technical and vocational skills emerge, new training opportunities arise and additional jobs are created.

Factoring flexibility and lifelong learning into TVET provision

The skills of the workforce can be upgraded continually within the context of lifelong learning (LLL) where employees are able to sharpen or upgrade their skills in tandem with changes in technology in the workplace. Also, LLL opportunities afford learners who have had limited access to training in the past, a second chance to build on their skills and competences or enable them to have their previously acquired skills certified through the mechanism of recognition of prior learning (RPL). A TVET NQF can help to promote training flexibility and coherence, LLL and RPL within the TVET system.

Integrating ICT and technology-mediated learning into TVET

Introducing ICT and e-learning methodologies into TVET provision can contribute to quality improvement, technological innovation and increased outreach and access to learning opportunities. However, technology-mediated learning will require curricula with appropriate

digital content, access to electricity and computers, Internet connectivity, changes in institutional teaching and learning culture, and adequate budgets to cover operational, maintenance and equipment replacement costs. Although many countries in Africa have developed national ICT policies and are mobilising resources for ICT infrastructure development, progress is slow. Moreover, negotiating the transition from policy to practical learning experiences will involve appreciable capital outlays and government–industry partnerships.

Revamping the agricultural and manufacturing sectors

Building skills for modernising and boosting agricultural production along the entire value chain is a policy imperative. Accounting for 60% of the world's uncultivated arable land, agricultural development has great potential for growth and employment in Africa (Beaujeu, Kolie, Sempere & Uhder, 2011). Agricultural production for food and jobs is one area where Africa has a comparative advantage in terms of the availability of land and labour, and it can therefore become competitive on a global scale. Another area where a revitalised TVET system could support economic development on the continent is in the provision of relevant skills for value-addition to primary commodities and natural resources such as minerals, timber, cocoa and other food crops for domestic consumption and export.

Revitalising the manufacturing and agro-industry sectors in Africa offers enormous possibilities for industrialisation and employment creation. In this regard, the most important ingredient for success is the availability of a highly skilled domestic technical workforce. It is therefore important for countries in Africa to implement policies and strategies that promote the learning of science, technology, engineering and mathematics (STEM) at all levels to facilitate the development of those higher-order skills that are necessary for building, modernising or revamping local manufacturing industries and adding value to primary commodities. Without the technological skills to transform primary commodities into processed products for export, African countries will continue to be short-changed.

The cocoa industry provides a striking example of this unfair economic equation. Africa produces 75% of the world's cocoa and yet it accounts for only about 5% of the almost US$100 billion in annual sales made by the chocolate industry (Chocolate industry analysts M&M, nd). This is a painful reminder that natural resources have no natural owners: the true owners of natural resources are those with the knowledge and skills to exploit and add value to them.

Prioritising TVET research

Currently, very little academic research into pertinent TVET issues is taking place in the majority of countries in Africa. Research is needed to inform policy choices and support decision-making. In particular, there is a need for credible disaggregated economic and human development data on an individual country basis rather than lumping all of Africa together as sub-Saharan Africa (SSA), in spite of the recognisable country differences. It is important, therefore, to conduct research to identify the 'shining lights' on the continent, to interrogate the

policy choices they have made to reach the level of progress attained and to explore the possibilities for replication in other countries. One other area in which research evidence is lacking is the informal skills development sector.

Modernising the informal skills development sector

The skills needs of out-of-school youth, early school-leavers and unemployed adults are best addressed by private-sector informal and non-formal training providers. Training in the informal sector is more flexible than school-based TVET, which is characterised by rigid admission criteria that are based on academic achievement, age restrictions and foreign-language requirements. Formal-sector training providers are often not innovative in their training curricula and delivery, and are ill-equipped to respond to the peculiar skills needs of these disadvantaged categories of learner in respect of flexibility of training delivery, teaching methodology, admission requirements and language of instruction. On the other hand, the medium of instruction in the informal sector is very often the local language which illiterate or less-educated learners can better understand and are more comfortable expressing themselves in. Although traditional apprenticeship training and skills development in the informal economy are slow to incorporate new technologies into their teaching methodology, they remain the dominant mode of skills training in many countries. This reality of skills acquisition by young people in Africa calls for a more inclusive system of skilling Africa.

Acquiring skills for the future of work

The Fourth Industrial Revolution which is unfolding in the 21st century is dominated by digital skills. Digitalisation, artificial intelligence (AI) and robotics should no longer be seen as existing outside the domain of TVET. Modern manufacturing plants and production systems require the competencies of highly trained and skilled TVET graduates. The era of TVET for the less-brilliant learner has gone. Governments should therefore invest in high-level TVET skills training in apex TVET institutions such as technical universities and universities of technology.

Conclusion

Investing in TVET is in Africa's interests. Revitalising TVET in Africa can be sustained only by massively investing in training infrastructure and teacher development and implementing economic policies that address the demand side for TVET skills. Merely acknowledging the importance of TVET in national education and training policy documents and its role as a vehicle for acquiring employable skills is not enough. Governments should actively pursue system-improvement interventions, facilitate the domestic production of goods and services for local consumption and export, and promote value-addition to primary commodities. TVET plays its role as a catalyst for socio-economic development more effectively when local manufacturing enterprises and production systems become more vibrant, since this will stimulate the demand for TVET skills and enhance the employment opportunities of adequately trained TVET graduates.

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Not grasping the nettle:[1] Dilemmas in creating and funding a new institutional environment for adult, community, and technical and vocational education and training institutions

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ABSTRACT

In spite of constitutional guarantees, ambitious policy promises, some initial enthusiasm for adult basic education and a well-run literacy campaign, South Africa has signally failed to construct a viable and vibrant adult and community education system that would parallel or enhance not only existing schooling, but also technical and vocational education systems. This article considers the current state of adult and community education and of technical and vocational education and training; in addition, it assesses the relevant recommendations in the *Report of the commission of inquiry into higher education and training* released in late 2017. Finally, it evaluates the extent to which the commission's recommendations correspond to the reality and also to what is required for South Africa's post-school offerings in the future.

KEYWORDS

adult education; community education; TVET; higher education and training

1 The figurative statement 'grasping the nettle' is an exhortation aimed at encouraging the hearer to deal with a difficult problem boldly and bravely. The phrase refers to the characteristic of the stinging nettle (*Urtica dioica*) to inject painful toxins into the skin when one brushes against its stiff poisonous hairs. However, if the plant is grasped firmly, the hairs tend to be pushed flat and do not penetrate the skin. The implication is that not grasping the nettle firmly is actually counter-productive and painful.

Introduction

The reconstitution of post-school education and training in the post-apartheid, post-1994 period is characterised by the following broad features:

First, in general, the attempted massification of higher education where the number of university students has gradually swelled, though throughput has remained poor; mergers between and the rationalisation of universities; and a creeping managerialism.

Secondly, the technical and vocational education and training (TVET) sector witnessed mergers among the former technical colleges now known as TVET colleges. The mergers were an attempt to bring about equity in previously racially segregated institutions, though the capacity to manage such merged institutions was extremely weak. Substantial capital injections by the state to recapitalise colleges and student financing underpinned subsequent growth.

Finally, in adult education, more specifically adult basic education, there was much promise in the mid-1990s due to advocacy on the part of South African trade unions in the interests of their members. However, after much initial activity and development, adult education floundered, in part due to the lack of priority given to it and partly because the increasingly austere economic environment at the time was producing a large pool of unemployed individuals (Aitchison, 2003a; 2003b; 2004). The 2013 White Paper on post-school education and training contained a series of proposals on new institutions – the so-called 'community colleges' (DHET, 2013a:20–24). The White Paper also indicated that a plan for adult and community education would follow.

'Abnormal' post-school education and training environment

In spite of copious reforms and reconstitutions, the South African education system is still a decidedly abnormal one. The number of students who eventually enter some form of post-school institution or programme does not match the increasing numbers of students passing out of Grade 12 with a National Senior Certificate (NSC). For example, the 2013 national education data show that 439 764 students passed the NSC; the number of places available in higher education institutions for new students was only around 40 000 for the 171 755 eligible matriculants to enter universities, and only 267 832 were eligible to enter TVET colleges (DBE, 2015; DHET, 2015). It is not clear how many students can be accommodated by the TVET institutions at the beginning of each year, but, generally, the numbers in these institutions are still lower than in the university sector. Young adults who never gained a Senior Certificate because they failed or dropped out of the school system at an earlier stage, and even those who have never attended school, are assumed to be taken up in adult education, even though enrolments in this sector have not changed much since 1994 (DHET, 2017b:114–115). It is therefore evident that, out of the entire cohort of young people, some do not finish the 12 years of school education, some fail, some pass poorly and only a minority go to university or to a TVET college. The majority reach an education-and-training dead end.

New governance arrangements – a 'function shift'

An important development in the past decade has been the steady centralisation of the governance of post-school education. Both adult education and TVET were historically provincial government competencies until 2009, when legislation was passed to transfer the TVET college function to the new national Department of Higher Education and Training (DHET). The DHET would take over the governance of TVET colleges and adult education institutions from provincial education departments (DHET, 2013b:38). Legislative amendments scheduled 31 March 2015 as the date for the final transfer or 'function shift'. Whereas the transfer of TVET was relatively orderly, though not unproblematic, what occurred in the case of adult education was nothing short of bizarre.

The state adult education system was implemented through public adult learning centres (PALCs), which were essentially classes held in public-school premises after normal school hours and attended by adult learners undertaking formal adult basic education equivalent to formal schooling up to Grade 9, and the Senior Certificate or exit school qualification. For the many years of its existence, this sector has remained underfunded, poorly managed and often dysfunctional (see DHET 2017b:219–250). There were numerous calls for its complete reform and, eventually, a task team was set up in 2011 to consider a new institutional form for adult and community education, and to devise a plan for this sector.

However, before the task team's report could be finalised, the national department informed the task team of a plan to rename all PALCs 'community colleges' and then immediately merge these PALCs/community colleges across the country into nine provincial/regional colleges. This was to give effect to the 'function shift' of the PALCs from provincial to national control. The task team was dismayed at this proposal for the PALCs – even though there was a clear need for rationalisation, clustering and linking to local community colleges, they had envisaged that such a process would need to be phased in over time and that attention would have to be paid to their educational effectiveness (DHET, 2017b:128–129). Given the lack of management capacity endemic in the PALCs, it was clear that there were limited resources for immediately setting up new community colleges modelled on the existing TVET college model. The task team saw this as a recipe for disaster – a legal sleight of hand that was bound to have poor outcomes. In spite of the task team's objections, the bureaucratically convenient but doomed-to-fail process went ahead on 31 March/1 April 2015.

As predicted, enormous administrative problems followed the transition from provincial to national control, particularly regarding the remuneration paid to existing PALC staff. There also appeared to be a great lack of clarity as to who was actually responsible for ongoing support of the PALCs, given that no new community colleges were actually in existence. As yet (2018), no 'new' community colleges have been established, although acting principals and some community college council members have been appointed to serve at what are effectively community college administrative centres, one in each of the nine provinces. In essence, the already inadequately funded PALC system is still in operation (DHET, 2017b:129–133).

Currently, there are nine so-called community colleges, one in each province, that are, strictly speaking, community college administrative hubs (though they have very limited administrative capacity and their finances are currently handled by a local TVET college). Under each of them are PALCs, previously run by the Department of Education of the particular province, which continue to operate more or less as before. In due course, some of them may be officially recognised as community learning centres (the new term for a satellite of a community college). The community colleges seem to have been structured very much according to the TVET college model, with a principal, deputy principal and a council. It is a top-heavy, extremely expensive model and the *Draft policy on staffing norms for CET colleges* (DHET, 2016) allocates only 45% of the total budget to the teaching staff in the previous PALCs – where all the actual current 'community college' work is still done, as there are no new central community college campuses. Though it might be reasonable for a future situation when there are 50 or more actual local community colleges and where the majority of professional staff work on a central campus, for the present (and foreseeable future), when all the actual educational delivery is through the community learning centres and satellites, spending only 45% of the total budget on professional staff operating in these delivery sites seems absurd. There is little likelihood of local communities having their education and training needs addressed.

Government commissions and funding constraints

The hiatus in moving forward with the task team's proposals on adult and community education and training has been attributed by policy-makers to a lack of finances (DHET, 2017b: 133–134). In relation to this issue, the government established a commission of inquiry into higher education and training (the Heher commission). The commission (2017:542) observed that:

> This situation is unsustainable and has disastrous consequences for the sustainability of institutions. … The CET and TVET sectors particularly need attention as they are severely underfunded, and cannot perform at their current funding levels.

Two recent policy documents on the funding of TVET and community colleges are the *Report of the ministerial committee on the review of the funding of TVET colleges and CET colleges* (DHET, 2017a; 2017b) and the *Report of the commission of inquiry into higher education and training* (Heher, 2017).

The ministerial committee's recommendations are many and detailed; there are 58, but they can be summarised as follows (DHET, 2017a:27–41):

- More money is needed for TVET and community colleges.
- The funding formulas need to be revised and must ensure stable, predictable funding.
- The existing inequality of funding to TVET colleges in different provinces has to cease.
- The sector education and training authorities (SETAs) need to play a stronger role in ensuring guaranteed funding.
- Infrastructure and refurbishment are needed.

- Bridging and foundation programmes, and student support, are required.
- Theory and practice have to be reconnected.
- Comprehensive legislation supported by piloting and research, is required for community colleges.

The ministerial committee seriously addressed the issue of underprepared students and the knock-on effect this has on TVET college throughput. In this regard, recommendation 35 states that:

> The real costs of remediating the failures in the school system and not having the TVET colleges clogged with unprepared students, have to be faced up to. If the community colleges are expected to do this, their funding (and general capacity) will have to reach a much higher level.

The ministerial committee also argued for the strengthening of the research capacity of the TVET and community college sectors in the following recommendations:

> A programme of recruitment of both full-time and part-time researchers should be undertaken in both the TVET and CET sectors. Universities collaborating in support of these sectors will also be asked to steer promising research students into undertaking research studies on TVET and ACET (recommendation 57);

and

> In both TVET colleges and Community Colleges, internal research capacity needs to be built in the long term, and this needs to be provided for by way of a percentage of the overall funding (recommendation 58).

Traditionally, adult education had been considered to be 'the poor cousin' when it came to educational financing, but the Heher commission clearly conveyed that there were in fact two 'poor cousins' – TVET and community education and training.

Currently, the total government budget for adult and community education is slightly more than R2 billion.

According to the Heher commission (2017:21), already by 2017 the government response to the so-called 'Fees Must Fall' protests had been a R16.2 billion top-up to university students and a cut in budget for TVET colleges (Heher, 2017:23). Some of the funding that had been intended for adult basic education for the unskilled and unemployed was also diverted from the National Skills Fund (NSF). To add to this funding crisis, in late December 2017 the then president announced that there would be free higher education for university students. Various analysts estimated that this could cost the state between R20 and R40 billion. The president had evidently ignored the passage in the Heher report (Heher, 2017:53) which cautioned that:

> Free higher education in highly unequal societies mainly benefits the already-privileged (new political and business elite), who have the social, cultural and economic capital required to access, participate in and succeed at higher education.

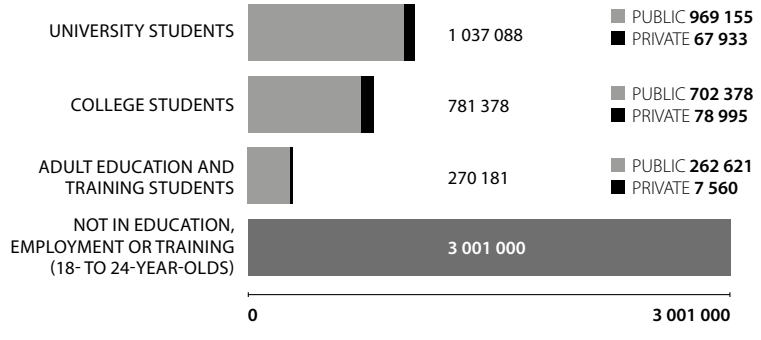
The president also appeared to ignore the statements and recommendations in which Heher argued that any financial decisions must take into account the education sector as a whole (Heher, 2017:58, 541):

> The needs of Community Education and Training should be taken into consideration before determining to allocate further funds to universities – approximately R46.21 billion in additional funding is needed for Community Education and Training over the Medium-Term Expenditure Framework.
>
> Regarding the Post School Education and Training sector – the priorities in CET, TVET and universities need to be balanced – money cannot be diverted to universities just because this is where the focus of the protests was. This will only lead to neglect of other equally deserving sectors which can contribute to economic development.

Not only is funding to the various components of the South African education and training system a problem, but it mirrors the shape of the South African system – an inverted pyramid with a larger university sector than TVET or adult education, the opposite to the norm in most countries of the world. In this regard the Heher commission notes (2017:66) two major weaknesses in the South African system as being 'the small proportion of college students as against students attending universities' and 'the number of unemployed and uneducated persons'.

The shape of the South African system in 2014, to scale, is depicted below (DHET, 2017b:52):

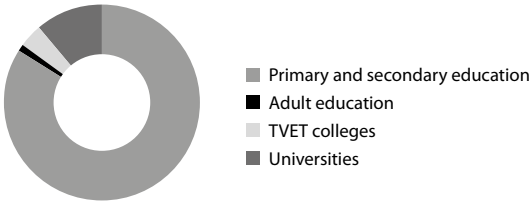
Figure 1: Shape of the post-school education and training system in South Africa, 2014



Source: DHET, 2017b

The proportions of the education budget for each component reflect even more strongly this post-school participation 'inverted pyramid'.

Figure 2: Education expenditure estimates, 2015/2016



Source: DHET, 2017b

Underfunding of TVET colleges

In TVET colleges, the state funds 80% of college costs, while the other 20% is made up of student fees paid directly by students or by the state in the form of student loans. The state's 80% component has seldom been fully paid according to the funding formulas and, in recent years, the size of the cuts has increased, leaving the affected colleges with severe budget shortfalls (made worse by their growing student enrolments).

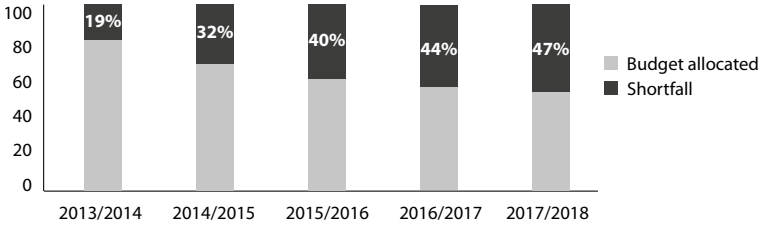
As an example, in 2013/2014, Treasury's total Medium-Term Expenditure Framework (MTEF) budget for TVET college education should have been R5.989 billion. However, the actual allocation budget was R4.845 billion.

TABLE 1: Estimated shortfalls in TVET college budgets: 2013/2014 to 2017/2018

	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
	R'000	R'000	R'000	R'000	R'000
Total budget required	5 989 000	8 569 656	10 218 558	11 580 733	12 885 164
Total budget allocated	4 845 000	5 827 173	6 179 574	6 513 122	6 838 778
Total shortfall	–1 144 000	–2 742 483	–4 038 984	–5 067 611	–6 046 386

Source: DHET, 2017b

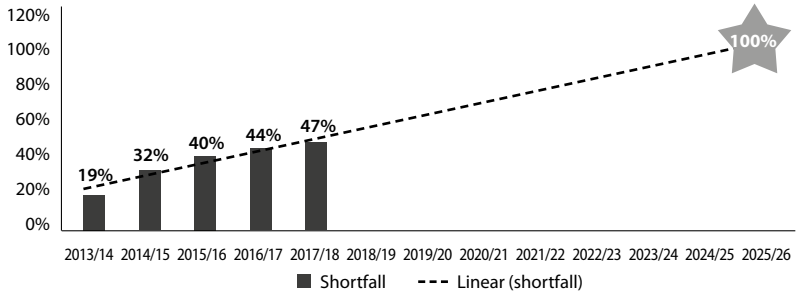
Figure 3: Estimated shortfalls in TVET college budgets (bar graphs)



Source: DHET 2017b

A trend line applied to this data shows an alarming (though one hopes impossible) projection, showing no money at all for TVET colleges by 2026!

Figure 4: Estimated shortfalls in TVET college budgets (trend line)



Source: DHET 2017b

These funding shortfalls need to be analysed in terms of both their general impact and their specific impact on TVET colleges in certain provinces.

First, the shortfalls render virtually impossible the expansion of TVET college provision to attain the growth goals set out by the DHET and the National Planning Commission (NPC) (DHET, 2012a, 2012b, 2013a, 2013b, 2015; NPC, 2012:319, 321–322).

TABLE 2: Estimated growth goals by 2030

Institutions (public and private)	2013 enrolment	DHET target: 2030	NPC target: 2030
TVET colleges	654 240	4 000 000	1 250 000
PALCs/community colleges	266 139		1 000 000
Totals	920 379	4 000 000	2 250 000

Source: DHET 2013a, 2015; NPC, 2012

The argument for this expansion is clearly set out in the report of the *Ministerial committee on the review of the funding frameworks of TVET colleges and CET colleges* (DHET, 2017a):

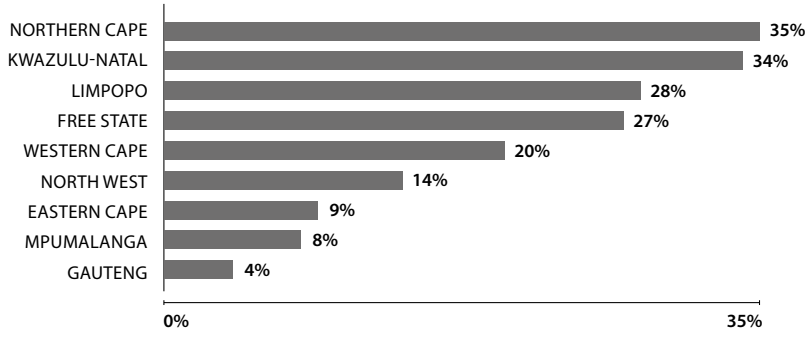
> In the economic development context in South Africa, the role of technical and vocational education and training is particularly crucial to the development of the country's manufacturing sector which at this point is seriously underdeveloped given the country's level of development. Moreover, one of the major constraints to the development of a manufacturing sector and a productive export strategy is the lack of 'middle level' skills in terms of technicians of various kinds, welders, plumbers, etc.

In addition, the reality is that TVET colleges (and more so PALCs/community colleges) serve students who are more disadvantaged (economically and educationally) than those who enrol at universities.

Secondly, the impasse created by the general funding shortfall is exacerbated by the continuing situation that funding for TVET colleges in different provinces is not being based upon a fair share of the national budget available but on the historical baseline funding carried over from the time when the TVET colleges were provincially funded.

The shortfalls in the provincial budgets needed to fund programme enrolments fully (funded full-time equivalents, or FTEs) and the percentage of unfunded FTE students are shown in Figure 5.

Figure 5: Programme budget shortfalls by province – 2012/2013



Source: DHET, 2017b

In the TVET colleges in KwaZulu-Natal, for example, the shortfall has been growing incrementally. In 2011/2012, the shortfall was R201 528 971; in 2012/2013, it was R459 207 247; and in 2013/2014, it was R943 852 306. The impact of this is described as follows (DHET, 2017b:87):

> Currently the KZN FET (TVET) colleges have to reduce, or not spend on essential items. These include investment in adequate staffing levels, student support, teaching materials and equipment, repairs and maintenance, etc. The consequence of this has been, and will be, poor pass rates, demotivated staff and students, deteriorating facilities and general under-performance. A further consequence will be the colleges' inability to further increase the number of enrolments and, therefore, not achieve the national growth targets as set in the minister's performance agreement. There may also be an overall decrease in total student numbers as the facilities continue to deteriorate.

As can be seen from the foregoing, the funding of the TVET colleges has been inequitable and insufficient. A fair distribution of funding would mean that the colleges would receive

equal rand values per weighted FTE student. Currently, the baseline used for the conditional grant reflects historical allocations to TVET colleges, which were very low in the Northern Cape, KwaZulu-Natal, Limpopo, Free State and North West provinces. However, redistributing the pool of available funding equitably to all provinces would disadvantage colleges in provinces where, in the past, more appropriate budgets were allocated to TVET colleges. A more acceptable way to correct these imbalances would be to secure additional top-up funding, which could be channelled to the colleges in the provinces that have historically been severely underfunded.

Underfunding of community colleges (adult education)

State-run adult education has always been poorly funded since the state-run night schools, called adult education centres or adult learning centres, or most recently PALCs, were reopened in 1977 (after their forced closure in the 1950s by the apartheid state). They were run through 13 of the various late apartheid-era education departments, then through the 9 post-apartheid provincial education departments, until finally they became the responsibility of the DHET in 2009. They gained some measure of legal identity with the Adult Basic Education and Training Act of 2000, but, with the abolition of the Act in 2013 and in terms of the Further Education and Training College Amendment Act of 2013, they were (by legal fiat on 1 April 2015) nominally merged into nine community colleges (DHET, 2017b:219–249). State-funded literacy campaigns were mooted in post-apartheid South Africa and were made presidential lead projects. But these were unfunded mandates and the private sector did not come to the rescue. However, in 2008, the well-planned Kha Ri Gude literacy campaign started and received about R4 billion in funding until its closure in 2016/2017. Unfortunately, its graduates were not successful in being provided with follow-up.

To achieve change in the funding of adult education, the only approach that makes sense is that a benchmark is set for the proportion of the national education budget that is awarded to adult education and training. Currently, the 0.7% allocation is derisory. Internationally, there has been advocacy for adult education to obtain at least 5% of education budgets, though few reach a 3% benchmark and it is generally below 1% in Africa, with mid-2000s exceptions such as Nigeria (2.43%), Mozambique (3.5%) and Cape Verde (8.7%) (Aitchison & Alidou, 2009:14–15). Ideally, as an interim measure, the overall budget should be increased immediately to 1.5% of the national education budget (a longer-term goal would be from 2.5% to 5%) and that certain percentages of the budget should be ring-fenced for personnel costs (including coordination), curriculum and materials, maintenance, and monitoring and evaluation (DHET, 2017b:245).

Education policy formulations in South Africa generally try to meet popular demands for equality. Scarce resources, however, have led to policy implementation choosing otherwise, even when the long-term consequences are known to be dire. Unless there is an *educated, informed* citizenry – one materially provided for by an economy that makes things for and

provides services to *all* the population – that has real agency in society, the majority of the young people of South Africa will remain on the road to the education dumping grounds.

Grasping the nettle

The under-resourcing of TVET and adult and community education has long been entrenched. The situation could conceivably deteriorate further if the university sector, in spite of its legitimate demands, continues to be funded at the expense of TVET and community colleges, which serve particularly disadvantaged sections of the population. The position will be exacerbated if that redistribution is made on the basis of short-term, populist political interests.

A better vision of what a vibrant TVET college and community college sector could look like is possible: the recent discussion document, *The ideal institutional model for community colleges in South Africa* (Land & Aitchison, 2017), provides an example of such a positive outlook for the sector.

The 'shape' of the post-school system must change if the government is to meet the variety of needs of a large proportion of the country's youths and adults. But the problems are of such a nature that tinkering with short-term ameliorative changes will not work; indeed, they will simply cause more pain in the long run – a case of merely stroking the nettle. Only boldly grasping the nettle will do.

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The shift to tertiary technical and vocational education and training and the demise of South Africa's former 'technikon' system

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ABSTRACT

Post-school systems of education and training have changed dramatically across the globe, including in South Africa, over the past two decades. It is ironic, however, that as many countries chose to renew and grow 'polytechnic-type' post-school education and training subsystems, South Africa (together with other countries from the Anglo-Saxon world) chose to reduce their role, largely through institutional mergers and processes of academic drift. Much of this difference in approach is path-dependent, shaped by the specific histories of capitalist evolution in each country. However, it also has to do with the faulty policy logic which has guided these changes over the past two decades. This article investigates the rise in significance of tertiary technical and vocational education and training (TVET) through brief case studies of two countries in Central and Northern Europe where the polytechnic sector has been expanded, not reduced. The discussion then shifts to South Africa, where graduation outcomes (in percentage terms) in the universities of technology have remained flat for more than two decades. The shift from secondary to tertiary TVET requires a significant expansion of enrolments and graduations in key applied technology fields, not the stasis we are seeing in South African universities of technology.

KEYWORDS

university of technology; tertiary TVET; polytechnic education institutions

Introduction

South Africa, along with many other countries in the Anglo-Saxon world, chose to reduce the provision of 'polytechnic-type' post-school education over the past two decades, primarily through institutional mergers and incorporations. This decision could not have come at a worse time, as skills requirements in the global economy have changed dramatically. These changes have suggested that the need for polytechnic education has become more important now than ever before. In fact, the current period has witnessed a dramatic shift globally in the demand for technical and vocational education and training (TVET) towards tertiary (or post-school) levels rather than at the secondary (school- or college-based) level. A diverse range of countries such as Finland, Ireland, the Netherlands and Singapore have witnessed a major expansion of TVET in the past two decades, especially tertiary TVET (applied higher education) alongside a strong economic emphasis on moving up the global production value chain. The shift to tertiary TVET is a response to the demand for higher-order applied skills that only a degree-awarding polytechnic sector can provide. This shift marks an end to the prioritisation of secondary TVET at the school and college levels. Tertiary-level TVET is now the educational prerequisite for success in today's global markets – and it takes place in polytechnics and colleges mandated to offer post-school, pre-degree qualifications alongside clear pathways into applied and technical degree programmes. In contrast to these global shifts, South Africa remains fixated on the problems of secondary TVET offered by its poorly performing TVET colleges.

The first part of this article is definitional: it describes what is meant by the term 'tertiary TVET' and the position it occupies in the overall national qualifications system. The second section examines the phenomenal growth of tertiary TVET globally, illustrating this through brief case studies of the Netherlands and Finland. The third section shifts the focus to South Africa's six universities of technology (South Africa's variant of a 'polytechnic' institution). It examines the background data for the six universities of technology that currently exist. The data suggest a sector that is relatively stagnant, with slow growth rates in key tertiary TVET areas. The final section provides an explanation for this stagnation and stasis – specifically the faulty policy logic of the post-1994 democratic state, which failed to align post-school education and training with these new (tertiary TVET) world realities.

The importance of polytechnic higher education

Explaining the growth of polytechnic education in certain countries of the world first requires a definition of what constitutes 'tertiary TVET'. This is best achieved by applying a national qualifications framework template which is present in most countries and has an increasingly standardised structure. Indeed, South Africa has instituted a National Qualifications Framework (NQF) with ten levels. The first observation to be made about this structure is that the secondary school (or further education) phase ends at NQF Level 4 (or Grade 12). More interestingly, NQF Levels 5 and 6 are post-school qualifications located within the higher education band, but which are pre-bachelor's degree programmes. The core focus of university provision begins at NQF Level 7 – the bachelor's degree through to the PhD (NQF Level 10).

It is the intermediate band of qualifications – which are post-school, pre-degree levels (NQF Levels 5 and 6) – and their progression into applied/technical degree programmes (NQF Levels 7 and above) that are termed 'tertiary TVET' in the international literature. The qualifications offered here are the para-professional and the mid-level technician positions that are career-orientated and that are required in large numbers in an increasingly sophisticated knowledge economy. 'Ramping up' provision in this intermediate band remains one of our greatest education and training challenges.

The myth of an all-pervasive high-skills 'knowledge economy'

Such a definition of tertiary TVET clashes somewhat with the contemporary idea of a knowledge-based economy (KBE) dominated by the need for 'high skills' across all sectors (Brown, Green & Lauder, 2001). Much of the debate within this dominant idea of the knowledge economy emphasises the need for university-level graduates with bachelor's degrees in professional and high-skill areas. The grand narrative about the transition to the KBE (e.g. Castells, 1996) creates the impression that all occupations in all sectors now require high skills for a knowledge-driven economy. This is a highly problematic generalisation and exaggeration for it ignores the continued reliance on old forms of production that continue to use low- and semi-skilled workers (Kraak, 2005). In addition, it ignores the centrality of intermediate skills in most economies and societies. As Kraak argues, the transition to a knowledge economy is premised on the exponential growth in the availability of skills at the intermediate (and not only the high-end) levels. He argues that the diffusion of the new high-skills production techniques is more uneven than is acknowledged in the international literature on globalisation and the knowledge economy. These techniques do not totally displace old forms of social and economic organisation, but rather co-exist alongside them. The reality of high-skills production is that it actually occurs in relatively few sectors in the advanced and leading East Asian developing economies, namely:

- information technology (IT);
- biotechnology;
- new materials beneficiation;
- pharmaceuticals;
- aircraft manufacture;
- machine tools;
- the high-skills end of financial and business services; and
- the high-skills professions in the civil service, law and medicine.

The analysis above clearly suggests that manufacturing and intermediate skilling continue to be important in advanced and developing economies across the globe (including South Africa).

The rise of tertiary-level TVET globally

The expansion of tertiary TVET has been most noticeable in a range of countries from Central and Northern Europe as well as South and East Asia – countries such as Finland, Ireland, the

Netherlands and Singapore – which have all witnessed a major growth of tertiary TVET (applied higher education) alongside a strong economic emphasis on moving up the global production value chain. One explanation for this expansion or 'ramping up' is that the rise of polytechnic institutions is an outcome of the democratisation of access to higher education globally, which has placed major pressures on governments to find the means of enrolling hundreds of thousands of first-generation, new higher education students. A varied clientele of differing social class strata has emerged in most national systems of higher education, which can be accommodated only through a more diversified system, ranging from the traditional elite universities through polytechnic-type institutions to post-school colleges.

The other (seemingly contradictory) pressure running alongside the forces of diversification is shifts towards the convergence of institutional type and function. Christensen (2012) makes the useful point that academic drift is not a new phenomenon: certainly not since the massive expansion of student enrolments globally from the 1970s onwards. The process of drift is much older and has been a key characteristic of the processes of professionalisation since the early beginnings of professional education. Elite pretensions and the continued striving after vertical distinctions have always acted to push educational requirements in a more genteel and theoretical direction and to make them less narrowly vocational (Christensen, 2012:146).

However, there are arguments that academic drift has intensified in the past decades. The strongest influence in this process has been the European Union (EU) and its Bologna process, which committed 30 European countries to moving towards a convergent structure of study programmes and degrees. The prime focus has been on implementing a common bachelor–master's framework to create a convergent structure of three years for a degree and two years for a master's degree. Teichler (2008:2) notes a growing imitative behaviour which stems from these convergent pressures.

The above discussion points to two seemingly contradictory pressures – divergence and convergence. The institutional shape and balance obtained within the higher education system after these pressures have been brought to bear are often of a hybrid nature, a mixed institutional typology of post-school provision. On the one hand, shifts towards a unitary system dominated by universities has taken place (as in Australia and the United Kingdom), but, on the other, the renewal of polytechnic-type institutions (as in Germany and its Fachhochschulen) and the creation of new polytechnics in the 1990s in countries such as Finland, Ireland, the Netherlands, Portugal and Singapore have also occurred.

Teichler (2008) argues that the idea of 'academic drift' – that non-university higher education institutions would assimilate themselves into universities and that this would lead eventually to the natural death of the two-type structure – is a misnomer. In reality, he argues, this upgrading took place in only a few (largely Anglo-Saxon) countries, while concurrently a significant number of other European countries saw a reverse process during the 1990s of the creation and strengthening of a two-type structure: university and polytechnic (Teichler, 2008:2). South

Africa, as a country within the 'Anglo-Saxon' path-dependent tradition, chose to go the United Kingdom route and upgrade its technikons into universities of technology.

Two central features of these new polytechnics in Europe (but also in the developmental South-East Asian states such as Singapore) are, first, the 'seamlessness' of progression through the post-school system from college to polytechnic to university. A second feature is the high level of participation by employed mature students in the polytechnic system alongside young entrants. Both of these elements are present in the brief case studies described below – the Netherlands and Finland – but these two defining elements are true for other countries such as Ireland and Singapore (for the latter two countries see Seng, 2012; Kirby, 2008).

The Netherlands TVET system

A major change was brought about in the Netherlands system at approximately the same time that changes were occurring in South Africa. New legislation in 1996 provided an entirely new institutional architecture for Dutch TVET (Visser, 2010:11). The 1996 Act devised a set of interactions between institutions which would ensure far more effective 'system alignment' and complementarity than had previously been the case (Sung, 2010:21). The new institutional elements that were introduced alongside existing institutions which were consolidated and merged included:

- A system of 17 sectoral bodies called 'knowledge centres' (*Kenniscentra*) was established along the lines of broad economic sectors. These centres play a crucial role as the 'starting point' for the design of national vocational qualifications. Employers play a key role in designing 'job profiles' of the skills needed in the economy. These occupational standards then serve as the basis for creating new qualifications that are taught by the regional training colleges (ROCs) (Cedefop, 2008:7).
- The creation of 43 ROCs formed out of the merger of hundreds of local training colleges. These colleges manage the 'school-based' learning of senior secondary vocational education. All students (in either work- or school-based pathways) follow the same qualifications that are designed by the centres. The ROCs have a strong regional development focus (Sung, 2010:21; Raddon & Sung, 2006:13).

The Dutch vocational education and training (VET) system has three levels. The system starts at a very early age, with Dutch children having to make their first educational choice at the age of 12: to choose a vocational track through high school. This route begins with junior secondary VET; it continues after compulsory schooling at age 16 in senior secondary school as 'secondary vocational education' (MBO); and it peaks in post-school education as 'professional higher education' – that is, applied or polytechnic higher education. Key statistics about the school VET sector indicate that:

- Vocational education comprises 16% of the total schooling system, but 35% of the secondary schooling system.

- Higher professional education – applied or polytechnic higher education – comprises 62% of all post-school tertiary training (Altinyelken et al., 2010:24).

In short, the tertiary TVET system is large in the Netherlands, larger than the academic track in higher education (Altinyelken, Du Bois-Reymond & Karsten, 2010:24, 34).

A major strength of the Netherlands model is its emphasis on growing tertiary TVET as the critical element in today's labour market (and not secondary TVET). Some of the MBO programmes extend beyond the basic school phase of 12 years of education. They start at the end of compulsory education at 16 years of age and end at an average age of 20 years. They then proceed to tertiary TVET. These trainees become highly skilled intermediate workers in the Dutch economy (Reubzaet, Romme & Geerstma, 2011:6; Cedefop, 2011:15–16).

The Netherlands also stands out for its excellent adult continuing TVET system. Social partners (employers and unions) decide through collective bargaining agreements to commit to training. A sector-based Training and Development Fund is then levied in the sector to fund such in-firm training. Currently, there are approximately 140 of these funds, which cover 85% of employees. Tax deductions are also available for firms who train their employees (Sung, 2010:20; Sung, Raddon & Ashton, 2006:64).

The case of Finland

Finland is a unique country defined by high levels of social inclusion, trust and reduced levels of inequality – all crucial ingredients in its rapid economic development since the 1980s. Castells and Himanen (2002) argue that it is precisely these qualities – a relatively equal and homogenous society – that has enabled Finland to make the dramatic leap from a resource-based economy to a knowledge society in a very short space of time. Finland's shift to the information society has been combined with retention of the main features of the welfare state and low levels of social injustice and exclusion (Dahlman, Routti & Anttila, 2006:34–36). The interventions in post-school education and training from the 1980s onwards put education, research and development (R&D) and innovation at the centre of its new industry policies, which emphasised the building up of localised economic clusters and regional economic development (Ylä-Anttila & Palmberg, 2005:2).

The central pillar of Finland's education system is that it is provided free. The quality of provision is excellent (Dahlman et al., 2006:102). The total education system consists of three levels, with a strong dual system of academic and vocational provision in both the upper secondary and the tertiary sectors. The vocational schooling system runs parallel to the general education track for the last three years of secondary schooling. Significantly, 40.1% of learners exiting the junior secondary phase choose vocational schools. This is a high participation rate in the senior secondary vocational phase, largely due to the fact that it is of equivalent status in the labour market to that of the general schooling track and it also enables access to a university education (MoE, 2008:24).

Adult education in polytechnics is also well developed in Finland. It is characterised by high participation levels by adult employees – 57% of all employed 25–64-year-olds – and high levels of public funding. The participation rates in other Organisation of Economic Co-operation and Development (OECD) countries are far lower: for example, Germany at 18% and an OECD average of 34% (MoE, 2008:37).

Higher education

Higher education is free in Finland, and, as a consequence, participation rates are very high – at 85% of the 18–24 age cohort, this is one of the highest in the world (Dahlman et al., 2006:102). There are currently 20 universities and 29 polytechnics in Finland. Ten of the universities are multidisciplinary institutions and the other ten comprise three technical universities, three schools of economics and four schools of art. They are all publicly funded. Ten of the polytechnics are privately run. There were 114 730 polytechnic students and 152 198 university students in 2007 – a total of 266 928 students in higher education (MoE, 2008:37–39).

The polytechnics are a recent institutional addition to the education system. They were introduced in the early 1990s – initially in a piloting phase (to ensure quality and standards) from 1991 onwards, and then more permanently since 1996. They were formed out of the amalgamation of former post-secondary vocational institutes. The polytechnics emphasise connections with work and practice. The research conducted in polytechnics involves cooperation with private and public enterprise. They are multidisciplinary in focus and regional in organisation so as to contribute to regional development and regional innovation systems. They offer bachelor's and master's degrees which articulate well with the university system (Schienstock & Hämäläinen, 2001:162).

The new global role of polytechnics

Transforming the role of the polytechnic – as has been illustrated above with two brief country case studies – has not simply been a case of increasing their numbers and ramping up enrolments. Nor is it only to do with the seamless progression between the secondary and tertiary vocational and academic tracks which characterise these national systems. Transformation in the polytechnic sector also has to do with a changed mode of interaction with other key stakeholders in society. This refers specifically to a new applied R&D focus allocated to polytechnics and to encouraging polytechnics' active participation in local and regional economic development – an industrial policy approach that is lacking in South Africa.

Applied R&D in regional settings

The changed role for polytechnic-type institutions – certainly in the two country case studies described above – arose as part of the new interactive dynamics driving leading national economies. Contrary to the conventional logic that globalisation involves the weakening of the boundaries of local, regional and national economies and in so doing privileging the cross-

border powers of multinational corporations, work done by economic geographers (Scott, 2006), evolutionary economists (Fagerberg, Mowery & Nelson, 2005) and innovation studies writers (Lundvall & Borrás, 1997) over the past two decades has critiqued this proposition and has proposed a new economic logic that now dominates much public policy dialogue. This logic argues that 'location' still counts and that local and regional economies are critical to national growth strategies (Richards, 2012). Understanding this shift in the dominant economic logic globally is important, as it has a number of implications for the polytechnic sector.

The new economic logic points, first, to the shift in production systems towards greater knowledge intensity. The basis for new economic rents is not so much found in the materials production sphere as it is in value-adding activities such as design, branding and marketing. Tangible resources such as land, technology and capital have become increasingly widespread. Because of this, the new competitive advantage lies in the intangible resources of firms (Kaplinsky & Morris, 2001:101). Secondly, these intangible resources are often best captured locally, largely because they are 'tacit' knowledge resources embedded in the firm and its workers. Today, tacit knowledge is the primary competitive asset of firms. It is practical, experiential knowledge which all employees in work contexts acquire – including managers, R&D specialists and shop-floor production workers. It is the opposite of codified knowledge, which is formal and procedural, organised in a range of academically based disciplines and publicly available through academic study and research.

Clearly, 'localisation' is now key. Even in the age of IT, with the death of distance as an obstacle to economic advance, some knowledge still remains 'sticky' – it can be harnessed only in local production settings, and is intelligible only to those closed groups who work with it daily (Coenen, Asheim, Bugge & Herstad, 2017). But there are other benefits to localisation. The most important is that of knowledge spillovers by which firms derive advantage from locating themselves close to one another, because this provides privileged access to diverse knowledge and networks within and across firms and related industries (Coenen et al., 2017:6). A third factor is a new emphasis on decentralising the governance of economic development to local and regional settings. For example, Richards (2012:121) argues that economic development is best advanced by a decentralised, local governance approach. Economic development occurs as a complex interlocking of a set of social, economic and political factors which are best dealt with by state policy at regional and local levels.

It is in this new economic context that polytechnic education institutions have a critical role to play. The polytechnic is a key institution in the wider cluster or city-region that plays a critical and distinctive role in processes of localised knowledge formation and sharing, working alongside firms and other co-located players such as intermediaries and private training academies to promote the locality or region's economic wellbeing. These economic changes have resulted in a very important redefinition of the role of polytechnic-type institutions. Whereas previously, polytechnics were not involved in research activities, in today's conception of a polytechnic, applied R&D is a critical function, often defined in regional settings and in partnership with industry and government (Scheinstock & Hämäläinen, 2001:162). James, Guile and Unwin

(2011) note that the local and regional economic development literature (including cluster studies) suggests that, although skilled labour is important, it is the way in which production processes are organised and institutionally supported within localised networks that is crucial. They suggest that 'learning' in this literature is interactive and context-dependent. Therefore, successful learning is the outcome of interactions and relationships between firms and other institutions such as polytechnics within favoured regions (James et al., 2011:4).

Firm–polytechnic interaction

The primary focus of the wider evolutionary innovation and economic geography school as discussed above has been the study of 'the firm' as a social as well as an economic organisation and, in particular, the role played by 'learning' within the firm as the main basis for competitiveness in the global economy. Competitiveness here is seen as an endogenous activity, built from within the firm, primarily through the effective harnessing of the tacit knowledge capabilities of the firm. The tacit is situated expertise; it resides in the organisational routines of the firm and it is also 'embedded' in its skilled labour and a localised or regional economy. Firms maximise their tacit capabilities internally by cooperating with other firms co-located in the same neighbourhood or region. They do so externally through working with organisations such as colleges, polytechnics and state regional development agencies which provide incubation and business development support along with various financial incentives. Through all of these activities, firms are able to share and expand their stock of tacit knowledge and, in so doing, build on their market competitiveness (Boschma & Martin, 2010:5).

Esser, Hillebrand, Messner and De Meyer-Stamer (1996:3) argue that institutions such as universities, polytechnics, vocational colleges, R&D institutions, technology transfer offices and small-business development agencies become key locational assets for the regeneration of a locality or a region. Interactional dynamics between firms and these locational assets help to build up the industrial site by strengthening locational factors such as education and R&D. These network relations have become a new form of capitalist organisation – a 'third arena of allocation between markets and hierarchies' (Esser et al., 1996:63). In short, the key unit of competition in the global economy now is not the solitary firm acting competitively but the clusters or groups of firms organised in networks and the efficiency of the interactions between these firms and key locational assets such as polytechnics, R&D facilities and the like.

Interactive dynamics in Finland

A regional focus is evident in the way polytechnics were launched in Finland in 1993 – they are multidisciplinary and applied in focus and regional in organisation so as to contribute to regional economic development. The new polytechnic role is evident in the emphasis on cluster economic policy since the early 1990s. Such a policy emphasises the importance of locational competition and knowledge spillovers (Ylä-Anttila & Palmberg, 2005:12–18; Dahlman et al., 2006:77–78). Cluster policies, by their very nature, have a strong local and regional focus. Centres of expertise have been established in peripheral regions as multi-organisational constellations incorporating

polytechnics, hospitals, firms and science parks – for instance, those in the biotechnology area. In addition, the 'employment and economic development centres' (T&E centres) are development agencies that work with small and micro-enterprises (SMEs) and fall under the Department of Trade and Industry. They comprise a network of 15 regional offices across Finland. The remit of these agencies is to serve the needs of SMEs by providing business support services, consultation and advice, as well as financing. They use the services of the polytechnics to develop SME support services (Ylä-Anttila & Palmberg, 2005:11).

The South African universities of technology

The discussion now shifts to South Africa. The central question is to what extent South Africa's universities of technology have prospered and grown in the way that the Dutch and Finnish polytechnic systems have over the past three decades.

A first observation is that the South African higher education system did grow significantly in the immediate post-apartheid period. Subotzky (2003) provides a statistical picture of this growth, distinguishing between technikon and university growth in terms of the production of graduates. A key trend visible in Table 1 is the rapid growth of technikon graduates in the immediate aftermath of the collapse of the apartheid restrictions on black students entering formerly whites-only institutions. Graduation numbers shot up by 126% in the technikons between 1988 and 1996.

TABLE 1: Percentage distribution of graduates between universities and technikons, 1988–2000

Year	University graduate numbers	University graduations as a percentage of total higher education graduations (%)	Technikon graduate numbers	Technikon graduations as a percentage of total higher education graduations (%)
1988	42 193	83	8 580	17
1996	66 426	77	19 388	23
1998	64 701	76	20 558	24
2000	67 028	76	21 221	24

Source: Subotzky, 2003:352

Unfortunately, the growth boost triggered by the advent of democracy in 1994 did not last, and the percentage of graduations from technikon institutions settled at around 24% of total graduations in higher education. Factors behind this slowdown in growth included efforts by the Department of Education (DoE) to slow growth, as well as the cost of higher education proving to be a major obstacle to many working and lower middle-class families. The DoE indicated in July 2004 that it intended to cap headcount enrolment in higher education from 2005 onwards – because of funding constraints, poor throughput rates and high dropout levels. The effect of this decision was a slight drop in total enrolments in 2005 and flattened growth

for a few years after that – all within a range of 720 000 to 740 000 students in the higher education system (DoE, 2005; Taylor, Fleisch & Shindler, 2008:60).

These problems were exacerbated in the period 2004–2005, when the technikon landscape was dramatically restructured through mergers and incorporations: 15 technikons were restructured and reduced to 6 universities of technology and 3 comprehensive universities. The latter change entailed the merger of a technikon and a university to form a comprehensive university. The three comprehensives – Nelson Mandela Metropolitan University, the University of Johannesburg and Walter Sisulu University of Science and Technology – are being excluded from this analysis of polytechnic capabilities because it is difficult to determine the extent of the applied or technical qualifications being offered at these institutions. This dilemma has emerged as a consequence of the process of academic drift that is occurring in these institutions as they try to enhance their 'university' status in terms of new priorities such as improving research output and increasing the number of postgraduate students, the publication rate in accredited journals and the number of staff with PhDs.

Notwithstanding these important institutional changes, Table 2 reflects strong continuities in the production of polytechnic capabilities prior to and after the mergers and incorporations. The number of graduates (in percentage terms) emanating from the universities of technology in 2015 is precisely the same as it was in 2000 – at 24% of all higher education graduates.

TABLE 2: Total graduations in the university of technology sector, 2015

University of technology	Graduations
Cape Peninsula University of Technology (CPUT)	8 342
Central University of Technology (CUT)	3 388
Durban University of Technology (DUT)	6 548
Tshwane University of Technology (TUT)	12 696
Vaal University of Technology (VUT)	3 976
Mangosuthu University of Technology (MUT)	2 491
Total number of graduates in the university of technology sector in 2015	37 441
University of technology graduates as a percentage of the total number of higher education graduates in 2015 (which was 191 524)	24%

Source: The Higher Education Management Information System (HEMIS) does not produce detailed university of technology data. Hence, Tables 2–5 have been produced by the author from data extracted from the online HEMIS database of the epartment of Higher Education and Training (DHET).

This flattening out of the number of graduates emanating from the universities of technology since 2000 (at 24%) is the central problem addressed in this article. The phenomenon of no growth (in percentage terms) in applied tertiary-level capabilities runs counter to developments

elsewhere in the world, where polytechnic graduations have grown rapidly over the past two decades – in both aggregate and percentage terms.

Three-year diplomas and the BTech

A significant component of the total university of technology graduations in 2015 was the three-year National Diploma and the four-year Bachelor of Technology (BTech) qualifications. Table 3 provides the core graduation data for 2010–2015:
The National Diploma is the primary qualification offered by the university of technology sector. Graduations in Business, Economics and Management Studies are by far the largest category (36.8%), followed by Engineering Studies (21.2%), Public Management (9.1%) and ICT Studies (6.7%). The fact that Applied Engineering Studies represents only 21.2% of all graduates emanating from the university of technology sector is problematic for a polytechnic-type institution.

Table 4 traces the extent of progression by three-year National Diploma graduates into the degree-level programmes at universities of technology: the BTech degree. This is one of the only pathways for tertiary TVET graduates into the degree-awarding component of higher education. There is a highly divergent growth pattern here, varying between 20% and 64% for five of the universities of technology, and 275% growth for MUT, which grew from an extremely low base in 2010.

Although the growth patterns of the BTech in South Africa over the past five years may appear reasonable, the percentage of degree graduates in the higher education system that have a specifically vocational or applied degree is still very small. Taking the BTech as the core 'applied' degree programme in the South African higher education system, Table 4 suggests it was only 6.6% of all graduates in the higher education system in 2015.

Similarly, the specifically Engineering component of the overall BTech programme is small. Table 5 indicates that only 2 239 graduates in 2015 out of a total of 12 650 BTech graduates across the six universities of technology studied Engineering – amounting to 18% of all BTech graduates. This is an extremely low progression pathway for Engineering into degreed tertiary TVET. It suggests a very weak engineering or applied/technical 'character' associated with these universities of technology.

TABLE 3: Post-school, non-degree university of technology graduates with three-year diplomas, 2010–2015

CESM category	Graduates with three-year diplomas						Percentage distribution
2nd-order CESM category	2010	2011	2012	2013	2014	2015	2015
01: Agriculture, Agricultural Operations and Related Sciences	660	749	816	804	802	934	4.3
02: Architecture and the Built Environment	523	627	569	636	649	601	2.8
03: Visual and Performing Arts	700	737	833	734	730	833	3.8
04: Business, Economics and Management Studies	7 345	7 830	8 296	7 919	7 865	7 983	36.8
05: Communication, Journalism and Related Studies	470	547	533	571	513	569	2.6
06: Computer and Information Sciences	1 373	1 481	1 727	1 704	1 621	1 442	6.7
07: Education	81	23	33	23	29	32	0.1
08: Engineering	3 456	3 609	3 759	4 495	4 916	4 592	21.2
09: Health Professions and Related Clinical Sciences	843	920	942	895	905	923	4.3
10: Family Ecology and Consumer Sciences	89	161	96	113	111	107	0.5
11: Languages, Linguistics and Literature	116	125	218	235	286	315	1.5
12: Law	104	144	249	221	225	310	1.4
13: Life Sciences	284	290	336	353	367	381	1.8
14: Physical Sciences	539	591	512	495	526	550	2.5
15: Mathematics and Statistics	4	11	8	17	24	17	0.1
16: Military Sciences	0	0	0	0	0	0	0.0
17: Philosophy, Religion and Theology	0		0	0	0	0	0.0
18: Psychology	0	0	1	0	0	0	0.0
19: Public Management and Services	1 550	1 670	1 761	1 869	1 799	1 965	9.1
20: Social Sciences	62	71	80	89	71	75	0.3
Total graduations	18 200	19 588	20 771	21 176	21 439	21 678	100

Source: Data extracted from the online HEMIS database of the DHET

TABLE 4: University of technology graduates with a four-year BTech degree, 2010–2015, per university

Year	CPUT	CUT	DUT	TUT	VUT	MUT	Total university of technology graduations	Total graduations in higher education	Share of BTech graduates as a percentage of total higher education graduations (%)
2010	2 663	780	1 873	2 804	830	59	9 009	153 325	5.9
2011	2 798	916	1 790	3 035	895	164	9 598	160 625	6.0
2012	2 923	1 122	1 834	2 989	1 006	93	9 967	165 995	6.0
2013	3 119	1 175	2 162	3 176	1 268	164	11 064	180 823	6.1
2014	3 293	1 269	2 258	3 540	1 100	242	11 702	185 373	6.3
2015	3 299	1 283	2 469	4 384	994	221	12 650	191 524	6.6
Percentage change between 2010 and 2015	24	64	32	56	20	275	40	25	0.7

Source: Data extracted from the online HEMIS database of the DHET

TABLE 5: University of technology graduates with a four-year BTech degree in Engineering, 2010–2015, per university

Year	CPUT	CUT	DUT	VUT	MUT	TUT	Total number of Engineering BTech graduates	Total BTech graduates in all fields per year	Engineering BTech graduates as a percentage of total BTech graduates in all fields (%)
2010	381	185	243	202	8	434	1 453	9 009	16
2011	381	111	283	253	11	391	1 430	9 598	15
2012	377	217	303	289	4	452	1 642	9 967	17
2013	442	200	329	325	8	484	1 788	11 064	16
2014	462	260	343	290	16	596	1 967	11 702	17
2015	423	350	456	324	15	671	2 239	12 650	18

Source: Data extracted from the online HEMIS database of the DHET

The data presented above are highly problematic because they indicate the slow growth in the university of technology sector and because they indicate the small proportion of graduates with applied or technical qualifications in the overall higher education system. Because of this,

South Africa is falling far behind developments in the TVET sector globally. For example, in the Dutch system almost 62% of those in higher education are in an applied vocational field at a university of professional education (polytechnic), with a high proportion acquiring applied degree qualifications (Altinyelken et al., 2010:24). In South Africa, the figure for graduates with applied or technical qualifications from polytechnic-type institutions is 24%, with the critical field of Engineering Studies only a small component.

The demise of South Africa's universities of technology

A number of problems with South Africa's universities of technology have already been raised. These include: the dramatic reduction in the number of polytechnic-type institutions; academic drift; poor progression in the post-school system, especially from the universities of technology into the university sector; the lack of growth in engineering and technology graduations; and the lack of interactive capabilities ('articulation') with industry.

The demise of South Africa's former technikons – as has been outlined above – clearly arises from a series of policy errors which are outlined below. The discussion will cover two causal factors which have significantly weakened the technikon sector in South Africa. The first is a flawed higher education policy process regarding the former technikons. The second is a flawed industrial and innovation policy which has underemphasised tertiary TVET and has failed to recognise the important contribution universities of technology could play in regional and local economic development.

Flawed higher education policy process regarding the former technikons

The higher education policy process from the mid-1990s to the mid-2000s was characterised by significant turmoil and conflict. It was also hamstrung by major infrastructural and financial resource constraints. As a result, non-optimal policy outcomes have emerged with regard to institutional mission and differentiation. These include a tendency towards academic drift, which is strong across the system (see DoE, 2005; Badsha & Cloete, 2011:16), and the weakening of the distinctive applied role that universities of technology should play.

The higher education policy formulation process from the mid-1990s to the mid-2000s vacillated between two opposing positions: support for a single or unified system of higher education, versus support for the continuation of the binary divide between universities and technikons. The official position adopted in the White and Green Papers of 1996 and 1997, and enshrined in the Higher Education Act of 1997, was that of a single system regulated as a coherent whole, applying uniform norms and procedures with sufficient flexibility to allow for diversity in responding to the multiple needs of highly differentiated learner constituencies.

The second position evolved as a result of the considerable opposition to the idea of a unified system during the deliberations of the National Commission on Higher Education (NCHE), which sat in 1996. This opposition arose from two sources: from the technikons themselves,

and from the heads of the historically disadvantaged institutions (HDIs), which believed the new approach would yet again put them at a disadvantage because of their lack of capacity to respond creatively to new programme offerings. The interim discussion document of the NCHE reported that elements in the technikon sector had made submissions that argued strongly for retaining and reinforcing the technikons as a distinct sector with a unique mission in higher education (NCHE, 1996:55).

The evolution of the idea of a single system, termed 'flexible differentiation' in the NCHE documents, would occur according to institutional missions and programme mixes. Institutional differentiation in this context would evolve in line with a planned process based on emerging national and regional needs and not the inherited sectoral location of the institution (NCHE, 1996:56–57). The government's twofold position on institutional differentiation – retaining functional differentiation in the short to medium term while moving towards flexible differentiation (a single system) in the longer term – was sustained throughout several iterative policy rounds during the period under review. The government's primary concern throughout this period was that, in moving towards a single system regulated by uniform norms and standards, the programme distinctions between technikons and universities should not be eroded (Kraak, 2006).

Resource constraints and rationalisation

Running alongside this policy discourse on differentiation was a related yet distinct policy problem: resource constraints and the need to rationalise and merge South Africa's 36 institutions of higher education. The National Working Group (NWG) – the final policy initiative appointed by the Minister of Education to reform higher education in 2001 – proposed an entirely new institutional landscape comprising four differing types (DoE, 2001). The government accepted most of the recommendations of the NWG, committing itself to maintaining, in a flexible manner, the existing mission and programme differentiation between technikons and universities for at least the next five years (DoE, 2002:7).

Most of the institutional mergers occurred during the period 2004–2005. The new landscape shaped by this process of merger and incorporation created a new basis for institutional differentiation. The result was 25 institutions representing four diverse types: 11 universities, 6 universities of technology (the former technikons), 6 comprehensive universities and 2 national institutes of higher education. Significantly, these four institutional typologies emerged not because of a comprehensive policy or research process focused on developing a new basis for differentiation, but rather as a by-product of the merger and incorporation process. In particular, they were the outcome of the politics of negotiation which accompanied the decisions about which institutions would be merged or not and which would become comprehensives or universities of technology. Very little research or policy work was done by the state on what the roles of the new institutions would be.

Emergence of the universities of technology

The higher education policy process from 1996 to 2006 was not commissioned specifically to study the manner in which technikons execute their applied or polytechnic functions; nor did it concern itself with making an appropriate distinction between the research functions of universities and polytechnics. Policy and the subsequent legislation distinguished these two institutional entities purely on the basis of their differing teaching programmes – the one primarily offering national diplomas (with some BTech degrees), the other offering degree and postgraduate qualifications across the board. Universities of technology were formally instituted by the Minister of Education in October 2003 under duress resulting from pressure exerted by the Committee of Technikon Principals, which sought the name change from 'technikon' to 'university of technology'. In so doing, this decision was not informed by a rational process of policy development, but rather by administrative fiat that had its origin in political lobbying. No government policy documentation has evolved to explain the new category 'university of technology' and its institutional functions (Kraak, 2006). The outcomes of this flawed process have resulted in the diminution of the polytechnic function in South Africa, with only six universities of technology remaining.

Flawed innovation and industrial policy

Another sphere of South African public policy which ignores the unique role of the universities of technology is that of innovation policy. Innovation policy falls within the purview and under the control of the Department of Science and Technology (DST) and not the department that regulates higher education institutions – which is currently the DHET. There are significant differences between the ways these two departments deal with universities.

In pursuing its innovation policy premised strongly on high-end R&D, the DST's website unashamedly lists only 7 universities out of the current 25 higher education institutions as being part of the national system of innovation. Furthermore, many of its research levers, such as the Innovation Fund and the Technology and Human Resource for Industry Programme (THRIP), are designed to promote innovation-aligned research at these institutions. In contrast, the DHET does not formally recognise the label 'research university' and attempts to regulate the system of 25 institutions as a single system. In neither department, therefore, is the potential role of polytechnic-type institutions – and their applied R&D – given explicit consideration.

Dalitz and Toner (2016) raise a similar point with regard to Australian innovation policy. They examined the exclusion of the TVET sector in major government reports on Australia's innovation system. They found that almost all of these reports present skills development as a principal driver of the Australian national innovation system (NIS). Notwithstanding this, they found that both the secondary and the tertiary TVET systems were excluded from government policies on NIS (Dalitz & Toner, 2016:55). These authors find this observation highly contradictory of much of the economic analysis undertaken within Australian and global innovation studies, which recognises that skills generated by tertiary TVET systems and the

learning processes they promote through interactions with firms are central to the incremental innovation that occurs in many industries (Dalitz & Toner, 2016:55). Dalitz and Toner (2016:58) conclude their analysis by noting that it is the problem of 'departmentalism' in Australia which leads to innovation and education policy being treated as 'only loosely connected in the actual process of policy formation and implementation as compared to the rhetoric of politicians and reports'.

Neglect of the economics of 'localisation'

The South African government, through its science and economic departments (the DST and the Department of Trade and Industry (dti)), has neglected the 'economics of localisation' and endogenous firm development, as discussed earlier, with more resources and energy going to high-end R&D. The government has not fully understood this second mode of innovation based on incremental improvement in productive capabilities developed internally within firms. This has meant that university R&D has been prioritised and applied forms of research and development in universities of technology have received less attention.

This neglect of the interactive, incremental mode of innovation has strong parallels with the neglect of secondary and tertiary TVET in innovation policy in South Africa. One of the clearest indications of the neglect of the applied research role of polytechnic-type institutions in South Africa emerged from a 2007 OECD study of South Africa's NIS. The OECD authors outline their key concept of 'DEEM' (Design, Engineering, Entrepreneurship and Management), which signifies a set of intermediate to high-level competencies needed in the workplace by the middle-to-senior workforce that only a 'polytechnic' mode can develop in any higher education system. In their notion of production, DEEM plays a crucial adjunct role to the more formalised and higher-order R&D function. The report argues that DEEM capabilities are best produced through high levels of institutional interaction between firms and external agencies such as polytechnics in localised and/or regional settings. It is these internal DEEM capabilities that define a firm's dynamism – its ability to overcome uncertainty by changing and doing things differently and operating more effectively.

Polytechnic entities such as the former technikons and the specialist industrial subdivisions of the Council for Scientific and Industrial Research (CSIR) were crucial in providing DEEM support activities to firms in the past. They provided R&D and technology transfer services that had more direct industrial application, typically helping companies to move a little beyond what their internal capabilities would otherwise permit, reducing the risks and increasing the rate of incremental innovation. The traditional university system is not a good tool for providing this kind of support. The OECD report argues that South African industrial policies ignore these important DEEM capabilities and the potential contribution of universities of technology to economic growth (OECD, 2007:112).

Such a conception of DEEM – as a specific non-R&D capability crucial to industrial renewal and yet distinct from formalised R&D activities promoted by the innovation policy of the

DST – was not present in the higher education or innovation policy formulation processes of the late 1990s and early 2000s. The reasons for the neglect of these DEEM activities are complex, but a number of causal factors can be identified. First, the phenomenal growth of the services sector in South Africa and globally over the past two decades has shaped perceptions that this structural shift has coincided with a diminution of the contribution of manufacturing. This perception is, of course, erroneous, but it has contributed, secondly, to a dramatic change within the universities of technology away from the hard engineering and applied sciences towards courses in the soft sciences such as commerce and management, the humanities and the social sciences. Indeed, these processes of 'academic drift' have led the universities of technology to abandon their traditional DEEM role. Thirdly, in recent years, the universities of technology have concerned themselves largely with the processes of certifying graduates in qualifications across the whole gamut of academic fields. There has not been an equivalent focus on their distinctive applied research role or with their interaction with firms in local or regional settings, in order to apply considerable engineering and technical expertise, particularly in DEEM fields.

Conclusion

The political and economic restructuring that accompanied the demise of apartheid and ushered in the new democratic dispensation brought with it severe costs for the DEEM function, the most punitive of which was the rightsizing and/or privatising of the state-owned enterprises. In so doing, the strong cooperative relationships previously built up between the state-owned enterprises, the technical colleges and the technikons to train and skill artisans, technicians and technologists were scaled down and, in many instances, permanently lost (Kraak, 2008).

These changes have coalesced over the past two decades in such a way that the universities of technology have become concerned primarily with teaching and instruction at the considerable expense of the applied design, engineering and related management and technical functions of private firms. Although references are made within the university of technology sector to its having an applied role, it would appear that no distinctive official philosophy has emerged that distinguishes these universities from the academic universities with respect to intermediate skilling and applied research work. Accordingly, the risk of further academic drift continuing unabated is high.

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Researching vocational education and training: An international perspective[1]

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ABSTRACT

This article investigates a German initiative to fund a research programme on international development cooperation in vocational education and training (VET). It briefly describes the strands of the programme and critically reflects on them. It is considered important that this programme be initiated to stimulate research on international VET development cooperation because, while there are institutes for and programmes on VET research, research on VET is modest in volume compared with that of educational research on elementary or secondary education. The article also considers priority areas for VET research that are part of the programme and expands on these, using a number of VET research themes and topics. An important conclusion is that in research on international VET development cooperation it is important to pursue a balanced approach by taking the practical, political, administrative and scientific factors into account. These factors all play a role at the national, regional and local levels. Too much pragmatism or too isolated a scientific specialisation should be avoided. Respectful cooperation between all the stakeholders is imperative, and is especially important in projects that combine researchers with a predominantly long-term perspective and teachers and managers with a mainly short-term outlook. Finally, I express the hope that more national governments would follow the example of Germany. Their doing so would definitely raise the profile of international VET research, which is absolutely needed.

KEYWORDS

vocational education and training; VET research; international cooperation; research funding; continuous professional development; vocational education

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Introduction

Most countries in the world have educational research programmes. The same holds true for continental or global institutes such as those of the European Union (EU) and the Organisation for Economic Co-operation and Development (OECD). However, not many investors in educational research have research on initial and continuing vocational education and training (VET) high on their agendas. There are institutes and programmes, but compared with the volume of educational research on elementary or secondary education, research on VET is modest in volume. Large international organisations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Labour Organization (ILO), the World Bank and the OECD do have international cooperation programmes and regularly publish their research (OECD, 2015; World Bank, 2018). However, there was a time when investment in VET was discouraged, such as by the World Bank (Psacharopoulos, 1973, 1985, 1994; Psacharopoulos & Patrinos, 2002) and when respected researchers (Dronkers, 1993) presented research that advised the public to follow general education tracks instead of vocational tracks.

While there may be compelling statistics to back up these views, VET is often the right choice for many students. Instead of seeing vocational education as a second choice, it would be better to position it as a first choice, given the need for well-educated graduates in vocations and professions at the lower, intermediate and higher levels, albeit that these needs may be geographically diverse. Youth unemployment may be an impeding factor, but should not be an excuse for disinvesting in and discouraging the choice of vocational education. On the contrary, VET provides skills which are badly needed, more particularly in countries or regions where economic and labour market conditions are challenging. If jobs are not available, VET can also play an important role in contributing to self-employment and entrepreneurship. An important element in the advocacy of VET is research that builds a knowledge base regarding the questions that confront VET across the world. In view of this, the following sections highlight a particular knowledge-building initiative and its intended research programme.

A new programme on research on the internationalisation of VET

Given the scarce funding available to VET researchers outside the few large institutions mentioned above, it is exciting that some countries are starting their own international VET research programmes. An illuminating example of this is the international VET research programme of the Institute for Vocational Training Research (IBBF), the Internationalisation of Vocational Education and Training unit of the Federal Ministry of Education and Research in the Federal Republic of Germany.

It is in fact not very surprising that Germany took the initiative to strengthen research on VET from an international perspective, since the body of knowledge already accumulated by German VET scholars during the past few decades is impressive (Rauner, 2005). This scholarship has become a beacon in the world of international VET theory and research. Various themes have been popular in German VET research: the dual system (Spöttl, 2016), vocational didactics

(Nickolaus, 2008), VET curriculum development (Reetz & Seyd, 2006), VET teacher training (Kunter et al., 2013), competence modelling and measurement (Bonz, 2001; Cortina & Thames, 2013), and VET research itself (Sloane, 2006).

The international VET research programme of the IBBF mentioned above covers four research themes which are well known in VET research and which are relevant in the context of international VET development. These themes are:

- cooperation between employers and trade unions, industry organisations and the government;
- learning within the work process;
- acceptance of national standards; and
- qualified vocational education and training staff.

Research on these themes is, however, not unproblematic and the following precautionary considerations should be observed in respect of each of the themes.

Cooperation between employers and trade unions, industry organisations and the government

The first research theme is about the cooperation between employers and trade unions, industry organisations and the government. This is a strong asset of the German VET system; it reflects the value which is attached to sectoral social dialogue within the EU (European Commission, 2016). In international development, however, VET research should rest on the assumption that there is either no or an underdeveloped level of sectoral social dialogue in VET. When well established, the sectoral social dialogue can result in innovative VET policies and practices, but it becomes problematic when there is little organisation of the dialogue, when partners do not intend engaging in dialogue at all, or when the knowledge gaps between the government, education and industry are so wide that little value can be added by maintaining relationships.

Whereas the development of relationships in education is seen as essential to educational change (Fullan, 2016), there are enough countries in the world where this important notion is difficult to realise. For instance, in agricultural VET development projects in Ethiopia, Kenya and Uganda, which were based on an inclusive model of cooperation between producers' associations and education and government agencies, real sectoral social dialogue proved to be extremely difficult. Access to companies, effective government facilitation and the responsiveness of education all appeared to be quite challenging (Mulder & Gulikers, 2011; Mulder & Kintu, 2013). But the participation of social partners for innovation in vocational education is not confined to developing countries, as a study of EU VET development projects, for instance, revealed that the participation of social partners is not self-evident and needs special attention (Mulder, 2006).

Therefore, research on international VET development should be aware of the complexities of the cultural, structural and economic factors that affect VET as a social practice and should

assume that these factors will play out very differently compared with the home country of the researchers or their funders.

Learning within the work process

The second theme is learning within the work process, which is understood to be a key component of real competence development in the practices of work, as has been put forward by Billett, Harteis and Gruber (2011) and others (Malloch, Cairns, Evans & O'Connor, 2011). However, while being very topical these days, it is not a given that all work processes allow learning that is productive for the person, the team and the organisation. Work situations differ to the extent that they are supportive of learning: much is dependent on the learning culture of the organisation (Senge, 1990; Marsick & Watkins, 2003). Many students and starting workers are bullied, maltreated or exploited. And while this may seem unthinkable to some, there have been accounts of apprentices not being trained at their workplaces because the workplace trainers feared that, by training them, they would put their own jobs at risk, as they themselves did not have the same level of training as their apprentices (Mulder & Gulikers, 2011).

In addition to the insights that not all working places are good learning spaces, there are also researchers who have doubts about public interference in learning within the work process, which may be due to matters of culture and vision, but also of history and regulatory frameworks. Not everyone, therefore, embraces the concept of learning within the work process without reflecting on the factors that influence learning opportunities at work.

Nonetheless, it is evident that work process knowledge, as indicated by Fischer and Rauner (2002), is essential, and that it takes time and continuous practice to become and remain a master of one's craft, or to become an 'expert'. It was surprising, therefore, during an interview in previous research, to hear a co-owner of a construction company say that the employees in the company were not being trained and, what is more, that they did not need any further training at all. 'They are good as they are – they have all the skills needed for their work,' he opined, as if investment in lifelong learning would be a disqualification, damage the reputation of the company and hurt their chances of getting work. This view may be quite surprising and exceptional, but, when it comes to learning within the work process, profound differences in views and models are in place. For instance, there are significant divides between the Hellenic, Roman, Rhineland, Eastern European and Anglo-Saxon models of vocational education. These evince a world of difference (OECD, 2010), in addition to the differing roles of education in the labour systems of France, Germany and the United Kingdom (Lane, 1990).

Finally, there are many theories about workplace learning, for example:

- Professional competence (Mulder, 2014; 2017a)
- Professional knowledge and competence (Eraut, 1994)
- Competence and expertise (Evers & Van der Heijden, 2017)
- Mimetic learning (Billett, 2014)

- Experiential learning (Kolb, 2015)
- Communities of practice (Lave & Wenger, 1991)
- Boundary crossing (Akkerman & Bakker, 2011).

Simultaneous use of different theoretical orientations, which is inherent in international development cooperation, can often either facilitate or frustrate cooperation. But it may be difficult to reconcile opposing beliefs in education, learning theories and professional epistemologies, which can result in confusion, repeated re-badging practices or even inertia.

Acceptance of national standards

The third theme is the acceptance of national standards. In international cooperation regarding VET, mutual acceptance of national standards is always a difficult issue. This is the domain of qualification comparison. Countries have their own agencies which undertake these comparisons, which are required for admission to national education institutions. To facilitate the process of comparison and to assist employers and students with making levels of qualifications more transparent, regional and national qualifications frameworks have been or are being established. Developing these frameworks is, however, not an easy task. Winterton (2011) has provided an excellent review of the European Qualifications Framework (EQF) process, research which is ongoing.

However, France, Germany and the United Kingdom all have different ways of dealing with the EQF in their national qualifications frameworks (Mulder, Weigel & Collins, 2007; Mulder, 2017b). Whereas it is generally acknowledged that the three pillars of the EQF are knowledge, skills and competencies, the United Kingdom does not use the term 'competence', France prefers 'savoir', 'savoir-faire' and 'savoir-être', and Germany has two constituents of competence: professional and personal. Professional competence is further divided into knowledge and skills, which historically were fundamental elements of vocational and professional education. Personal competence refers to social competence and to autonomy.

There are no indications whether these country differences will endure or will gradually converge, but, since these differences relate to the historical and political contexts of each of the countries, they are likely to persist. An important question in this respect is: How do these differences relate to the efficacy of the respective VET systems?

Qualified VET staff

The fourth theme for research which is proposed is about qualified VET staff. Increasing the knowledge and experience of VET staff often goes under the label of either 'capacity development' or 'continuous professional development' (Day, 2017). It is regarded as being an important factor in educational change (Fullan, 2016) and quality improvement (Hattie, 2008). There is no doubt that capacity development is needed in many aspects of VET, as in policy-making, administration, organisation, management, curriculum development, learning

and instruction, multimedia use, assessment of educational achievement, programme evaluation and quality management.

However, there is a negative outcome of capacity development in international VET development projects: brain drain. Here, higher levels of competence create greater ambition for placements with better career potential, preferably in organisations based in Western societies (Mulder & Gulikers, 2011). This, however, should not be an argument in the debate on continuing international VET development cooperation. Seen from a national, international or even global perspective, this phenomenon may have its advantages, as better qualified people get to take on important jobs that enable them to make a bigger overall contribution to the same cause. In the short term, though, it is a loss to the organisation in which the capacity development took place and which depends on the new knowledge and skills developed in their staff.

Priority areas for VET funding

In addition to the themes discussed in the previous section, the IBBF programme has proposed three priority areas for funded VET research, these being:

- current issues in VET research on VET cooperation;
- prerequisites for successful VET cooperation; and
- capacity-building in VET research.

While these priority areas are not mutually exclusive, nor are they the only important areas for VET research, they tend to cover a broad spectrum of topics, which, taken together, can increase exponentially the knowledge base on international development of VET. These priority areas are now elaborated on briefly.

Current issues in VET research on VET cooperation

Themes under this umbrella are empirical VET research, business education and subject didactics. These are typical German research priorities, but in an international research context these themes should also be problematised from an international perspective. For instance, is 'didactics' the same as pedagogical content knowledge (PCK) (Darling-Hammond, 2006) or technical pedagogical content knowledge (Niess et al., 2009; Koehler & Mishra, 2008), or does it refer to the didactics of vocational education (Nickolaus, 2008), the didactics of specific subjects or more to the generic educational issues in VET, such as shaping competence (Rauner, Rasmussen & Corbett, 1988), deep learning or workplace learning?

Prerequisites for successful VET cooperation

The second priority area is about prerequisites for successful VET cooperation. Proposed research in this priority area could refer to the European Commission's (2015) report on international cooperation in VET, which outlines drivers and obstacles for engaging in

international cooperation in VET and factors contributing to successful international cooperation in VET. Some insights from this report are set out below (see Figure 1).

In addition to these established factors, prerequisites at the macro-level could be examined, for example the legal frameworks for VET, responsible public administration for VET, political intentions with regard to VET, funding frameworks for VET and the degree of private initiative in VET. These macro-level issues also act as success factors or obstacles in VET cooperation, VET regulation and VET research.

Related to the macro-level, the micro-level of cooperation practices between partners may be embedded in the macro-level to supersede conditions for cooperation. At the micro-level, an important issue is how to avoid hypermobility among project partners as a result of capacity-building and networking in VET cooperation projects, as mentioned earlier. Additional perennial questions in partnership projects are: How can VET cooperation projects achieve sustainable results once project funding ends?; and: What is the optimal duration of a project for it to achieve real and meaningful change? What are the elements of this change? Is it really related to the increase in the learning results of the students? Similarly, how can impact be monitored? And how can valid and reliable data be collected on the success of VET initiatives?

Figure 1: Success factors and obstacles in international VET development cooperation (European Commission, 2015)

Success factors	Obstacles
• Embed initiatives in a wider outreach strategy • Establish equal levels of commitment on both sides of the partnerships • Invest in tailor-made models of VET for specific needs and contexts • Include teachers who understand organisational and geographical specificities and can establish participation of teachers and trainers despite receiving no additional incentives • Provide outreach activities conducted by local representatives to coordinate and promote cooperation	• Time needed to establish cooperation should not be underestimated • Bridging the different cultures of business, education and intercultural exchange • Visa problems which hamper mobility to study abroad • Differences in labour market regulations which limit worker mobility • Limited marketing or support from public authorities • Companies must be convinced of the added value of the programmes they support • Mobility funding if parents and/or students have to partially or fully cover the costs

Capacity-building in VET research

The third priority area is related to the fourth research theme mentioned above, which is about capacity-building. Capacity-building has been an activity in many domains, and there are different experiences with it, different approaches to it and different findings about its efficacy. An example is the work of Liberato et al. (2011), which provides an overview of different models of measuring capacity-building among communities in public health. The insights from this review can easily be translated to capacity-building in the VET research community.

The study suggests that there are nine domains which are important in assessing capacity-building:

- learning opportunities and skills development;
- resource mobilisation;
- partnership/linkages/networking;
- leadership;
- participatory decision-making;
- assets-based approach;
- sense of community;
- communication; and, finally,
- development pathways.

Another study (DFID, 2010:3) distinguishes between three capacity-building levels: the individual, the organisation and the institution. The first level may be obvious; it is described as 'involving the development of researchers and teams via training and scholarships, to design and undertake research, write up and publish research findings, influence policy makers', and so on. The distinctions between the second and third level of capacity-building may not be as clear. Organisational capacity development refers to 'developing the capacity of research departments in universities, think tanks and similar entities, to fund, manage and sustain themselves' (op cit.:3), whereas institutional capacity development means 'changing, over time, the rules of the game' (op cit.:3) and considering the incentive structures, the political regulatory context and the resource base in terms of which research is undertaken and used by policy-makers.

At the 'meso' level, capacity development in VET research can also be targeted at these three levels: First, working together on a one-to-one basis with individuals and teams, providing VET research and development training, providing scholarships for master's and PhD studies, and jointly undertaking research and publications in relevant VET research journals. Secondly, developing the expertise of VET management and VET teacher-training departments at universities. Thirdly, developing better conditions for VET research by creating new institutes for VET curriculum development, VET test development, VET management and VET teacher education with units for VET research; creating positions for VET professors in different fields and specialisations; outlining tenure track systems for VET faculty members; improving assessment and reward systems; and establishing regulations and frameworks by which the VET research, policy and practice community can benefit.

Research into the internationalisation of VET has elements that can be positioned at all three levels – the individual, the organisational and the institutional – by providing scholarships. An element of this is the establishment of chairs at partner universities to train VET teachers and administrative staff at vocational schools and institutes, and of institutions for VET research. Establishing chairs and developing or redesigning diploma, bachelor's, master's and doctoral programmes for VET management and teacher education are badly needed in many countries, as much of this has been neglected during the past decades, not only in the global south, but

also in other parts of the world. The funding scheme in itself is an instrument with which to create change at the institutional level.

Issues at stake here include: What positions will chairs in VET teacher training, management training, and research get in the institutional context they are working in, given the scarcity of research funding and the local career development system for university staff? Furthermore, to what extent should policy-makers implement a VET system development agenda or stimulate local priority-driven research? How can publication competence be enhanced in order for research to be successfully published in high-level journals? Are the support systems of large academic publishers, aimed at helping authors in developing countries, being optimally used and, if so, what are the experiences of this use on the ground?

Overview of VET research themes and topics

As stated herein, the list of research themes of the international VET research programme of the IBBF was not meant to be exhaustive, and, indeed, it is not. This is apparent when the themes are compared with international key reviews of vocational education and vocational education research (see Rauner & Maclean, 2009; Rauner, 2017; McGrath et al., forthcoming). Two earlier international VET research reviews rendered a great diversity of VET research themes. Whereas international handbooks (McGrath et al., forthcoming) often start deductively, the topics of individual studies were clustered inductively in themes that emerged from a review (Mulder & Roelofs, 2012; 2013). Further reflection on the research themes was undertaken; it was subsequently complemented by other reviews and research, which resulted in the series of research themes presented in the most recent handbook. While not intended to be an exhaustive programme for VET research, it can serve as a resource for future VET researchers, having been gleaned from a comprehensive literature review. As this article considers research themes that can guide prospective researchers, a set of clustered themes is given below (also by no means exhaustive).

VET and society

- Cooperative and competitive models of governance of VET
- Cultural aspects and national esteem of VET
- Regulation and deregulation of VET practice and the balance between autonomy and control
- Career perspectives of VET graduates in countries with high unemployment rates
- Personal identity development of VET students
- Public–private partnership and cooperation in VET
- Intensifying and shortening of and reducing dropouts from the VET programmes
- High-level, multi-stakeholder national initiatives to support STEM (science, technology, engineering and mathematics) education
- Stimulating entrepreneurship in VET
- Managing the learning of migrants for social inclusion
- International comparisons of the quality of VET

VET system, policy, organisation and management

- Upstreaming from VET to HE (higher education)
- Making VET a first choice
- International comparisons: from benchmarking to bench-learning
- Developing learning in VET organisations
- Appreciative human resource management in VET
- The role of private training institutions in VET provision to overcome skills shortages

VET teacher education and teacher behaviour

- Competence profiles for and capabilities of VET teachers and trainers
- Continuing professional development in VET teacher development teams
- Roles of experienced professionals in the field in teaching in VET
- Training of in-company VET trainers
- Analysing professional working theories of teachers
- Development of authentic assessment competence
- Stimulating interdisciplinary teacher cooperation
- Developing an enquiry-orientated attitude among teachers

VET curriculum

- Alignment with relevant and current competence frameworks
- Attention to future-orientated competence (robotics; drones)
- Industry 4.0 competence and consequences for VET
- Global competence (intercultural awareness, understanding and diversity)
- Hybridisation of and boundary-crossing in VET programmes
- Stimulating opportunity recognition and realisation in VET programmes to promote entrepreneurship

Learning and instruction in VET

- Evaluating the effectiveness of education and learning theories in VET
- The role of informal learning in competence development
- Working with computer-supported collaborative learning platforms in VET
- The potential of practical and computer simulations and of competitive and social games
- Overcoming challenges in the transfer of learning in VET programmes
- Boundary-crossing: access to internships or apprenticeships
- Effectiveness of and conditions for workplace learning
- ICTs (information and communications technologies) and multimedia (virtual and augmented reality) in VET

Assessment and testing of educational achievement in VET

- Assessment of, for and as learning in VET
- Summative and formative testing in VET
- Authentic assessment and the role of the practical trainer in assessment
- Continuous assessment in VET teaching and learning
- Designing high-quality assessment programmes in VET
- Using rubrics for assessment in face-to-face and online VET programmes

Research studies on themes such as these are in most cases fully embedded in particular VET research traditions and contexts and are not necessarily international in nature. However, mainstream research in educational science, which in most cases is critical from an international perspective, can also prove to be fruitful for VET researchers. Many tend not to refer to this mainstream research, but that should be regarded as a lost opportunity, because, as long as it is published in reputable journals, the quality of this research is generally quite good. For instance, research on teaching and teacher education is in most cases far more advanced in these journals than in typical VET research studies: for one thing, more innovative and advanced methods of data collection and analysis are being used, resulting in higher levels of validity and reliability.

Many universities, research institutes or countries have their own approved lists of journals or journal-grading systems that are used for review and funding purposes. These are the lists high-level university researchers tend to refer to, because their performance is assessed against the listed journals. It may be worthwhile for VET researchers to consult these lists and journals, and the citation indices (the Social Science Citation Index and the Emerging Sources Citation Index especially), and review the current developments in research on a given topic. Doing so can help to improve research proposals, research designs and research publications dramatically.

Strengthening the international VET research community as a long-term goal

A result the IBBF is aiming at through its new research initiative is a strengthened international VET research community. Strengthening this community itself through research cooperation is sorely needed, but it is well understood that building a VET research community and arriving at sustainable research findings will take many years. Existing research cooperatives such as the European Educational Research Association's (EERA) Vocational Education and Training Network (VETNET) and the IBBF's Research Programme on the Internationalisation of VET have the potential really to *deepen* the thematic debates in VET – even more so if common research cooperation activities are facilitated, funded and driven by a responsible authority.

As will be apparent from the discussion about the research themes above, VET research themes are diverse, and so the question that remains is this: To what extent is the convergence of these

themes possible and necessary? Ecologists contend that diversity in ecosystems contributes to their resilience (Elmqvist et al., 2003) and that the response diversity is regarded as being the key to resilience. This seems to be at odds with attempts to converge VET research, as convergence may be necessary for more focused action to occur and a higher level of research quality to be attained. So, finding the balance between the two extremes is important, but by no means easy.

In VET research, two ecosystems are coming together: VET research and VET practice. Here, the ecosystems are governed by different reward schemes: research universities focus on teams which deliver the best research performance; VET institutions focus on the results of their students and the careers of their alumni. Bringing these two ecosystems together has been and still is a challenge.

There needs to be a word of caution here about the publication drift in academia. To what extent should VET research cooperation lead to publication in high-level international journals? This question has been somewhat of a dilemma in Europe. For instance, the earlier *European Journal of Vocational Training* of Cedefop experienced differences of opinion as to its form and purpose, in that there were those among its stakeholders who opted for a straightforward academic journal, while others believed it should be a journal for policy-makers and yet others thought the journal should be used by practitioners – three completely different missions for the journal, but a reality that had nevertheless to be dealt with.

A dangerous pitfall of educational research, therefore, is to aim *exclusively* at scientific specialisation and publication of research only in the top 10% of journals on the relevant list in the Web of Science. An *inclusive* approach in VET research cooperation, advice and capacity development is needed. Of course there should be a scientific mission when research is planned and carried out, but the fact that VET theory is praxeological by nature – that is, a theory about professional *practice* – should not be overlooked. So the connections between VET theory, research and practice are essential, and it should be borne in mind that even at high-end research universities, research assessments these days include the impact of research on society, which has to be monitored and demonstrated by real evidence. What matters is to demonstrate that professionals and practitioners are actually able to use and apply the research findings to improve the learning processes and results of the students – an almost utopian situation probably easier said than done.

A promising development in this respect is that policy institutions such as the IBBF do stimulate international VET cooperation. The international dimension of research cooperation is also strongly supported by Unit 5 on Vocational Training, Apprenticeships and Adult Education of the Directorate General for Employment, Social Affairs, and Inclusion (DG EMPL) at the European Commission. This is backed up by the 2015 report, Building knowledge on international cooperation in VET (European Commission, 2015) of the same directorate. As mentioned in the introduction to the EU report, and to elaborate on this, there are other networks at the European and global levels that are active in international VET development and cooperation. They include Cedefop, the Exchange-Traded Fund (ETF), the Asia–Europe

Meeting (ASEM), the ILO, the OECD, UNESCO with its International Centre for Technical and Vocational Education and Training (UNEVOC), the G20, the World Bank and other regional development banks. Some of these organisations also have international VET research on their work programmes. Examples of this are:

- the programme on TVET indicators to improve TVET management, conducted by the Inter-Agency Working Group on TVET Indicators (This Working Group is a subgroup of the Inter-Agency Working Group on Technical and Vocational Education and Training and consists of experts from the Asian Development Bank (ADB), the European Training Foundation, the ILO, the OECD, UNESCO and the World Bank.);
- the World Bank Youth Employment Inventory; and
- the World Bank studies in which VET data are collected and analysed, aimed at supporting the implementation of VET development initiatives.

It may be worthwhile for researchers who are not familiar with this wider context of international VET development cooperation to become acquainted with it, and to align their research to the state of play in international VET.

Conclusion

The development of VET internationally and strengthening VET research cooperation are important aspirations for positioning VET and VET research higher on the ladder of esteem in education and educational research, as perceived by researchers and the public at large. This article presented and critically discussed the IBBF funding initiative for research on international VET development cooperation in the light of international VET research themes. The IBBF initiative to create space for international VET research cooperation should be applauded, because it will contribute significantly to augmenting the esteem of researchers in this field.

In international research cooperation towards the development of VET, it is important to pursue a balanced approach by taking the diverse context-specific practical, political, administrative and scientific factors into account. These factors all play a role at the national, regional and local levels. Too much pragmatism or too great an emphasis on scientific specialisation that operates in isolation should be avoided. The respectful cooperation of all stakeholders is imperative, which is particularly important in projects that combine researchers with a long-term perspective and teachers and managers with shorter-term perspectives. Most research that will be conducted with the support of the IBBF will ultimately aim to raise the quality of teaching and learning in VET. Important questions to be raised, therefore, are what meaning the different stakeholders will attach to this goal, and how they believe their objective can best be achieved (Fullan, 2016). If this question is not adequately answered, the risk is that both the intended purpose of the research and the related educational change will not be realised.

Finally, the envisaged VET research scenario is one in which there is international research cooperation that will strengthen the international VET research community through continuous

networking, and where both inter-disciplinary and intercultural learning and development are crucial. However, a close watch needs to be maintained on the ultimate goal of VET science and research – the continuous improvement of practice – which in the end should contribute to an increase in the quality of learning processes and to improved results.

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Professional qualifications for the insurance industry: Dilemmas for articulation and progression

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ABSTRACT

In South Africa, the lack of articulation between vocational college programmes and those of universities has long been a source of frustration for college learners seeking vertical progression pathways. The introduction of a National Qualifications Framework in 1995 appeared to offer hope of bridging the divide between occupational, practically focused qualifications and traditional academic qualifications, but, some 20 years later, the stumbling blocks are still evident in spite of concerted national policy efforts. This article reflects on a project conducted over a five-year period that intended to 'create a progression pathway for TVET candidates into university' in the insurance industry and the lessons learned in that process. What at first glance might have appeared to be simply a hostile environment for articulation and institutional intransigence, on further reflection revealed deep-seated curriculum issues associated with qualifications that were understood to differ fundamentally in function and therefore in form. The article draws, inter alia, on Bernstein's (1999) theorisation of practical and disciplinary learning to show how a curriculum has an impact on pedagogies, assessment and quality assurance structures. After examining why college candidates who had succeeded in the first-level occupational qualification with its large workplace component struggled to complete subsequent university levels, the article concludes that divergent curricula and pedagogies will need serious attention if aspirations for more seamless articulation and easier progression are to become reality.

KEYWORDS

curriculum; workplace qualifications; disciplinary learning; articulation; employers; TVET colleges

Introduction

The introduction of legislation for an overarching National Qualifications Framework (NQF) in 1995 was one of the first education policies implemented in the aftermath of South Africa's transition to democracy. In seeking to overcome its former racially fragmented education policies, South Africa attempted, through the NQF, to align all education and training provision within a single framework that emphasised redress and equity intentions. Formal general school qualifications and university qualifications have been clearly defined and tend to be specific to particular institutions. However, vocational qualifications span at least three institutional types: schools, universities and technical and vocational education and training (TVET) colleges. As a result, they do not sit comfortably within the South African NQF, particularly from a quality assurance perspective. Subsequent NQF iterations (RSA, 2009) therefore resulted in three quality-assured 'sub-frameworks': for general academic and general vocational qualifications, for occupational qualifications, and for university qualifications. Qualifications offered by public TVET colleges – which could be both general vocational or broadly within an occupational field, and occupationally specific or tailored to specific industry jobs – are situated at the nexus of these sub-qualification frameworks and overlap with both school and university qualifications.

To illustrate: within the insurance industry, qualifications that prepare students for work in the sector are located at the higher end of the TVET college range of offerings and consist of both theoretical and practical learning. The qualifications are primarily occupational in that formal certification for the entry-level qualification, offered at a public college or by a private provider, enables candidates to undergo examination towards a professional designation. Such examinations are usually taken by employees already in the insurance industry. In this respect, these qualifications could be described as 'demand-led'. For higher-level designations, candidates would have to obtain higher-level qualifications such as those typically offered at a university.

The problem that propelled our research project was that successful candidates who had completed a qualification at a TVET college, even though their exit level overlapped with that of a university first-year commerce programme, were not able to proceed seamlessly into the university and continue with a higher-level qualification there. The reason for this was essentially that the university system was not ready to recognise a TVET college qualification for entry to its programme.

In view of the barriers to progression that TVET college students faced, an 'articulation' project was embarked upon that intended to create the environment for college students undertaking an occupationally recognised qualification in the insurance industry to continue with a higher-level qualification at university. It is in this context that the implementation of the project is reflected upon in this article, in particular the difficulties arising from the qualification in its pedagogy and practices.

For the purposes of convenient differentiation, the TVET college insurance qualification is referred to in this article as an 'occupational qualification', since it is a qualification recognised

for work in the industry. The associated programme at the university, being aimed at a typical university qualification, is referred to as an 'institutionally based qualification'.

The discussion which follows is intended to highlight the issues that surfaced in bringing these two qualification worlds together so that a pathway into the industry could be created for students. We consider some of the dominant theoretical frameworks in respect of learning a discipline at a tertiary institution and practical workplace learning, as well as the modes of learning and teaching that characterise the two qualification types at their sites of delivery. The article concludes with an analysis of why learners who embarked upon this occupational qualification route at the TVET college had limited success in completing it at the university.

Locating the articulation project – workplace and institutional sites of learning

Significant policy work has been done in recent years on articulation within South Africa's post-school education and training sector. A definition of articulation used in the National Committee for Articulation Policy (RSA, 2014) is taken from a World Bank study of higher education differentiation and articulation in 12 African countries in 2007:

> Articulation refers to the mechanisms that enable student mobility within and among the institutions that comprise the tertiary system, for example academic credit accumulation and transfer, recognition and equivalence of degrees, recognition of prior learning, and so forth (N'gethe, 2008:xvii).

The National Committee for Articulation Policy document notes the need to broaden this definition to South Africa's post-school education and training system and quotes the Minister of Higher Education and Training:

> A well-articulated system is one in which there are linkages between its different parts: there should be no silos, no dead ends. If a student completes a course at one institution and has gained certain knowledge, this must be recognised by other institutions if the knowledge gained is sufficient to allow epistemological access to programmes that they want to enter (RSA, 2017:18).

The South African Qualifications Authority (SAQA) notes that articulation can be both 'systemic and specific' in that:

> [S]ystemic articulation is based on legislation, national policy and formal requirements within the education and training system. Specific articulation … is based on formal and informal agreements within the educational and training system, mostly between two or more education and training sub-systems, between specific institutional types, and guided by guidelines, policies and accreditation principles. Specific articulation also refers to institutional accommodation of individual needs (RSA, 2014:23).

Both policy documents, however, acknowledge that qualifications within South Africa's post-school education and training system do not articulate easily. The National Committee on Articulation Policy observes that:

> [T]he South African Post-School Education and Training (PSET) system is riddled with conceptual and systematic challenges and incongruities. Users of the PSET system experience a lack of coherence and articulation between and within the sub-frameworks that constitute the NQF. Moreover, the system is perceived to be incessantly producing and reproducing gender, class, racial and other inequalities in access to PSET opportunities and to success in PSET programmes (RSA, 2014:7).

The policy document refers to debates on vocational education and training and notes with concern that vocational education is increasingly defined as the 'exclusive acquisition of a relatively narrow band of employment-related or job-specific skills and competencies' (Anderson, Brown & Rushbrook, 2004:11). SAQA also introduced a Credit and Accumulation Policy in 2014, which calls for the recognition of credits across learning institutions to increase the portability of qualifications registered on the NQF. Despite the publication of these articulation policies by the state, the articulation of qualifications between TVET colleges and South African universities remains minimal. It should be noted that the finalisation of these policies took place only after the research project intervention described in this paper had been concluded.

Most TVET colleges have historically been engaged in offering traditional state-funded vocational programmes, some of which have a practical component, and fewer programmes with actual workplace training, given the decline in the apprenticeship system in the 1980s (Kraak, 2008). There was therefore considerable enthusiasm on the part of the insurance sector's quality assurance body when the project was mooted in TVET college programmes that have a link to employment. This explains this body's interest in colleges offering an NQF-registered occupational programme directed specifically at workplace designations in the insurance industry. Furthermore, the first targeted students of the programme to be offered by the TVET colleges would be candidates already in employment, which would ensure a direct relationship between theory learned at college and practice in the workplace. In order to achieve the professional designation recognised by the insurance industry, candidates had to attain the accredited qualification and then write a board examination set by the relevant professional body. From the outset, therefore, the project had the full support of the industry's quality assurance body.

Negotiations with a receptive research university resulted in an agreement to pilot a project in which five public TVET colleges would be prepared to implement a college-level qualification that would afford candidates access to the next level in the commerce faculty at the university. The commerce faculty, in turn, gave its in-principle agreement that students who completed the entry-level qualification at the five TVET colleges would be permitted to enter their two-year diploma programme and then proceed to a postgraduate diploma that would enable them to sit the examination for the highest professional designation in their field.

The professional body for the insurance industry also supported the pilot and agreed both to make their existing curricula available to the five TVET colleges and to update these curricula regularly as necessary. The professional body's curricula gave insight into the professional board examinations and comprised substantially more material than that required by the quality assurance body for the insurance industry qualifications. The examinations leading to designations recognised by the insurance industry are depicted in the table below, which also shows their links to formal institutional academic qualifications.

TABLE 1: Professional designations aligned with formal academic qualifications

Qualification	Board examination leading to designation	Workplace requirement	Regulatory requirement
Certificate at first-year university level	Registered financial planner	One year of work experience	Minimum requirement to practise as an insurance broker
Advanced diploma at second- and third-year undergraduate university levels	Associate financial planner	Two years of work experience	
Postgraduate diploma at fourth-year university level	Certified financial planner (internationally recognised designation)	Three years of work experience	

The state-funded sectoral body for the insurance industry subsequently approved funding for 100 candidates to be enrolled at five public TVET colleges for this 'articulation route' into university. Candidates were required to have a school-leaving certificate in order to satisfy minimum university entry requirements and had to have worked in the insurance industry for at least one year to qualify for the funding.

The qualification offered by the TVET colleges, which was effectively a first-year university level programme, differed from traditional first-year university programmes in that it was accredited by a sectoral body for the insurance industry and was designed in the manner of occupational programmes as an outcomes-based qualification aimed at achieving competence in the workplace. A mandatory 70% of the learning and assessment had to take place within the workplace, with 30% of the learning time spent attending classes at the college. The qualification was broken down into fundamental, core and elective components, each of which had a number of unitised standards with credits allocated to them. Learners were required to demonstrate competence in all areas of the qualification; if they were assessed as 'not yet competent', they could undergo repeat assessments until competence was achieved. Learners also had to complete a logbook of their workplace activities that would demonstrate their practical competence in the insurance industry.

Traditional university qualifications, on the other hand, are quality-assured by a national statutory body for universities, and qualifications are specified in terms of very broad exit-level

outcomes rather than being unitised into smaller competencies. The diploma and postgraduate diploma qualifications in the commerce faculty were entirely theory-based, offered in university lecture halls, and assessed by means of academic assignments and formal written examinations.

Against this backdrop, of the 100 students enrolled in TVET colleges for the first-level programme, 77 students passed and attained the certificate. Of these, 23 students proceeded to the university faculty of commerce for the two-year, part-time, two-diploma qualification and 18 students managed to pass their first university year and continue into the second year of the diploma. However, only 12 students completed the second year and were awarded the diploma qualification, of whom six diplomates entered the postgraduate certificate and were successful. This achievement made them eligible to take the professional board examination for their highest designation, that of certified financial planners.

In view of the high attrition rate of this cohort at university, this article seeks to explain why so few students succeeded in their university studies in spite of the high pass rate of the group that started out at the TVET college in the first-level occupational qualification.

Part of the explanation appeared to be divergences in the ways that occupational and institutional or disciplinary qualifications were understood by those offering them in the different sectors, and also in their pedagogies and practices. These differences can be traced to paradigms that characterise the different purposes of learning and of the institutions where they are offered, and we therefore attempt to locate these in the brief overview of the literature that follows.

Paradigms and practices at work

In this brief review we focus on the apparently divergent views on the nature and underpinnings of occupational or workplace qualifications, and those of university disciplinary qualifications.

To begin with, the purpose of vocational education has been widely debated according to a range of perceived outcomes, namely: vocational education as skills development for quality citizenship (Garrat, 1999; Winch, 2000); to address (youth) unemployment (Leney & Green, 2005); and to boost economic growth, competitiveness, and social inclusion. However, a number of research outputs have been pessimistic about these outcomes on the grounds that the global economy increasingly supports a low skills equilibrium for the secondary labour market in a segmented labour market (De Freitas, 1995). These studies point to the disjuncture between policy rhetoric and reality, and between broader educational purposes and the political economy.

Various critiques have emerged that question the empirical and conceptual validity of human capital theory (Brown, 1999; Fevre, Rees & Gorard, 1999; Winch, 2000; Rikowski, 2001; Lloyd & Payne, 2002; Flores-Crespo, 2007; Valley & Motala, 2014); the skills mismatch thesis (Handel, 2003; Powell & Snellman, 2004); and skills shortages and the knowledge economy (Brown, 2001; Guile, 2002; Low, 2002; Brown, Hesketh & Williams, 2003; Miller & Hayward, 2006; Warhurst & Thomson, 2006; Wheelahan, 2007).

Other research results have pointed to the growing culture of credentialing and diploma inflation of existing work (Brown et al., 2003; Warhurst & Thompson, 2006); the politics of employability (Brown et al., 2003); the increased privatisation of education; the intensification of work, and, ultimately, the increasingly direct dominance of business over educational processes (Avis, 2004; Cornford, 2006) as the underlying defining features of vocational education.

Clearly, the education–work relationship is contested and neither neutral nor value-free. Stone (2002), on the one hand, suggests that vocational education should be *for* work, *through* work and *about* work, while, on the other hand, the realm of vocational education is expanded to include general education (using work as a context) and education for democratic participation or citizenship education.

There is a growing body of literature, inter alia, Engestrom (1987), Raizen (1994), Guile and Griffiths (2001), Schuetze and Sweet (2003) and Hodkinson (2005), which advocates close intra-relationships and interrelationships between institutional and workplace learning. Nevertheless, the dichotomy between the types of learning that take place in discipline-focused qualifications, and in learning focused on occupations, is acknowledged. In the latter instance, the workplace is seen as the primary learning site (see Lave & Wenger, 1991; Billett, 2001; Boud & Middleton, 2003), whereas, in the former, the academy is the site of learning (eg Bathmaker, 2005; Young, 2005; Allais, 2007), leading to divergent views on the kind of learning that occurs in these different locales.

The workplace as a site of learning

Billett (2001) disagrees with the naming of workplaces as 'informal learning sites', arguing that such a view is 'negative, inaccurate and ill-focused' and part of a discourse on learning that uncritically privileges formal academic education. For Billett, learning needs to be understood as a participatory practice, an engagement with the social world and an 'inter-psychological process' (between individuals and social practices of knowledge). He cites cognitive and sociocultural constructivist psychological perspectives (Anderson, 1993; Rogoff et al., 1995) that link engagement in goal-directed activities to learning in support of this view.

Furthermore, Lave and Wenger (1991) hold that work practices are often intentionally organised to facilitate. Hodkinson (2005) agrees with critiques of learning as either 'formal' or 'informal' when referring to learning in academic and workplace settings, respectively. He argues that, in both institutions and workplaces, attributes of formality and informality exist in learning. Hodkinson uses Lave and Wenger's (1991) theories of cognitive situated learning as well as Bourdieu and Wacquant's (1992:527) concept of 'habitus' to argue that all learning is an 'ongoing relational and reconstructive process'.

The industry qualification model that candidates in our research project undertook, in which 70% of the learning had to be conducted in the workplace, aligns with scholarship on the

workplace as a site of learning. This research posits the learner as being more than the input of learning and learning as a social practice, whether in an institution or at work, and the importance of understanding these different contexts as a basis of learning progression. Guile and Griffiths (2001) argue for the:

> '[C]onnective model' of work experience as a basis for a more productive and useful relationship between formal and informal learning, since it addresses how work experience can enable students to take explicit account of '*the learning which occurs within and between the different contexts* of education and work' [original emphasis] (Guile & Griffiths, 2001:128).

Their argument therefore posits learning as contextually bound and calls for strategies to make learning about these different contexts of work and education explicit.

Discourses evident in the debates on vocational learning are concerned with how and where knowledge and learning are best transmitted and acquired. Proponents of institution-based disciplinary knowledge query the extent to which workplaces can be sites of vertical knowledge and draw on Bernstein's (1999) distinction between horizontal and vertical forms of knowledge to argue that the knowledge of disciplines acquired in educational institutions offers the most viable route for acquiring specialised knowledge. Bernstein's (1999) theorising on these issues is evident in many of the scholarly debates about institution-based disciplinary learning; therefore, we take a closer look at the underpinnings of those discourses here.

Bernstein (1999) defines a vertical discourse as:

> A coherent, explicit, and systematically principled structure, hierarchically organised, as in the sciences, or it takes the form of a series of specialised languages with specialised modes of interrogation and specialised criteria for the production and circulation of texts, as in social sciences and the humanities (Bernstein, 1999:159).

He asserts further that learning is achieved through the re-contextualisation of 'symbolic structures of explicit knowledge' in vertical discourse (as opposed to 'segmentation') or in horizontal discourse contexts (Bernstein, 1999:161). Vertical knowledge is therefore characterised by general propositions and theories 'which integrate knowledge at lower levels, and in this way shows underlying uniformities across an expanding range of apparently different phenomena' (Bernstein, 1999:162). A further characterisation of vertical knowledge is one of 'greater and greater integrating propositions, operating at more and more abstract levels', by which vertical knowledge structures are produced by an 'integrating code' (Bernstein, 1999:162). He notes that vertical knowledge structures are hierarchical and that for these structures 'it is the theory that counts and it counts both for its imaginative conceptual projection and the empirical power of the projection' (Bernstein, 1999:165).

In comparison with vertical discourse, a horizontal or 'common sense' discourse is characterised as:

> [O]ral, local, context dependent and specific, tacit, multi-layered, and contradictory across but not within contexts … the crucial feature is that it is segmentally organised (Bernstein, 1999:159).

Whereas Bernstein's work on horizontal discourse is mostly contextualised within higher education, he does refer to 'craft' as a close approximation of a horizontal discourse (Bernstein, 1999:168). In this regard, he notes that each horizontal knowledge structure makes its own assumptions about what counts as a legitimate text, but the transmission of knowledge in 'everyday' life is essentially oral in character (Bernstein, 1999:168).

A key feature of workplace learning is the often tacit, embedded ways in which learning is transmitted within the workplace context (Bernstein, 1999:168). According to this perspective, knowledge, competencies and literacies are:

> [C]ontextually specific and 'context dependent', embedded in on-going practices, usually with strong affective loading, and directed towards specific, immediate goals, highly relevant to the acquirer in the context of his/her life (Bernstein, 1999:161).

Hence, knowledge within a horizontal discourse is often serially acquired and the language used to define each segment or context is not easily translatable across contexts (Bernstein, 1999:163). Pedagogy and teaching practices will therefore vary between different contexts, since the two knowledge types are acquired differently and will need to be assessed differently, depending on the type of competence required. This perspective, though, needs to be tempered by the views of other theorists such as Guile (2010). They caution that theoretical knowledge and tacit knowledge should not be seen as separate knowledge types but rather as interdependent, the relationship between the two being mediated to successfully address professional learning.

Young (2005) argues further that outcomes-based frameworks undervalue the extent to which institution-based learning guarantees the quality of a qualification. His concern is with unitised qualifications where the learner selects different unit standards to make up a qualification, and where the sequencing of these units may undermine the process needed to acquire knowledge and skills. His argument here is that:

> [M]any kinds of knowledge in general education (such as physics), and many skills (such as cabinet-making) that are important in vocational qualifications, depend on a particular sequencing of learning defined by subject specialists, and are not amenable to unitization (Young, 2005:25).

Young maintains that, for developing countries, emphasis should be placed on an institution-building process rather than on outcomes-based qualification frameworks. Allais (2007) agrees that a unitised, standards-based approach tends to atomise learning, making conceptual learning difficult, more particularly assessment of such qualifications which have led to managerialist practices by some quality assurance bodies.

Gamble (2006) cautions that theory and practice in vocational education represent fundamentally different forms of knowledge, and that privileging practical knowledge could lead to 'downward rather than upward vocationalisation and block possible progression to higher education' (Gamble, 2006:12). In contradistinction, many further education colleges in the United Kingdom have received accreditation in order to offer undergraduate degree programmes, resulting in the dilution of the more practical occupational focus of This outcome has led Bathmaker (2005) to observe that:

> … over the past decade there has been considerable academic drift, so that these (vocational) qualifications now have more in common with their academic counterparts than with occupational qualifications (Bathmaker, 2005:85).

Crudely stated, some scholars tend to view disciplinary learning as being primarily about promoting codified learning that enables progression to vertical academic knowledge and further learning rather than to proficiency within the workplace. Such divergences of perspective about the purposes and value of traditional theoretical programmes offered mostly in academic institutions, on the one hand, and occupationally directed learning programmes undertaken largely in workplace settings (such as the NQF-registered insurance industry programme), on the other, proved to be key stumbling blocks in the research project described in this article. Those same divergences of perspective led to critical differences in pedagogy and practices that ultimately affected learner performance.

The impact of competing discourses on implementation[1]

In spite of TVET colleges' primary focus being vocational training, traditional programmes have led to largely theory-based qualifications that had little practical or workplace experience as a component of the qualification. The qualification to be offered in the pilot project at TVET colleges was therefore a new 'demand-led' programme that had not previously been offered in these institutions. This entry-level qualification offering access to the insurance industry designations was an NQF-registered, unit standards-based occupational programme. A large proportion (70%) of the learning on this programme was intended to take place in the insurance workplace and only 30% of the learning by means of the usual didactic delivery.

1 The evidence presented below stems from a detailed research study conducted by a university research institute on the articulation of professional qualifications for the insurance industry.

The mode of delivery was prescribed by the sectoral body responsible for the quality assurance of this qualification; it was defined as a 'learnership' similar to the apprenticeship model which entailed a tripartite agreement between the learners, a training provider and an employer. A learnership is defined by the South African Qualifications Authority (SAQA) as:

> A work-based learning programme that leads to an NQF-registered qualification. Learnerships are directly related to an occupation or field of work, for example electrical engineering, hairdressing or project management. Learnerships are managed by sector education and training authorities (SETAs) (SAQA, 2014).

Whereas in-house industry training providers are often able to offer both workplace training and the theoretical learning, this was not the case with public TVET colleges. South Africa's Labour Relations Act 66 of 1995 and the Compensation for Occupational Injuries and Diseases Act 130 of 1993 have specific provisions that prevent non-employees from working or training in the workplace, as non-employees are not covered by insurance should any accident occur in the workplace. This meant that the TVET colleges participating in the project provided the theoretical training only, while the insurance companies used their own staff trainers to provide the workplace learning component.

One hundred employed insurance candidates undertook the NQF Level 5 qualification in financial planning at public TVET colleges. The qualification consisted of 80 discrete unit standards, ranging from 2 to 15 credits and totalling a minimum of 120 credits to be achieved. To illustrate the way the standards are written, one of the unit standards intends the learner to 'Adapt and verbally communicate financial information to a range of audiences' (SAQA ID No. 242614) and is assigned a total of 2 credits or 20 notional hours of learning. This unit standard has 14 assessment criteria according to which a learner's competence can be assessed.

The qualification is divided into fundamental, core and elective components. Fundamental knowledge for this qualification focuses on economic knowledge and the financial sector, and is closely related to the occupation of a financial planner. In this programme, this learning identifies closely with Bernstein's (1999) notion of a 'horizontal discourse', where the primary aim of the qualification was to ensure that learners followed a tightly prescribed curriculum that focused on their ability to act as insurance brokers. No provision was made in this qualification for acquiring the fundamental disciplinary knowledge that would enable learners to engage in further academic study. The fundamental unit standards for the financial planning qualification are as set out below.

TABLE 2: Fundamental unit standards for the financial planning qualification

Fundamental	Apply basic economic principles to the financial services sector	Level 5	Level TBA: Pre-2009 was L5	5
Fundamental	Demonstrate insight into current affairs in the financial services sector	Level 5	Level TBA: Pre-2009 was L5	10
Fundamental	Demonstrate knowledge [of] and insight into the changing nature of the financial services industry and its consumers	Level 5	Level TBA: Pre-2009 was L5	6
Fundamental	Demonstrate knowledge and understanding of risk in a financial services environment	Level 5	Level TBA: Pre-2009 was L5	5
Fundamental	Describe the financial life cycle of an individual and how this influences financial decisions	Level 5	Level TBA: Pre-2009 was L5	8
Fundamental	Present an informed argument on a current issue in a business sector	Level 5	Level TBA: Pre-2009 was L5	5

While all the stakeholders provided support and there was certainly the political will for the articulation project to succeed, the lack of foundational knowledge at the first-year level of the NQF-registered qualification proved highly detrimental to learners' progression at the university once they had succeeded in attaining the first level.

The university had commissioned a study that could provide a mapping of the first-level TVET college qualification onto the university-level qualification. Using a contextual and conceptual mapping tool that drew on research from Muller (2008) and Gamble (2009), based on Bernstein's (1999) theoretical approach, it was found that only 12 credits offered in the first-year-level programme offered at TVET colleges could be awarded towards the university Bachelor of Commerce degree. The tool developed by two universities devised knowledge typologies that distinguish between 'conceptual' and 'procedural' (or contextual) knowledge, and, for each of these types, further distinctions between principled and procedural were made, consequently creating a four-part knowledge typology, as follows:

- conceptual knowledge;
- procedural conceptual knowledge;
- principled procedural knowledge, and
- procedural knowledge.

Both conceptual and procedural (or contextual) knowledge can therefore be principled, but with an important difference: in principled procedural knowledge the principles emerge from

the procedures themselves; in other words, they emerge from the codification of practice. In procedural conceptual knowledge, 'the principles emerge from the conceptual domain or from the theory' (Palframan, Nel & Baduza, 2012).

The reason cited for there being so few recognised credits was that the university provided foundational knowledge in the first year of the degree to prepare learners for the complex mathematics and economics concepts that students would need in the second- and third-year levels of the undergraduate degree, which was not the case in the college-delivered programme. The university was therefore unable to accredit any of the fundamental knowledge provided in the NQF-registered qualification because it did not match the disciplinary knowledge in the courses provided by the university.

Another factor to consider is that graduates of the NQF-registered qualification struggled with the academic level of the economics and mathematics taught in the university diploma. This largely accounted for the high dropout rate experienced by students once they reached university. The faculty view was that an intervention was needed that would build the candidates' foundational knowledge of mathematics, communication and economics, as this clearly needed strengthening. The envisaged bridging programme to prepare learners for university study after their graduation from the college programme did not materialise, as it had not been built into the funding.

In addition, the workplace learning component of the college-level qualification proved to be highly problematic. Despite assurances from the sectoral body responsible for insurance qualifications that it would provide a logbook to monitor workplace activities, this was delayed by nearly a year from the start of the project. Learners were not allowed to include their previous workplace experience (as they were employed candidates) for credit-bearing purposes in the logbook and could record only their current on-the-job learning; neither were employers reimbursed for providing workplace mentors to quality-assure the learners' logbooks. Furthermore, many of the employed learners who were working in insurance call centres struggled to get released by their line managers for the purposes of training in other divisions of the insurance company. Many workplace mentors viewed the logbook as a 'tickbox' exercise where workplace learning tasks were signed off with minimal evidence having been presented that these tasks had been completed. Through the mediation of the sectoral body, a compromise was eventually reached that candidates could focus on specific workplace tasks that enabled them to complete their workplace portfolio of evidence.

A further finding was the difficulty encountered by the university and the TVET colleges in providing adequate learning materials that encompassed all of the content prescribed in the qualification. Public TVET colleges had minimal experience in developing curricula because the mainstream programmes used prescribed learning material funded by the national education department. While the professional body had made their curricula available to the project, the insurance sectoral body felt that the learning materials were deficient, an issue that remained a source of tension throughout the project. The sectoral body held, further, that the learning

material for the college programme should be mapped against the 80 unit standards and 144 assessment criteria of the qualification.

Furthermore, a prescribed textbook used by all universities offering financial planning qualifications at undergraduate levels was deemed 'insufficient' by the sectoral body in the light of the atomised learning content of the occupational programme. And, although additional funds were able to be sourced and allocated to the university to develop customised learning materials that addressed the unit standards and assessment activities, the university academics had little understanding of such outcomes-based materials and instead outsourced the materials development to industry experts. This, in turn, led to copyright issues, as some of the industry experts appeared to resort to materials that had previously been developed for other private training providers. To resolve the impasse and the learning delays this had led to, the professional body commissioned a private provider to develop the requisite learning materials for the university programme.

Another major tension that surfaced in the project and most certainly disadvantaged the candidates, was that of the difference in approach to assessment and quality assurance adopted by the TVET college under the sectoral body regulations and that of the university as an institution with a lot more autonomy in curriculum matters. Learners following the first-level, outcomes-based and unitised qualification at TVET colleges were allowed to repeat their formative and summative assessments up to three times in order to reach the required level of competence in the specified outcomes and assessment criteria. While grades were provided for these assessments, the aim of the assessment structure was to measure competence rather than academic excellence. When these learners progressed into the university diploma, however, they encountered a very different assessment regime which did not permit learners to repeat assignments as part of their continuous assessment or formal examinations. Assignments at university also required them to source texts independently from libraries or the Internet as opposed to being provided with a set of learning materials that contained all the content required for the qualification.

The university curriculum was organised into 8 × 20 credit modules, delivered part-time to the employed students after hours. The exit-level outcomes for the content of the university diploma were far less specific, and the faculty had considerable autonomy about the content and methodology needed for students to meet the broader outcomes. Examples of such exit-level outcomes are these:

- Able to identify and solve management problems using some judgement across a range of functional areas.
- Able to collect, analyse and organise theoretical and practical information across a range of functional areas of management, and critically evaluate information if an area of specialisation is selected.
- Demonstrate an understanding of the organisation as a set of related functions by applying holistic approaches to strategic business problems.

As can be seen from these outcomes, the students would be required to engage both practically and theoretically with the subject matter, the emphasis being on acquiring broader self-directed learning skills.

In the following section we return to the theoretical framing employed in this article to illustrate critical differences in the learning discourses that had a seminal impact on the success of the articulation project.

What were the learning approaches of the project?

The attempted articulation route into professional qualifications in the insurance industry revealed fundamental differences in learning approaches between standardised outcomes-based qualifications in the workplace and disciplinarily 'whole' qualifications offered at universities.

Both types of qualification offered in the project contained elements of Bernstein's (1999) horizontal discourse, in that they included practical and tacit knowledge related to the occupational tasks of insurance brokers. But the occupational qualification underwritten by the sectoral industry body was tightly prescribed and sequenced in terms of specific segmental knowledge and competencies required by the workplace. On the other hand, the university qualification focused primarily on the theoretical and disciplinary knowledge needed to satisfy the academic requirements of academic undergraduate and postgraduate qualifications. This difference in understanding of the purpose of the qualification led to the foundational knowledge of the workplace qualification being seen by the university as adequate to prepare learners for further academic study, whereas the TVET colleges understood the purpose to be preparing learners to be competent in the insurance industry. Assessment and quality assurance processes and procedures for the insurance occupational qualification appeared to be too tightly prescribed and unable to incorporate the broader disciplinary knowledge outcomes that would enable learners to progress in higher education studies.

Conclusion

The project starkly revealed the difficulties of combining, in a single articulation route, a unitised qualifications approach as employed in the workplace-directed occupational programme with the traditional disciplinary-based qualifications approach of universities. While the occupational programme embarked upon at the TVET college focused on the immediate short-term skills needs of the insurance industry, it did not lay the foundation needed by candidates who might wish to progress to higher qualifications at university for the purposes of acquiring the higher professional designation.

The project therefore indicated that future interventions aimed at articulating academic and occupational qualifications in South Africa will need to take account of the curriculum development, learner support and lecturer capacity-building required for integration of horizontal and vertical knowledge constructs, and how these manifest in institutional pedagogies and practices.

We hope that the findings of this articulation research can be used by policy-makers to inform the recently developed qualifications frameworks for the training of TVET college lecturers so that sufficient capacity can be built to ensure effective articulation generally between TVET colleges and universities.

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Conflicting priorities: The dichotomous roles of leadership and management at TVET colleges

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ABSTRACT

The notions of leadership and management in the technical and vocational education and training (TVET) sector have become blurred in South Africa. The growing need for responsive and flexible leadership in the TVET sector has resulted in challenges that can only be overcome with the relevant leadership knowledge and skills. Our findings suggest that the demands of leadership and management have created conflicting priorities for leaders at the TVET colleges. Leadership development in the TVET sector may be one way of addressing these issues. Yet, in South Africa, there are no strategically planned, custom-designed leadership development programmes for leaders in public TVET colleges. A curriculum framework for leadership development should be informed by these conflicting priorities in order to reprioritise the focus of TVET leaders in South Africa on their core business: that of vocational education. This article reports on current and future TVET leaders' perceptions of how the notions of leadership and management influence their practice.

KEYWORDS

Technical and vocational education and training (TVET) colleges; management; leadership; leadership development

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Introduction

> Leaders work in unfamiliar territory, often with a repertoire of largely historical leadership strategies. They have to respond to external demands with business-like efficiency and accountability, while navigating the maze of diverging cultural norms, narratives and work ethos of academic environments (Kligyte & Barrie, 2014:157).

Being a leader is thus no easy task – especially not in the South African technical and vocational education and training (TVET) college sector. Many TVET colleges are regarded as dysfunctional and incapable of meeting the social and economic needs of the country, despite the expectation that they are to play a transformative role in education as required by legislation (RSA, 2013). In order for the colleges to rise to this challenge, their leaders have to be equipped with knowledge, skills, aptitudes and competencies to lead these institutions into the future (RSA, 2013). The growing need for responsiveness and flexibility in the TVET sector has not only increased the workload of leaders in this sector, but has also resulted in a number of leadership challenges. These demands, we argue, have blurred the lines between leadership and management in the South African TVET sector.

Callan, Mitchell, Clayton and Smith (2007:13) define leadership in a vocational institution as the capacity at both the individual and institutional levels to identify and define organisational goals and desired outcomes, to develop strategic plans to achieve these goals and deliver the outcomes, and to guide the organisation and motivate people to reach these goals. Callan (2001:10) suggests that, while management is involved with dealing with 'complexity and the present', leadership is concerned with the establishment of a 'compelling vision, direction and a plan for the future'. Tichy and Devanna (1990) contend that managers maintain the balance of operations in an organisation, while leaders are characterised as individuals who create new approaches and imagine new areas to explore. According to Falk (2003:196), however, those 'labelled "leaders" are also required to manage'.

In the vocational education and training (VET) sector internationally, leadership and management have been recognised as different but overlapping concepts, mostly without distinguishing between the two concepts in a practical sense (Foley & Conole, 2003). This evident lack of clearly demarcated roles creates competing priorities and has implications for any leadership (or management) development initiative. Before any leadership development can take place, these dichotomous roles need to be clarified.

Leaders at South African TVET colleges hail from diverse educational and occupational backgrounds – ranging from school teaching to artisanal trades. Very few of them have any specific vocational education or context-specific leadership training, yet they are expected to function in a complex and demanding sector marked by regular policy changes and political interference, student unrest, unstable staffing conditions and no clear leadership career pathways or succession planning strategies. Despite these challenges, TVET leaders remain at

the helm of an essential (though often undervalued) component of the South African national education system.

Currently there is a paucity of scholarly work focused on South African vocational education in general, and even less that is focused on leadership development within this sector. This article therefore aims to address this gap by exploring the tensions resulting from competing priorities of leadership and management in the TVET sector. These tensions first need to be understood before any meaningful leadership development can take place. We therefore investigated the dichotomous roles of leadership and management at South African TVET colleges by means of focus-group and individual interviews with current and potential future leaders at public TVET colleges across South Africa.

The conflicting priorities of leadership and management

Context plays an important role in TVET leadership. Today, it is acknowledged that leadership competencies are affected by many contextual factors (Falk, 2003; Eddy, 2010; Coates et al., 2013; Gentry et al., 2014). The South African TVET colleges, like the American community colleges, the Australian TAFE colleges and the further education (FE) colleges in the United Kingdom (UK), are complex, multidimensional organisations, playing a varied educational and training role (Eddy, 2010; Nevarez, Wood & Penrose, 2013). TVET leaders have to maintain a balance between 'strategic priorities and competing responsibilities' (Collinson & Collinson, 2009:376). Collinson and Collinson (2009) divide the competing priorities and responsibilities of such leaders into five broad categories, including:

- operating across different sectors;
- dealing with a diverse demography of students;
- balancing internal and external roles;
- dealing with various competing operational pressures; and
- facing external pressures.

In addition, in the context of a South African TVET college, these leaders also have to negotiate their relatively recent integration into the higher education sector in 2009 that has brought about additional challenges and demands (RSA, 2013). This could be added as a sixth priority. These categories provide a useful basis for considering the dichotomous relationship of competing priorities of leadership and management in the South African TVET sector.

Since the TVET colleges are located as post-school education and training institutions in the South African public higher education system, the leader of a TVET college is first and foremost an educational leader, but with a multifaceted vocational rather than a purely academic focus. This means that TVET colleges, like other VET institutions internationally, operate across sectors other than focusing on a purely educational system. Colleges have to work with business, the community, government and education sectors. Each sector has its own requirements and challenges (Gleeson & Knights, 2008). The ability to balance all these sectors' diverse needs

may be a unique challenge to the leadership of the colleges, especially given the current financial pressures they face. Colleges therefore require leaders who have a number of different competencies that can be applied in different contexts and complex situations.

According to Robertson (2005:40), educational leadership is about 'informed actions that influence the continuous improvement of learning and teaching'. The emphasis should thus be placed on actions relating to learning and teaching, and thus be focused on the students. One of the reasons for the complexity of the situation is that, at any stage, a TVET college has a diverse demographic of learners, all at different life stages and with different educational needs and levels. TVET colleges offer a wide range of education and training opportunities to post-school students, providing them with a second chance of finishing the final school-leaving certificate, or by offering bridging programmes providing access to universities. The colleges also offer a range of vocational programmes for school-leavers to enter the job market. In addition, colleges provide upskilling and reskilling for working or adult learners, as well as providing contextually relevant and personally enriching learning possibilities to local communities (HESA PSE, 2011). Furthermore, a significant proportion of the students are from disadvantaged backgrounds (Collinson & Collinson, 2009; RSA, 2013).

Having such a diverse student body complicates education and training at these institutions. Other factors relate to including a variety of teaching methods such as online learning, as well as timetabling that accommodates flexible learning in terms of time and place. The challenge is how to balance these multiple missions and functions in order to meet the needs of the individual, the community and the state. Leaders must therefore be responsive to these multiple needs, as well as college learners' aspirations and limitations (Eddy, 2010).

Leaders in TVET colleges are also expected to balance the previously mentioned internal with external roles. Dealing with external issues has become part of college leaders' daily tasks (Quinlan, 2014). The leader must meet government mandates, as well as respond to many demands, and the leader is held more and more accountable while cost pressures create conflict with more altruistic values. College leaders are expected to develop an external presence by becoming the face of the college (Lambert, 2013:27) and present the interests of the college to business and the local community.

Public higher education is increasingly required to provide evidence of its effectiveness during times where educational leaders' work is dominated by management matters rather than efforts to improve teaching and learning (Dempster, 2009). Foley and Conole (2003) and Callan et al. (2007) have identified similar tensions in the TAFE sector. There is an increased call for accountability at a number of different college levels such as use of resources, human, physical, financial and otherwise. Despite these demands, the external role of the college leader should not be at the cost of internal college matters.

Much has been written about higher education to highlight how academic leadership, particularly in universities, differs from other organisational contexts. South African TVET

colleges were officially included as higher education institutions in 2009. The staff at TVET colleges have thus had to learn how to function in this new sector which they share with other educational institutions such as universities and universities of technology. At universities, decentralisation and the 'culture of collegiality and autonomy underpinning academic work' (Kligyte & Barrie, 2014:157) indicate that higher education needs a different kind of leadership to private organisations. Even though public institutions of higher education (universities as well as TVET colleges) are very much part of the public service, they are rarely treated as such (Kligyte & Barrie, 2014).

The concept of collegiality, which is at the very heart of a university, also distinguishes a university from other higher education institutions (Kligyte & Barrie, 2014). It sets universities apart from TVET colleges even though they share the same higher education system. This offers further challenges to TVET college leaders who have to co-mingle at the same level as leaders from universities, despite the difference in qualifications, experience, working conditions and frames of reference.

Juntrasook (2014) came up with four meanings of leadership at higher education institutions which have some relevance to TVET colleges. The first of these meanings is that leadership is a position to which someone is appointed. This appointment legitimises the position. An institution should entrench this notion by being prepared to invest in such a person and leadership development should be available to these leaders exclusively. The second meaning is that leadership is performance for which competency must be demonstrated. This meaning focuses on the work that the person does according to institutional policy. This type of leadership is observable and measurable and, in order to be promoted, the leader must demonstrate the required level of performance which is assessed or appraised. The third meaning is that leadership is practice. It is not always clear what this practice entails, but it could include attending meetings and conferences and serving on committees. The fourth and last meaning is that leadership is being a professional role model, which refers to the way the leader thinks, talks and behaves.

The first two meanings, leadership being a position or a performance, underline the hierarchical nature of educational leadership at a university, as well as at TVET colleges, and how this leadership is recognised publicly. The second two meanings denote leadership as practice and being a professional role model, which underlines the everyday context of a higher education institution, since it relates to what the leader does every day and how the leader acts in a professional context. It would be very difficult to measure the last two meanings. According to Schwella (2008), it should also be borne in mind that decisions in higher education institutions are made in a non-market environment and performance measures cannot be based on notions of profit or productivity. In Juntrasook's (2014) survey of university staff, leaders put more emphasis on the latter two meanings, although only the first two are officially recognised by the institutional policy. There is, therefore, a difference between how an educational institution sees leadership and an individual understanding of leadership at the institution.

The purpose of higher education is constantly being redefined to serve the needs of the market, with the emphasis falling on acquiring employment-related skills. Yet, leaders still tend to see the purpose of their institutions as far nobler (O'Connor, Carvalho & White, 2014). Leaders at universities and colleges recognise the need for change but many feel reluctant and even ill-equipped to bring about change or transformation at their institutions in the way in which it could serve the requirements of legislation. In South Africa, 'transformation' also has a special meaning linked to the need to convert and restructure the previous divided educational system into a single, unified, seamless education and training system with the emphasis on equity and redress. Real transformation is thus dependent on the nature and quality of educational leadership (Bush, 2007).

There are numerous strategic changes facing educational leaders, few of which can be brought about without professional development (Kezar, 2014). Leaders tend to think of change as a linear exercise, namely to develop a goal, expand it into a vision, implement it and then assess and revise it. However, there is no recipe for dealing with change, since the circumstances and environment are never the same; therefore, professional development should be a lifelong process through different stages of a leader's career in order to renew, refresh and redirect leadership practice. All leaders have the responsibility to keep learning throughout their careers (Robertson, 2005).

Since leaders in TVET colleges have to try to deal with various competing operational pressures owing to the complexity of their environment, they have become reactive (rather than proactive), balancing the administrative aspects of their roles with the educational aspects (Robertson, 2005:45). Many leaders feel that they are 'middle managers implementing, at the behest of others, policies for which they feel no ownership' (Robertson, 2005:45). Choices have to be made between 'business strategy and education, national policy and local reality, entrepreneurship and accountability, managerialism and professionalism' (Callan et al., 2007:10) to avoid tension. These leaders lament the fact that they have had to become experts in fiscal and human resource management, public relations, collective bargaining and politics for which few are trained or experienced (Robertson, 2005). Lambert (2013) suggests that it is these practices that are in danger of undermining the purpose of education.

Lambert (2013:39) refers to external pressures such as nationally imposed funding methodology and increases in inspection and audit requiring specialist managers like 'directors of finance, quality and performance to lead these institutions in this new environment'. Collinson and Collinson (2009:374) claim that the FE colleges in the UK have become 'over-regulated' and that the many targets and audits that govern their operations have now become 'excessive and counter-productive', many of the targets being either 'unrealistic, inconsistent and/or contradictory'.

This dichotomy, Lambert adds, is a clash between 'student-centred pedagogic culture' and 'the managerial culture of managers'. He thus acknowledges that the role of the vocational college leader has evolved significantly from a 'chief academic officer' to one that combines the academic

responsibility with that of being the business executive (Lambert, 2013:41). TVET college leaders need to think and act differently to overcome new challenges. Traditionally, TVET leaders had previously either taught in or managed schools or worked or managed businesses in an artisanal environment. These leaders seldom had the necessary pedagogy of an academic institution combined with experience in a vocational environment. Currently, leaders need to 'combine educational leadership qualities with both generic organisational leadership qualities and strong business and commercial capabilities' (Foley & Conole, 2003:10). There is now a need for leaders with broader skills, vocational competence and pedagogic knowledge, to replace the traditional educational leaders (Collinson & Collinson, 2009:376; Eddy, 2010:3). These leaders are expected to be flexible on the one hand, but, on the other, they have to deal with 'multiple, shifting and sometimes contradictory (auditing) pressures in which colleges operate'. The way in which these leaders have to negotiate both policy and practice issues with their multiple stakeholders often has to depend on tacit knowledge (Collinson & Collinson, 2009:53) rather than on training as to how to approach these issues effectively.

Competing priorities cause many TVET leaders to become frustrated by the perpetual changes they perceive in national education policies. Leaders are distracted from the core purpose of their work, which is to improve teaching and learning in vocational colleges (Gleeson & Knights, 2008). Countries like Australia, Britain and the United States address all these issues through planned leadership development in their respective vocational sectors, but this has not been the case in South Africa. No specific, custom-designed leadership training programme for TVET college leaders exists in South Africa, even though the need for such a programme has been identified by two Green Papers (RSA, 1998; RSA, 2012). This need, however, has not been actioned in the White Paper for post-school education and training (RSA, 2013).

Callan et al. (2007) advocate leadership development as an investment, since it not only provides necessary knowledge and skills to leaders to assist the organisation with achieving its strategic intentions, but also improved capability and learning on the part of leaders to bring about positive change and innovation. If leaders know the difference between management and leadership, they should be able to avoid micromanaging and concentrate more on leading.

Management and leadership development is ideally a deliberate and planned activity which is driven by strategic and organisational objectives. The reasons why deliberate strategies for leadership development have become necessary are, firstly, succession planning, as it has been reported that many leaders in the VET sector internationally are nearing retirement age (Shults, 2001; Eddy, 2010; Simon & Bonnici, 2011; Sullivan & Palmer, 2014). Secondly, there should be career paths for leaders in the VET sector with specific training programmes aimed at developing leaders at every level. Thirdly, it is imperative to continuously identify the necessary skills and capabilities required by leaders in the complex vocational environment for leadership development programmes to remain current.

Yet, most leadership training programmes in the vocational sector are often fragmentary and of short duration, with considerable duplication, offered on an ad hoc basis and not forming part

of a longer strategic developmental goal or strategy at a policy level, even though the need has been recognised (Callan et al., 2007; Foley & Conole, 2003; Falk, 2003). The consequence is that these courses are ineffective in changing attitudes or behaviours.

Methodology and methods

This article reports on an interpretive study that consisted of four focus-group interviews with 61 current and potential future leaders at public South African TVET colleges, followed with 15 semi-structured individual interviews. The 15 respondents included purposively selected middle-level and executive leaders from three urban and six rural TVET colleges in seven provinces in South Africa. These individual interviews provided the data referred to below. The respondents are numbered 1 to 15 to ensure anonymity.

During the focus-group interviews, a list of competencies (knowledge, skills, attributes and attitudes) TVET college leaders needed to be effective leaders, were clustered into six broad themes which could guide the development of a future curriculum framework for custom-designed leadership development. The purpose of the individual interviews was to clarify the meaning of these themes, guided by the following broad questions:

- How do you understand the meaning of each of the identified themes determined by the group interviews?
- Tell me about your experience with each of the themes.

All interviews were digitally recorded, transcribed and analysed for trends. The data were analysed for categories (coding) and relationships between categories (categorising) by means of content analysis (Northcutt & McCoy, 2004). New ways of connecting categories were investigated (axial coding). Categories were integrated and refined (selective coding). The themes that emerged therefore reflect the researched reality. Connections between the categorised data and existing theories were made (Henning, Van Rensburg & Smit, 2004). This article focuses on the findings related to the respondents' perceptions on the roles of leadership and management in the sector, as well as their perceptions about the conflicting priorities of such leaders.

Findings and discussion

The dichotomous relationship of leadership and management

The data in this study corroborate the findings of other international studies (Callan, 2001; Foley & Conole, 2003; Callan et al., 2007; Collinson & Collinson, 2009) that the lines between leadership and management have become blurred in vocational education. Part of the reason for this phenomenon (at least in the South African context) may be that many leaders of TVET colleges came from a teaching background and were not always adequately prepared for the role of leader, as one of the respondents who was interviewed in this study suggested:

> *People coming from the school sector … cannot cope in the TVET colleges because they don't know the dynamics and they don't understand the influence of the different stakeholders … [and] the legislation itself.* [Respondent 7]

Another respondent similarly stated that management and leadership roles were closely related as a result of coming through the teaching ranks to become leaders at colleges. However, it was frowned upon if a leader tried to be a manager as well. This would be like succumbing to operational pressures.

> *There's a difference, a bit of an overlap [between] whether you're a manager or whether [you're] a leader. But I think, because most of us came through the system, the majority are managers and not leaders. Deputy principals can be more on the management side but you can't have the principal that is the manager [wanting] to manage the leave, the hours that people are teaching. It doesn't work.* [Respondent 3]

Management was believed to be an overarching term that referred to all the support functions in the college and management skills were the tools needed to manage these functions. Managers were process owners of the various functions at the college.

> *Management skills [are] an overarching theme … [to] make sure that we deliver effective service.* [Respondent 5]

The support functions had thus become a daunting task, as highlighted by many of the respondents.

> *Incorporate all the various departments you might have within an institution or your units. And that includes your functional management … of an institution, which could include your Human Resource Management, Corporate Services, your Corporate Communication, Marketing and Public Relations, Financial Management, Quality Management.* [Respondent 1]

> *Things like our HR, the finances, asset management, the infrastructure – all those strategic functions in the college need to be managed [; and] Supply Chain Management.* [Respondent 2]

> *HR, for example, is a huge portfolio.* [Respondent 4]

The respondents indicated that managers needed to be trained to fulfil the support functions, as they were not always qualified. This state of affairs might cause serious problems, as indicated by Respondents 1, 2 and 10:

> *We need to train the people [in those positions].* [Respondent 1]

> *We know sometimes they get appointed and they don't have the proper qualifications. Supply Chain Management, the whole procurement function, is a management function and, if people are not trained, … you find that people get suspended or go to jail; all those things, tender fraud and things. So, all those things are critical for me to be trained [in] and the managers are then equipped to manage things.* [Respondent 2]

> *We don't have qualified and experienced managers at the moment. You find that people are not trained; then you find that people get suspended or go to jail. These facets are critical; that drives the sector.* [Respondent 10]

The respondents expressed the need to know something about all these managerial functions in order to make informed decisions, but had to take care not to become involved in operational functions in view of the danger of micromanaging. The respondents' views are highlighted below:

> *So you are part of all these facets of management, although you are not the process owner driving that as a management function, but you are feeding into it because they are our support functions. So it is not just for the HR Manager or the Finance Manager. It is for the whole management team, because we are all featuring at any one point on these decision-making bodies.* [Respondent 2]

> *Leaders need to know a little bit about the different areas.* [Respondent 6]

> *You don't need to do the books but you must be able to interpret the financial data presented to you in order for you to make the correct decision, because you are accountable.* [Respondent 7]

Respondents recognised the need for leaders to be visionary, to be able to identify opportunities for the institution and to make things happen. Leaders had to remain current with new developments, remain in tune with the community and be informed about national and international trends in changing times. In order for them to be able to do this, they needed to free themselves from managing the various operational departments.

This also alludes to having to operate across different sectors and having to balance the internal and external roles of the college principal.

> *The leader has got to be a visionary not only in the South African context, but also needs to know what is going on in the rest of the world … to develop relationships, to identify good practice, to be able to communicate with other people in order to identify benefits for his or her institution … We cannot be locked up in our offices. We need to engage with the rest of the world … [be] up to date with current developments. The college has to be sensitive with regard to what's going on in the community.* [Respondent 10]

The respondents were clear about leadership skills, and inspiring and motivating followers to share the vision, thereby getting the best out of them:

> *[A leader] sees the much bigger picture. The leader should be out there to say, 'let's go for that', and then the managers must make that happen.* [Respondent 3]

However, leaders at TVET colleges were involving themselves with 'mak[ing] it happen' as well. Although they understood the difference between leadership and management, it was not always possible to distinguish between the two roles at the colleges. They also acknowledged that, through leadership development, they could become better leaders in a complex situation.

Leaders needed to learn to be team players, surrounding themselves with expertise and people with complementary leadership styles, since they could not be expected to know everything. Leaders should thus be aware of different leadership styles and that certain styles were suitable in certain situations, and to adapt them accordingly.

> *You don't have to be an expert in everything to be a leader, but then at least surround yourself with the best people in the field, and don't feel threatened by those people and push them away because they know more than you.* [Respondent 3]

Leaders of TVET colleges needed to develop extensive sector knowledge of teaching and learning so that they could keep up to date with developments and trends in order to make the right decisions and steer the college in the right direction. This includes catering for a diverse demography of students.

> *Critical in terms of understanding what [it is] that you offer [is:] are you addressing what is the need of this specific business or industry in your environment … what does the community want from you? Do you have partnerships and linkages with who you have to go to? Do you understand that there must be work-integrated learning? … [Is] what must be taught … really taught?* [Respondent 6]

Respondents also supported the idea that leaders could be developed to be better leaders. They stated that there were many aspects of leadership that could be developed.

> *We really need that dynamic – business leadership with a more modern style. … We need a person who can really be business-wise, otherwise we are not going to survive.* [Respondent 3]

> *You're not born with skills.* [Respondent 7]

> *[Leaders] can be developed to be better leaders.* [Respondent 8]

The respondents clearly recognised the qualities of a good manager or leader as well as the need for leadership development. However, there were conflicting priorities that blurred the roles of leadership and management and possibly deflected leaders from focusing on their core business.

The five conflicting priorities of vocational leaders

Both middle-level and executive leaders at the TVET colleges indicated in their interviews that they tended to lose sight of their core business, which they identified as teaching and learning. This loss of focus was summed up by Respondent 15:

> *Your business is education. We tend to forget [that].*

One of the reasons for this loss of focus seems to be that there were a number of conflicting priorities that distracted them from their core business. This is similar to the experiences of leaders at Australian TAFE and FE institutions in the UK (Callan et al., 2007; Foley & Conole, 2003; Gleeson & Knights, 2008; Collinson & Collinson, 2009). Firstly, leaders at these colleges have to operate across different sectors. According to Respondent 4:

> *We are responsible to parents and students and companies and other stakeholders.*

Leaders now had to consult with important stakeholders such as the student representatives, the unions, the community, business and industry. A new skill that needed to be acquired was that of consultation with all stakeholders. Trade unions had become major challengers of operations at colleges. These consultations were taking up so much time that respondents in this study acknowledged that there had been a loss of leadership focus with regard to the core business of the college. If teaching and learning were not taking place, it would be like 'missing the bus' (Respondent 4), as failure would have an impact on the finances and human resources at the college. So, leaders needed to 'look after your core business' (Respondent 5) to ensure that the colleges operated effectively.

Secondly, there was a diverse demographic of students at the colleges. Middle-level and executive leaders experienced teaching and learning differently. Executive leaders were clear that the leader needed an 'overview of what is happening because you must know … not the detail' (Respondent 3), while middle-level leaders saw that their responsibility for teaching and learning at a vocational level was because the 'parent must pay … [so] we must treat that student with respect … [and teach with] passion … [and not simply because it was a] way of earning a salary' (Respondent 11). Respondent 11 continued with:

> *[Leaders should] make sure that things happen as they should; [teaching and learning are] 'why we're here … [but] we tend to forget this.*

The literature suggests that concepts of management and leadership at vocational institutions have become blurred, but it does not mention that leaders tend to forget the

main focus of their positions, as suggested in the previous respondent's statement, which is teaching and learning.

The emphasis seemed to change once leaders moved away from the classroom. For example, Respondent 15 said that teachers were regarded as being at a 'lower level', and once some of these teachers moved from the 'ranks of the educator' into a 'management position', they tended to forget what they had had to deal with at the 'lower level'. This respondent added that, as a leader, you were 'removed from the situation' so that it was not 'so much at the forefront of your thinking anymore'.

Thirdly, leaders had to balance their internal and external roles. Since industry plays such an essential role in a TVET college, respondents indicated that the TVET college leader could not be deskbound, but had to build collaborative relationships that could influence the curriculum and have a positive effect on classroom practice. Two respondents had the following to say about how the colleges could ensure that the students were employable, since that was the mandate:

> *As a leader, you have to make sure that you encourage collaboration with industry to ensure that what you're producing is actually what's wanted out there.* [Respondent 7]

> *Our mandate is to make people employable for the workplace.* [Respondent 8]

The challenge for leaders was to be the face of the college outside of the college, while meeting internal obligations as academic head of the college.

A fourth priority for leaders at these colleges was to deal with various competing operational pressures at the college. There had been significant changes to legislation governing the colleges and, if leaders did not 'stay abreast', they were in danger of 'losing it' (Respondent 10). These changes resulted in various management functions having to be complied with first even though they were really subsidiary to teaching and learning. As one respondent cautioned:

> *You have a responsibility to make sure that that student [moves] through the system and gets a qualification. That is why you are there. You are supposed to give the support to this person, make sure he gets financial support and academic support, holistic support, whatever.* [Respondent 9]

It was clear that leaders needed to know something about all the different managerial functions in order to make informed decisions, but they had to take care not to become involved in operational functions in view of the danger of micromanaging. Respondents pointed out:

> *Leaders need to know a little bit about the different areas.* [Respondent 6]

> *One can fall into the trap of micromanaging your institution.* [Respondent 10]

The fifth priority was facing external pressure, and the role of the principal had to evolve to respond to the competing requirements of education and business.

> *You cannot just manage a college [from] a prescription in a textbook … you will have to be open to other people's opinions.* [Respondent 10]

At TVET colleges, all these tensions were manifested in the way in which internal and external communication took place. There was a prevailing sense of isolation and miscommunication between the colleges and the employer, on the one hand, and the college management and staff, on the other. In the former case, colleges were no longer clear about with whom they had to communicate officially. Communication between the employer and the colleges was either not happening timeously or effectively, negatively influencing communication between top and middle management, or the approach was top-down, which caused frustration and a feeling of rejection. In the words of Respondent 3:

> *You just get instructions [from the DHET] that you will do this or you will do that by tomorrow or the day after that … and if you don't want to, then we will suspend you … you really get that feeling they feel absolutely nothing for you … there is no support … we feel as though we have been thrown to the lions at this level … it is really just a feeling of they're hunting us down.*

According to the same respondent, leaders of the colleges believed that they 'are the last people to hear about the legislation'. Most of them had come from a teaching background and felt that they were inadequately trained for the potentially explosive situation in which they now found themselves. External bodies such as trade unions had been involved in staff deliberations at the bargaining councils and so had a better grasp of the implications which they passed on to the staff.

> *[W]e have got unions here that are threatening me and I cannot produce anything because I haven't got the signed legislation.* [Respondent 3]

These unions thus appeared to have the upper hand at the colleges, causing disruptions at staff and student level and holding this group of leaders to ransom.

Conclusion

This study found that leaders at South African TVET colleges have lost sight of reforming and transforming the colleges in order to conform. The data presented in this article suggest that, even though the respondents had specific views on how leaders were supposed to be and what they were supposed to do – other than manage – the distinction became blurred in practice owing to competing priorities between leadership and management demands. Leadership at the TVET colleges had become a balancing act.

A surprising finding in the South African context, which deviates from international findings, is that the focus of these respondents in this study should have been on teaching and learning, yet the focus had shifted to attending to operational matters and conforming to legislation. Current and aspiring leaders of South African TVET colleges tended to micromanage the various support functions instead of focusing on the major purpose of their work, and that was to improve teaching and learning at TVET colleges.

The need for leadership development in the VET sector has been recognised worldwide and given priority focus since 'multi-dimensional leadership is necessary in complex organisations' (Eddy, 2010:33–34). Leadership development should also be prioritised in South Africa's TVET sector, but it is important that legislators, practitioners (including current and future TVET leaders) and researchers take cognisance of the perceived loss of focus on teaching and learning by leaders and managers, as it has implications for policy, practice and any leadership development initiative within the sector. A custom-made training programme for vocational college leaders, incorporating the skills and knowledge needed by these leaders such as 'business skills, management skills, financial planning, budgets, people skills', would be preferable (Simon & Bonnici, 2011:3). If TVET colleges in South Africa are to rid themselves of the stigma of dysfunctionality (RSA, 2013) and become the public's first-choice post-school institution, they will need focused and well-prepared leaders to do so.

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Transforming vocational education: One lecturer at a time

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ABSTRACT

The South African technical and vocational education and training (TVET) college sector faces a myriad development needs, including the academic, professional and motivational preparedness of college lecturers.[1] While attention is being paid to dealing with challenges at colleges at the macro-level or systemic level, there appears to be less focus on the micro- level, that is, on lecturers or teachers and their day-to-day classroom challenges. This article reflects on a case study involving TVET college lecturers who participated in a professional development programme that attempted to incorporate principles of a humanising pedagogy in its design and delivery. Feedback was obtained about the influence of the course on classroom practice shortly after the programme, and, again, two years later, it was elicited through a small-scale study of participant self-reflections. Qualitative data revealed that the participants had perceived a positive and potentially transformative influence on their practice, which they related to their exposure to the principles of humanising pedagogy. By revisiting and sharing what was learned in a study that preceded a new lecturer development policy and bringing into focus the principles of humanising pedagogy, we hope to inspire those in our university faculties who are currently designing qualifications for college lecturers. Our contention is that infusing these principles into new curricula could possibly contribute to transforming this sector – one lecturer at a time.

KEYWORDS

TVET college; TVET lecturer; humanising pedagogy; capabilities approach; professional development programme; vocational pedagogy

1 The world over, those who teach in vocational settings are referred to variously and interchangeably as 'vocational teachers', 'college lecturers', 'educators', and so on. In South African TVET colleges those who teach are referred to as 'college lecturers' and we use this term predominantly in this article.

Introduction

There can be little doubt that the South African technical and vocational education and training (TVET) sector has been preoccupied with change at the macro-level or systemic level during the past 15 years or so – as successive policy documents indicate (see, inter alia, the National plan for FET colleges, 2008; FET Colleges Amendment Act 3 of 2012; *White Paper on post-school education and training*, 2013). Given the large number of youths (about 3.1 million) who are not in employment, education or training, also referred to as NEETs (DHET, 2013a), and the many policy intentions for TVET which have yet to be realised (DHET, 2013b; Gewer, 2016), systemic change still has some way to go. This article argues that attention should be paid to the micro-levels at which transformation might occur, for instance at the level of the vocational college lecturer engaged at the coalface of change in the TVET classroom.

According to Lucas, Spencer and Claxton (2012:13):

> The effectiveness of all education systems depends critically on the quality of teaching and learning in the classrooms, workshops, laboratories and other spaces in which education takes place. While outstanding teachers (including lecturers, trainers, tutors, and coaches), engaged students, well-designed courses, facilities which are fit for purpose, and a good level of resources are necessary if any kind of educational provision is to be excellent, they alone are not sufficient. The real answers to improving outcomes from vocational education lie in the 'classroom', in understanding the many decisions teachers take as they interact with students.

TVET lecturers have operated within an environment of uncertainty and instability since 1998, thanks to policies that have had an impact on college structures, governance, management, staffing, students and curricula (Gewer, 2016). In the main (but not exclusively), funding constraints have led to widespread student and lecturer protest action (HSRC, 2005; Nkosi, 2012), and these have resulted in strained lecturer–student interactions that have had a negative influence on teaching and learning and have exacerbated what were already dismal pass and throughput rates (HSRC, 2005:46). A factor that has been associated with poor student performance in TVET has been that a large number of lecturers (approximately 50%) are professionally either unqualified or underqualified (Mgijima & Marobe, 2012), with 42% having had fewer than three years' lecturing experience. The rapidly growing student population since 1995, whose expansion has not been accompanied by a concomitant increase in the number of college lecturers, together with the changes in college curricula, have led to a range of sheer challenges for college lecturers (McBride, Papier & Needham, 2009; Blom, 2016b).

Need for humanising pedagogies

Efforts to transform colleges, however, have not occurred in a vacuum. On the contrary, they have been part of the transition to a new dispensation since the election of a democratic

government in a South African post-apartheid context that necessitated the dismantling of previous discriminatory, racialised and dehumanising systems and structures. In this regard, education and training in South Africa could be described as taking place in a 'post-conflict and traumatised' society (Keet et al., 2009) in which the principle of 'mutual vulnerability' (Keet et al., 2009) should be embraced in order that unequal power relationships are confronted and dealt with both in the domain of education and elsewhere. Such an approach finds resonance in the critical pedagogical theorising of Freire (1972; Giroux & Freire, 1986), which provides a framework for humanising pedagogies that attempt to establish trust, reconciliation and an understanding of the many forms of dominance by one over another.

It is against a background of profound hurt and distrust that we believe lecturers in the TVET sector could benefit from incorporating the principles of a humanising pedagogy (Zinn & Rodgers, 2012) into their teaching practice. In this pedagogical orientation, the humanity of both lecturer and student is acknowledged and respected in a situation where learning is co-constructed, and it is in the college classrooms, workshops, laboratories, simulation venues and offices – the spaces where lecturers and students encounter one another – that this process must begin. Zinn and Rodgers (2012) attempt to shed light on the implementation of a humanising pedagogy by asking a number of questions. For example, 'How do we get beneath the rhetoric to the praxis of a humanising pedagogy?'; 'What does a humanising pedagogy look and feel like?'; and 'What does it require of us in the context of teaching and learning environments and interactions?'.

Wedekind (2010) describes TVET college lecturers as suffering from 'change fatigue', ascribing terms such as 'disempowerment', 'disillusionment', 'depersonalisation' and 'alienation' to reflect lecturer responses to 'changes in curriculum, the nature of the new learners, and the management of the colleges' (2010:311). On the other hand, the high failure and dropout rates in the TVET sector have, in addition to lecturer inadequacies, been ascribed to students' cognition challenges, as well as low levels of motivation and self-discipline (Papier, 2012), in addition to the fact that many TVET college students enter colleges with, inter alia, low self-esteem and learning difficulties (Papier, 2012). It is generally agreed that TVET continues to contend with negative stereotyping, with students, first, often unjustly becoming victims of a 'deficit model' perspective and, secondly, being defined not by what they bring to the college – their capabilities and aspirations – but rather by what they appear to be deficient in. The Nigerian writer, Chimamanda Adichie (2009) refers to this in her talk on Ted.com as 'the single story [which] creates stereotypes … not that they are untrue, but that they are incomplete … [and] become the only story'. An example of the 'incomplete story' with regard to TVET college learners' achievement (or lack of it) in South Africa is that the majority of students are learning in a language that, for most of them, is not a first or home language. The difficulties posed by this reality have contributed to a 'deficit view' of TVET students, 90% of whom are black.[2]

2 The use of the term 'black' is used solely in terms of the historical racial classification in South Africa and in no way implies acceptance of such categorisation. In this instance, it refers to all who were not classified as 'white' during the apartheid dispensation.

In relating the challenges faced by black minority student groups in the United States, Bartolomé, (1994:173) states that (minority) students are generally regarded as 'culturally and linguistically subordinated' and argues that re-evaluating the success (or failure) of instruction of these students requires 'a shift in perspective – from a narrow view of instruction to one that is broader in scope and … takes into consideration the socio-historical and political dimensions of education' (Bartolomé, 1994:176). Furthermore, in her view, one should develop 'pedagogical structures that speak to the day-to-day reality, struggles, concerns, and dreams of these students' and 'pedagogical underpinnings that serve to humanize the educational process', so that students are able to engage actively in the teaching and learning space. While not a minority in the quantitative sense, black students in South Africa still experience the legacy of decades of cultural and linguistic subjugation based entirely on notions of racial superiority. It would therefore seem to be self-evident that a restorative humanising approach is required.

However, it is not only the institutionalised perspective and deficit view within the TVET sector that requires our re-imagining. In an attempt at rethinking the purpose of vocational education, Powell (2012: 644) argues that there is a need for a 'capabilities approach' to be applied. Powell (2012:646) posits that 'by putting the needs of people first – rather than the needs of the economy – the capability approach brings the discourse of social justice, human rights and poverty alleviation to the forefront'. This is in line with Sen's (2003) argument that 'the challenge of human development demands attention being paid to a variety of sectoral concerns and a combination of social and economic processes' (2003:54).

We are of the view that our case study, albeit being of limited scope, highlights the potential benefits of infusing potentially transformative pedagogies such as humanising pedagogy into curricula, more specifically in this case into professional development of college lecturers. As higher education institutions around the country engage in their curricular and programme development processes for new vocational teacher qualifications, we believe that the realities of education and training in a country still grappling with the building of a post-conflict society should not be underestimated.

In addition, in the emerging field of TVET research in South Africa, researching the enactment of a humanising pedagogy adds to the local body of knowledge on issues that affect vocational teaching and learning, such as developing a vocational pedagogy (Blom, 2016a; Papier, 2015; Lucas et al., 2012) and a vocational identity (Papier, 2011). The next section sketches the background for a small-scale study of implementing some of the principles of a humanising pedagogy in a professional development programme.

Implementing humanising pedagogies in a new programme

During 2012, the then Nelson Mandela Metropolitan University (NMMU[3]) in the Eastern Cape province developed and offered a short professional development programme, the

3 The university was known as 'Nelson Mandela Metropolitan University' prior to 2016, when the name changed to simply 'Nelson Mandela University'.

Vocational Education Orientation Programme (VEOP) to 42 professionally unqualified lecturers from two local TVET colleges. Current official policy on professional lecturer qualifications (DHET, 2013) describes 'unqualified' lecturers as those who 'do not hold an academic qualification that represents at least three years of post-school full-time study … nor do they hold a professional teaching qualification' (DHET, 2014:5). Underqualified lecturers would be those who have had some level or aspect of recognised training but not to the extent that they could be regarded as fully qualified according to the official requirements.

At the time when the VEOP was offered in 2012, official policy on lecturer qualifications had yet to be finalised, and only a few universities were offering 'legacy' or dated qualifications that focused on pedagogy for vocational lecturers. Since the advent of new vocational programmes in 2007 (the National Certificates (Vocational)) that placed new teaching and assessment demands on lecturers, faculties of education have been under pressure to offer development programmes or new qualifications that acknowledge the changed teaching and learning conditions in TVET colleges. In particular, college lecturers who had been employed at a time when teaching qualifications were not compulsory felt the need for assistance as they had not undergone initial teacher training.

The VEOP was therefore an interim response to the dearth of teacher training qualifications appropriate to TVET lecturers at a time when the need for such an intervention was expressed. The programme was developed collaboratively by a combined group of university and college participants and was then piloted by one or two universities in other provinces. The short learning programme, intended as an induction programme for new college lecturers – especially those from an industry environment new to teaching in formal institutional settings – was located at Level 5 of the South African National Qualifications Framework (NQF), a post-matric level. Subsequently the programme was incorporated into the new Policy on Professional Lecturer Qualifications for TVET college lecturers (DHET, 2013) as a 30-credit award that universities offering the new qualifications for college lecturers could grant to those who had achieved the VEOP prior to their enrolling for the new full qualification.

The VEOP offered at NMMU consisted of six sections, namely:

- TVET college context and policy environment;
- Curriculum interpretation and planning;
- Understanding and managing the learner;
- Methodology – integrated teaching and assessment;
- Conducting and managing assessment, and
- Becoming a reflective practitioner.

Each of these six sections was rooted in an understanding of the TVET college context and what is required of a 'vocational teacher', making it highly contextualised and relevant to college lecturers. Within these six sections, which we offered over a period of approximately six months, the participants were exposed to, and experienced, the principles of a humanising pedagogy in the delivery of the course.

During the period in which the VEOP was being planned for delivery, the university was in the process of implementing its strategic plan, referred to as Vision 2020 (NMMU, 2010:21). Vision 2020 posits the concept of a humanising pedagogy as being an:

> … approach that respects and acknowledges diverse knowledge traditions and engages them in critical dialogue in order to nurture a participative approach to problem-posing and -solving, and the ability to contribute to a multi-cultural society.

This approach was also reflected in the mission statement of the university's Faculty of Education, which makes it an imperative for all education programmes offered by the faculty to be underpinned by principles of humanising pedagogy. As part of a process towards this, a number of interactive faculty workshops were facilitated during 2011 and 2012, culminating in a draft document containing nine principles of a humanising pedagogy (Zinn & Rodgers, 2012:78; see also Annexure A). These principles therefore guided the faculty's development and delivery of the VEOP. As a new programme and a short course, the VEOP afforded curriculum developers the necessary flexibility required for an innovative approach to the design and delivery of the course. As stated above, this programme preceded the official new suite of qualifications for vocational college lecturers and was offered as an 'induction' to pedagogy for lecturers who had not acquired a formal teacher qualification. The VEOP therefore focused on providing an introduction to education theory and practice that would help lecturers to adopt an outcomes-based teaching and assessment orientation, including learner-centredness and activity-based classroom strategies, in line with the new vocational curriculum policy.

TVET college lecturers who were students on the programme were not simply handed a list of humanising pedagogy principles, but were introduced to the basic precepts of a humanising pedagogy through an interactive and reflective process. First, the participants' own experiences of feeling humanised or dehumanised were shared with the specific goal of identifying the elements that had made these experiences particularly humanising or dehumanising. Through this process, the participants began co-constructing an understanding of, and an orientation towards, a humanising philosophy of education.

Secondly, the participants were sensitised to the strong relational foundation of a humanising pedagogy when they were introduced to, and interacted with, the faculty-adapted version of the 'I, thou, it' framework as originally proposed by Hawkins (1974) and adapted by Rodgers and Raider-Roth (2006). This adapted framework underscored the Faculty of Education's understanding of a humanising pedagogy and became a cornerstone of its approach to the VEOP curriculum.

Thirdly, the participants undertook a series of activities in lecture sessions, each designed to illustrate the nine principles of a humanising pedagogy. The lecturer participants were exposed to these principles throughout the duration of the programme, as each principle was examined and responded to individually, in pairs and in small groups, followed by whole-group discussions on questions that asked: 'What is my understanding of this principle?; 'How can I make this

principle come alive in my classroom?'; and 'What activity can I do over the next five days to ensure that this principle is present in my class?'.

To highlight the role of humanising pedagogy in participants' own experience of the VEOP course and to place this approach at the centre of their practice, each of the six VEOP sections was presented within the framework of a humanising pedagogy and with reference to the three guiding questions in the paragraph above. Lecturer participants were encouraged to 'develop their capacity to observe skilfully and to think critically about students and their learning' so that they could begin to 'take intelligent action based on the understanding that emerges' (Rodgers 2002: 232). Self-reflection was invited in discussion forums created on the online learning management system, MOODLE. Together with the programme evaluations by participants which were elicited about midway through and again on completion of the VEOP, we attempted to gauge the participants' initial responses to the notion of a humanising pedagogy by asking them to respond to the following prompts: 'The aspects of the course that I enjoyed most are …'; … The aspects of the course that I enjoyed least are …; 'The value of the course for me lies in …'.

Qualitative data were gathered via questionnaires, individual and focus-group interviews from college lecturer respondents across five campuses of two TVET colleges in the Nelson Mandela Bay Metro of the Eastern Cape province. Of the 42 participants enrolled in the VEOP, 10 lecturers were under 30 years of age; 12 lecturers were aged between 30 and 40 years; 14 lecturers were between 40 and 50 years; and 8 were over the age of 50. At 66% of the group, males outnumbered females at 34%. With regard to demographics, there was a fairly even representation of historically defined race groups in South Africa. Furthermore, the participants lectured in a variety of subjects and were drawn from across 14 different programmes at their TVET colleges, including Engineering, Tourism, and Business Studies. The majority of the participants had been teaching in the TVET college sector for more than 10 years without having undergone any formal teacher training.

As the professional development programme underpinned by humanising pedagogy principles and methodology was new to the university and to the colleges in the Eastern Cape, our study was an attempt to learn from the participant experiences, especially about their understanding of humanising pedagogy through the course presented. We also wanted to ascertain whether they believed it was having any influence on their teaching once they returned to their classrooms. It is important to note that we were focused on the lecturers' own perceptions of change in their thinking and practice, and the interviews therefore probed their personal development as they perceived it.

Data were gathered about midway through the delivery of the VEOP and then again two years after the course had been completed. The same lecturers who had undertaken the programme were subsequently interviewed, the authors having borne in mind that the impact of interventions might be felt only after a period of time, or could dissipate. Since the respondent group was limited to the one group of lecturers enrolled in the VEOP, the interviews were conducted with a convenient sample of individual participants, that is, whoever was available,

and also in a few focus groups. Ethical approval was obtained through the usual university process, and permission was sought from the principals of the two TVET colleges involved as well as from the participants.

Responses to framing curricula within a humanising pedagogy

Initial responses to the request for reflections from lecturers on the MOODLE platform confirmed that the VEOP course had been their first exposure to the notion of a humanising pedagogy and its concepts. The participants' posts on MOODLE provided evidence of new learning, as two respondents stated (echoed by others) that:

> *I knew nothing about a humanising pedagogy.* (L1)
> *[T]his has made me as a lecturer look at myself and the way I treat my students.* (L3).

Another lecturer noted that she believed her actual practice had changed as a result of her new understanding, leading to one of her students asking: *[W]hat has happened, why [are you] teaching so [differently]?* (L18).

The participants also referred to some of the aspects of the principles underpinning a humanising pedagogy that they had related to in particular. In this regard it was possible to detect a growing awareness of a key principle, that of 'acknowledgement of others', in reflections on the delivery methodology of the programme, with comments such as the following being made:

> *[I]t gives us a chance to say our say.* (L5)
> *… we are confident in our space to let our voices be heard.* (L16)
>
> *'[T]here is respect for each other in the class.* (L25)
>
> *[T]eaching is not just about teaching the work that's in the textbooks; there is a human side, a face, to it.* (L40)

These views acknowledging a pedagogy that encourages listening to others were expressed by many of the participants.

A principle that finds expression in African language and culture refers to connectedness, relationships and community, and can be summarised in the African context as 'ubuntu' or '*umuntu ngumuntu ngabantu*' , which can be translated as: 'a person is a person through other persons' (Gade, 2011:303). Coupling this principle with the 'I, thou, it' framework of Rodgers and Raider-Roth (2006) in the VEOP created an opportunity for the participants to explore the nature of relationships both among themselves and with their students. In their relationships with each other as peers, the participants referred to the benefits they experienced in growing a 'community of practice' (Wenger, 1999) and reinforcing the strong relational component of a humanising approach. Responses on this aspect included:

> *I have learnt so much from people in the same position as myself.* (L7)
>
> *I enjoyed sharing my experience and telling my stories.* (L9)
>
> *I am learning to know and work better with my colleagues.* (L38)

Another participant revealed that she saw her new learning extending beyond the classroom, saying:

> *The principles learnt here are very useful. It is so critical for me because it moulds me, then the students … hopefully it spills into the community.* (L29)

The feedback above suggests that there were, at the very least, changes in the perceptions of the VEOP participants of their learners. In obtaining first-hand experience of the precepts of a humanising pedagogy in their own learning, they were enabled to grasp some of its characteristics, as a participant exclaimed:

> *What a humanising experience!!!* and added … *One of the things that stood out for me during the VEOP journey was that my voice was also heard … how to treat and handle students with respect.* (L23)

While we were encouraged by a participant's parting comment immediately on completing the VEOP, in which she stated, *I'm never going to teach the same way again,* we were cognisant that good intentions, however encouraging at the outset, might peter out under the pressures of classroom life once the lecturer was immersed in the college again. In view of this, we conducted a follow-up study with the VEOP participants (as far as it was possible to locate them) two years after completion of the programme. A challenge of any longitudinal study is participant attrition (Cohen, Manion & Morrison, 2011), and, given the staff turnover in TVET colleges for a range of reasons, not least of which was the unstable policy landscape, a low response to the follow-up research – 25% of the original cohort – was perhaps to be expected. What was encouraging, however, was that 14 of the original VEOP students agreed to participate in focus-group and individual interviews.

Since we concentrated on receiving the participants' reflections on their practice subsequent to their professional development course, we allowed them to express themselves freely and verification of their feedback was not sought. In spite of the follow-up group of respondents being smaller than the initial group from whom data had been gathered, we were interested in hearing whether lecturers still reflected the understandings they had communicated earlier.

The data revealed that two years after they had undertaken the VEOP and had been introduced to a humanising pedagogy, the participants whom we were able to reach still believed that the principles they had encountered remained central to their classroom practice, and that it had definitely, in their view, influenced their relationships with their colleagues and students.

Interview responses suggested that the VEOP participants interviewed were aware of changes within themselves and their students, and the following extracts reflect the sentiments that were echoed in the focus-group discussion:

> *I had never taught before, so you have that perception that if you're a teacher, you must be serious, that you don't want to form that kind of a relationship, but now the difference is, I have relationships with students who have already passed, and they still contact me and are keeping me updated, but before that I didn't really care … .*(L3)

> *… all I can say, the management of my class has changed, and I get to know my students, because now I get closer to them, because of the VEOP, because we learned about humanising pedagogy, and ubuntu as well, so I can get closer to them, so I understand them better than before. I'm looking at my students differently now … .*(L11)

> *My students actually call me by my first name and whatever respect now that they have for me, I think I can say I have earned it and all of those students who now call me 'ma'am', they call me 'ma'am' because I think they feel that I deserved to be called 'ma'am'. There was literally a barrier. And now that humanising stuff, we are actually starting reacting and getting to know the student as a person, the student is there to participate in the class, not just listen to what I say. Communication is much more open now.* (L41)

Each of the participants in the follow-up study indicated that they were more sensitised to the socio-economic context from which the majority of their students came and understood that these circumstances could influence their students' performance in class. As one said:

> *[Students] have serious challenges which negatively impact on their learning, e.g., domestic/family matters, financial stress.*

An appreciation of the individuality or uniqueness of each student, which is central to a humanising context, was expressed, and participant views on this were directly linked to humanising pedagogy as perceived by them, as follows:

> *You look at each student individually. You look at the person, you get to know him. His problem becomes your problem ….*(L5)

> *It also taught us how to engage with students at their level, 'cause they all come from different backgrounds, so we needed to understand their backgrounds. We saw them differently after the programme ….*(L39)

> *I don't see my students the way I used to, I don't look at them the way I used to look at them before I attended … I have a sense of respect for them, and understand where they are coming from and their problems that they would have in the class. I think I started to listen better, to acknowledge each and everybody's stories.* (L17)

These comments represent an important step towards a situation in which students and lecturers are 'breaking away from their unspoken antagonism and negative beliefs about each other and are getting on with the business of sharing and creating knowledge' (Bartolomé, 1994:177). The professional development programme and its attempt at infusing humanising pedagogy principles appeared to have sensitised college lecturers and awakened a sense of social awareness, which respondents held had an impact on their practice. As one said:

> *[S]ome of the living conditions, where they [are] coming from, their backgrounds, levels of education – which [are] a problem – language barriers; we dealt with all those things … what we see a lot, students are hungry, then you open your lunch box. They sometimes wait for you at your class.* (L23)

At the heart of a humanising approach is acknowledging the uniqueness of each learner, their individuality, and the lecturer respondents definitely revealed an awakening to this understanding. The impact on teaching and learning specifically was not measured in this illustrative case study. But it was noted that 70% of the respondents in the second round of the research indicated that two years after completing the course they were applying multiple teaching strategies and had varied their assessment approaches as a result of appreciating that learners in their classes learned differently. The respondents were therefore also attempting to cater for different learning styles in their classrooms. Such changes, small as they might be, were attributed to the influence of the course, as the following extracts suggest:

> *… my subject is theoretical, so you just lecture, lecture, lecture … but now you're bringing all that, you're welcoming the students more, you know, you're allowing them to participate and things like that … so, you know, that humanising principles stood out for me the most in the whole course.* (L2)

Another respondent added:

> *[T]he way that you teach now, it's not rigid any more … it's more comfortable, you're more connected with the student.* (L14)

Awareness of how a participant had taught prior to the course was expressed as follows:

> *What I learnt was that I talked too much. I remember I used to come to class with this knowledge and I would just talk and talk and I would just dump it on them … but now what you see is … I ask them how it's going … 'You will see a safe haven in my class – he must feel safe and free to ask questions, he must not feel intimidated. That changed a lot in my class.* (L8)

Conclusion

This article has not sought to make any 'grand' or spurious claims – we have simply allowed lecturer self-reflections to speak for themselves. However, it can be stated that, as a professional

development programme specifically developed for the TVET context, at a time when lecturers had few such interventions, the VEOP as a short professional development programme certainly served its purpose. This is illustrated amply by the following extract from a new college lecturer's response:

> *… for me personally, the VEOP opened worlds that I never actually encountered; remember, I came out of the trade, I didn't have teacher's experience up-front … literally, the day I started here, I was taken by the arm, the door was opened, I was pushed inside and when I turned around, the door was slammed behind me, and there were thirty students in front of me … That's how I started my teaching ….* (L28)

Furthermore, this 'test case' of infusing humanising pedagogy principles into the design and development of a new programme for college lecturers provided evidence, however tentative, that lecturers were open to new ways of thinking and doing in their interactions with their students and with one another. This can only bode well for large-scale, more sustained lecturer development programmes in fulfilment of the new qualifications for vocational college lecturers. In the still fractured and fragile society in which college learners, lecturers and indeed all South Africans are trying to chart a course, we believe that humanising pedagogies have resonance and relevance. And that such pedagogies have the potential to contribute, in a small way, to transforming TVET colleges – one lecturer at a time.

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ANNEXURE A

Principles of a Humanising Pedagogy (Draft: NMMU, 8 September 2011)

1. *Students' **humanity** – its existence and expansion – is at the heart of a humanising pedagogy.* All students and all teachers are human beings and equal in their humanity. We are all in the process of becoming. The purposes of education are to extend this humanity through opportunities for creativity, imagination, and interaction with others and the world.

2. *Teaching is a **political act.*** Classroom and school environments as well as political and social contexts are always in play. They impact learning and can restrict or enlarge learning. *Teaching (students and teachers and schools) also has the power to impact these contexts*. Ultimately a humanising pedagogy reaches toward a just and democratic society. It therefore requires interaction among learners and between learners and the world.

3. *Teaching requires listening closely, being **present**, communicating, and paying attention*. Teaching requires work on oneself. Awareness of prejudices and limiting assumptions about what is possible frees up space for learners to be fully present, which frees the teacher as well. Teaching requires the teacher to be fully present, to attend, and to communicate openly, which is easier when there is room for the teacher's real self.

4. *Ubuntu, connectedness, **relationship**, and community – feeling a part of something larger than oneself is central to the purposes of education.* Teaching and learning happen in relationships – with oneself, with others, and with the world. Learning extends beyond the self to include the other, and the natural world, where there is mutual vulnerability and mutual change. Education is for the sake not only of the individual but the community, nation, and world. We are all connected to each other and to the planet. Learning requires hope for a future that includes oneself.

5. *Learning requires teachers and learners to have a **respect** for, and genuine interest in and curiosity about, themselves as learners and the act of learning.* A learner is not knowable except through what they do and create that comes from who they are. Teaching is a process of discovery about learners and their learning. Without genuine interest in who students might be and respect for them as human beings, doors to discovery will be closed.

6. *Learners need to be recognised, **appreciated**, acknowledged, and seen.* As human beings all learners and teachers benefit from appreciation of who they are and the capacities they possess. These must be *seen* in order to be appreciated and acknowledged.

7. ***Space and a safe space** for student voice/student self, the teacher's genuine voice/teacher self must be created.* Without a safe space, the self, like a snail, pulls back into its shell. Without the presence of the student self, little learning will happen. Without the presence of the teacher's self, relationships will not flourish, fear will dominate teaching, and joy will be absent.

8. *Teaching and learning are **courageous** acts of discovery.* They require one to enquire into/move into what feels like someone else's non-sense, relinquishing one's own 'sense', and temporarily suspending one's own identity. They require the courage to create own one's questions, create one's own knowledge, and connect that knowledge to other knowledge. They require self-expression and vulnerability. They require interaction with others and with the world outside the classroom.

9. *Teaching and learning require **health** (physical, mental, emotional, spiritual) and **freedom from fear**.* Basic human needs must be met before learning can flourish.

Leading curriculum change in South African technical and vocational education and training colleges

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ABSTRACT

This article proposes that the technical and vocational education and training (TVET) college curriculum in South Africa needs restructuring in order for it to support more innovative responses to industry requirements and TVET standards. The ultimate aim of this study was to develop a framework for leading curriculum change in the South African TVET college sector, a framework that will be able to support training and capacity-building among TVET college leaders to bring about long-overdue curriculum change. To achieve this aim, curriculum leadership is essential. The multi-phased, mixed-methods research design used in this study involved a questionnaire survey and follow-up group interviews with TVET college staff representative of five TVET colleges in the Western Cape province. Based on these data sources, the study reports on a range of current curriculum challenges in TVET colleges which formed the basis for suggesting a research-based framework to train leaders to take the initiative in TVET curiculum change. The study findings confirm the need for TVET college curriculum reform, which, in turn, requires competent curriculum leadership and leadership development. The research therefore contributes to theory and practice in the field of South African TVET curriculum leadership.

KEYWORDS

technical and vocational education; TVET; curriculum leadership; curriculum change; leadership development

Introduction

The technical and vocational education and training (TVET) college curriculum, which is at the heart of the South African vocational education and training (VET) system, is in serious need of change. First, an enhanced responsiveness to industry needs and requirements is needed and, secondly, an improvement in its related standards. This article discusses a study recently conducted to generate views on the current curriculum challenges being experienced by the TVET colleges. In particular, it focuses on a suggested framework for leading curriculum change in the TVET college sector, a framework that is able to support the training and capacity-building of college leaders.

History of TVET in South Africa

The origin of the institutions formerly known as technical colleges in South Africa dates as far back as the 1800s. The demand for technical education to be made available to young people was a response to the industrial development in the late 1800s (Pittendrigh, 1988:167; Abedian & Standish, 1992).

The policy framework for education and training (ANC, 1994) released by the African National Congress (ANC) led to the promulgation of *White Paper 4: A programme for the transformation of further education and training* in 1998. This policy document provided the core values and vision for establishing the new education and training system (DoE, 1998a:6); from it the immediate focus of the TVET policy development process emerged. The national curriculum framework for the TVET band (DoE, 1998b) suggested that some of the government's key reasons for introducing these new policies had been to resolve the weaknesses and deficiencies of the TVET college curriculum.

The TVET[1] college sector in South Africa was established in 2002 in terms of the Further Education and Training (FET) Act 98 of 1998. The merger process transformed 152 former technical colleges (both state and state-aided) into 50 multi-site TVET colleges across South Africa's nine provinces. The Department of Education (DoE) (1997:1) declared that:

> [T]he curriculum is at the heart of the education and training system. … It is imperative that the curriculum be restructured to reflect the values and principles of our new democratic society.

Recently, during a South African–European Union (SA–EU) social dialogue on mobilising stakeholders in support of the TVET dual system for training artisans in South Africa, the national minister of higher education and training stated:

1 The TVET college sector has faced major policy and governance changes since the onset of democracy in South Africa in 1994. These changes have also resulted in name changes within and of the sector (such as moving from the label Further Education and Training (FET) to TVET). The term 'TVET' will be used consistently throughout this article for the sake of coherence, unless explicitly stated otherwise.

> Although the [National Technical Education] programmes offered at our colleges are still formally set as a required component of an apprenticeship, in reality their content is seriously out of date, and employers who do train are forced to teach 'trade theory' again at their own expense (DHET, 2018).

This brief historic overview illustrates, among other things, the urgent need for TVET college curriculum reform and the need for strong leaders at the TVET college to lead the curriculum change.

International perspectives

For the purposes of this study we chose to explore elements of VET in the United Kingdom, Germany and Australia in order to gain some international perspectives on possible similarities and differences. As in South Africa, governments in the United Kingdom constantly intervene in the institutional arrangements, design, management and funding of VET, but they are reluctant to wrest power from or oblige employers to conform or become involved. Unlike the case in Germany, the South African government is heavily involved in TVET: it plays a central, almost all-embracing role in the vocational system, but it lacks sufficient involvement with business and commerce. German students are identified from a young age – that is, towards the end of their foundational school phase through the dual-education system – to make career choices. This is different from the practice in South Africa, where most students choose their career field of study towards the end of their high school phase. For those students who complete entry-level vocations, articulation between vocational education institutions and their higher education counterparts counterparts is also permitted in Australia and Germany. This is also not the case in South Africa, where the universities are reluctant to accept TVET college graduates (Clarke & Winch, 2007; German Government, 2011; Australian Government, 2011).

Theoretical perspectives

Curriculum in context

In TVET, the concept of 'curriculum' is viewed as a composition of structured theoretical, practical and workplace learning components (DoE, 1998b; Agrawal, 2012; RSA, 2016; Terblanche, 2017). Its purpose is to prepare students for a specific job or a broader occupation by equipping them with industry-relevant knowledge and skills that enhance their employability (Wedekind, 2008; McGrath et al., 2010; Terblanche, 2017). In addition, TVET curriculum content has to be kept relevant to the needs of the labour market through regular research, reviews and industry involvement in and support for curriculum development (Clark & Winch, 2007; Kraak, Paterson & Boka, 2016). An effective TVET curriculum therefore prepares students for low-, intermediate-, medium- and high-level skills that are linked to students' school-level preparedness to meet admission requirements. Furthermore, the TVET curriculum has to allow for seamless articulation between the different levels of an occupation and at the same time make possible access to further studies in a specific occupational field of study (Duncan, 2009; DHET, 2013).

Curriculum development and reform

The literature indicates that TVET curriculum development seems best placed at the meso- and micro-college levels to promote flexibility and industry responsiveness (Van den Akker, 2003; Carl, 2012). At the same time, the national authorities play a central role at the macro-level towards providing educational policy development for TVET provision (Kessels, 1999; Marsh, 2004). The concept of curriculum development – in the context of this study – was explored because it focuses on the macro-level.

Closer to the turn of the present century, McGrath (2005) had already suggested that some VET curricula in South Africa were outdated; moreover, that the infrastructure had become inadequate and dysfunctional, VET provision had become costly, many graduates were failing to obtain formal employment and many programmes appeared to be irrelevant to labour market opportunities (McGrath, 2005). This contrasts with TVET systems worldwide: they are fundamentally shaped and judged by the effectiveness of their articulation with the world of work but also by the extent to which they grant meaningful access to further and higher education (Branson et al., 2015; Kraak et al., 2016). In contrast, the TVET sector in South Africa seems to have failed to link many young adult learners to employment prospects (Gewer, 2010; Kraak et al., 2016).

Also important is that curriculum development for vocational education is regarded as a national competency, which allows minimal room for institutional innovation. This includes curriculum customisation for National Technical Education (NATED) and National Certificate (Vocational) (NCV) programmes (Papier, 2017; RSA, 2013). Earlier, Littledyke (1997:259) had pointed out, for instance, that an over-prescriptive curriculum and an instrumental, directive management style can inhibit the process of curriculum development. In contrast, collaborative, democratic approaches to such development encourage the ownership of change, which makes the effective translation of policy into practice more likely. In line with this, some authors (such as Stumpf et al., 2009:7–9) contend that one of the key problems identified in the post-DHET establishment period is a lack of further learning opportunities at Levels 2 to 5 on the National Qualifications Framework (NQF) for youths who leave school with either a General Education and Training (GET) certificate or a National Senior Certificate (NSC).

Curriculum change

The South African Department of Education (DoE) (2007) views some of the negative features of the earlier technical college dispensation as follows: since 1994, these colleges have tried to overhaul curricula that were outdated and unresponsive to an emerging economy; they have also attempted to find solutions to low throughput rates and a negligible industry take-up of students. Change has, furthermore, become a constant feature of the TVET college sector since 1994 (DoE, 2007), as political and economic changes have had a profound impact on this sector. By passing multiple pieces of legislation, the government implemented some of the required changes, while other measures failed miserably (Gewer, 2001; Allais, 2012; DHET, 2012). Curriculum change

in the TVET college sector has been marked by an accelerated pace of change, but, unfortunately, at least the past two decades have been characterised by impermanence, uncertainty and unpredictability (Moll, Steinberg & Broekmann, 2005; Gewer, 2010).

Competing national and international demands, resulting from rapidly changing environments, suggest that major challenges to educational management and leadership are necessary. What seems important is that educational leaders and managers are needed who keep abreast of emerging trends that enable students to seize the best learning opportunities and future prospects. TVET leaders in South Africa therefore have to be sensitive to both global educational demands and the need for national and institutional transformation that will lead to the full potential of every student being unlocked and the needs of a changing economy and its industries being met (Bottery, 2007; Naidu et al., 2008).

Curriculum leadership

Applying a combination of leadership theories and traits that underpin the capacity of TVET college leaders to bring about curriculum change seems imperative (Middlehurst, Pope & Wray, 1992; Lussier, 2000). Given the South African context, power and influence theory, within a socio-constructivist learning framework, seems particularly relevant to leading curriculum change (Cross, 1999; Terblanche, 2017): from this perspective, the influence exerted by TVET college leaders therefore takes centre stage. Their influence should be based on their ability to understand emerging trends and to guide TVET staff towards a vision based on shared values and on developing and implementing effective curriculum change strategies (Schwella, 2008).

The literature also points out that college leaders do not always have to direct and lead from the front, but could also lead 'from behind', allowing middle managers the opportunity also to lead (Van Wart, 2011; Northouse, 2013). Such expectations also contribute to a belief that leadership is not necessarily confined to one person in an organisation, nor that there is one effective leadership style. Power and influence in leadership are clearly not the same theoretical constructs (Hollander, 1993). In curriculum leadership, association with the concept of influence, which involves persuading rather than exerting pressure, might be preferable (Terblanche, 2017). From a theoretical perspective, the power to change curricula needs to be situated at the institutional level and points to the need for increased authority over curricula to be vested in the TVET colleges themselves (Terblanche, 2017).

Contextual perspectives

Impact of legislation on TVET curriculum reform

From 1995 and until recently, a myriad TVET and related pieces of legislation have appeared. Some of the major changes have included legislation to effect a name change from FET to TVET and the constitutional changes that led to TVET colleges becoming a national competence under the auspices of the Department of Higher Education and Training (DHET).

The new funding norms and standards for programme-based funding heralded a new and welcome era for TVET colleges.

Legislation on TVET colleges, as espoused by the DoE (1998a), indicates that the NCV Level 2 to 4 qualifications were to be put in place to solve the problems of poor-quality programmes, the lack of relevance to the economy and the low technical and cognitive skills of TVET graduates. Unfortunately, such legislation did not meet all the needs of the vocational programmes; nor did it enjoy the universal support of industry, in particular its support for artisan training. In addition, the NCV Level 2 to 4 qualifications currently on offer at TVET colleges are not achieving the curriculum objectives as envisaged either by the Further Education and Training Colleges (FETC) Act 16 of 2006 (DoE, 2006) or by the National Plan for Further Education and Training (DoE, 2008b). The introduction of new programmes, such as the NCV in 2007 and the occupational programmes linked to learnerships and skills programmes, constituted some curriculum changes. The numerous amendments to the Continuous Education and Training (CET) Act 16 of 2016, which resulted from the FETC Amendment Act 3 of 2012 and the FETC Amendment Act 1 of 2013, had the potential to usher in a brand-new era, by the DHET, of unprecedented and drastic change in all areas of the TVET college sector, and, at the same time, to bring a measure of relief to some of the challenges experienced by the TVET colleges.

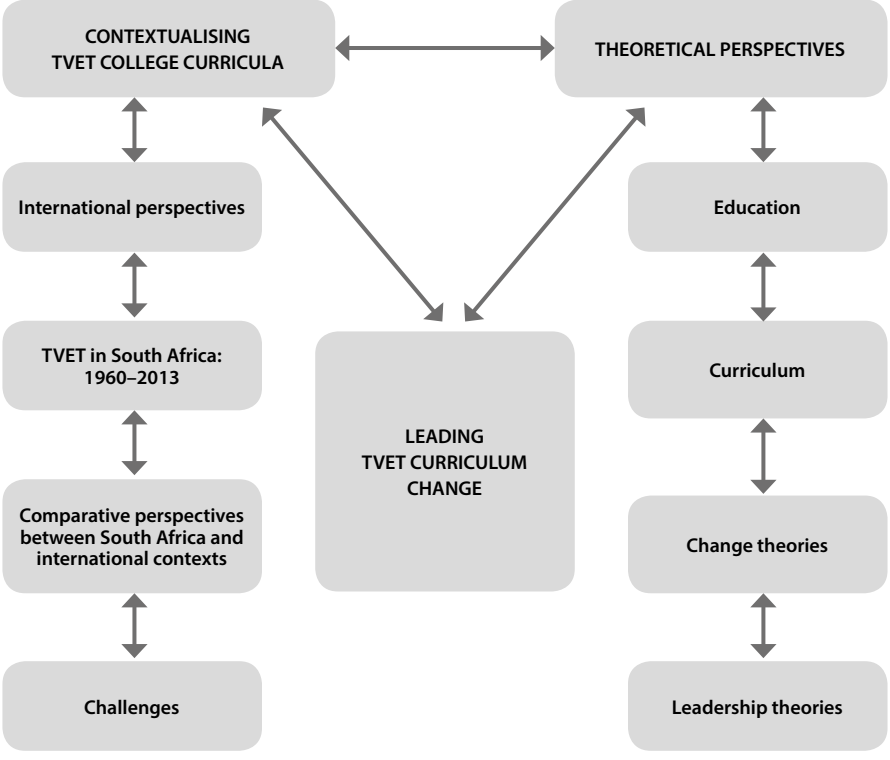
In 2007, the DoE declared that some of the negative features of the then technical colleges included programmes that were outdated and unresponsive to an emerging economy. It also included low throughput rates and negligible industry take-up of students as negative features, since those teaching in TVET colleges had mostly lost contact with industry and had little knowledge of new trends, new technology and the new shape of business in South Africa and beyond. The promulgation of *Government Gazette* No. 31711 (12 December 2008) followed suit: there the department (DoE, 2008a) also announced the phasing out of the national N certificates N4 to N6 and the National N Diploma qualifications offered at TVET colleges (see Report 191 [97/07] and Report 190 [92/04], respectively). Unfortunately, owing to the lack of replacement programmes and as a result of pressure from various stakeholders, the Minister of Higher Education and Training ultimately decided to reverse the decision that was taken between 2006 and 2008 to phase out the national N certificates (N1 to N3 Engineering Studies) and (N4 to N6 Engineering, Business and General Study) qualifications until further notice. Regrettably, almost eight years later, the TVET sector is still awaiting the replacements for the NATED programmes that should be implemented with dedicated, subsidised DHET programme funding.

Meanwhile, the establishment of the Quality Council for Trades and Occupations (QCTO) in 2010 brought new hope for curriculum reform, since its objectives included, among other things, ensuring the quality and industry relevance of occupational qualifications and developing replacement programmes for the outdated TVET curricula. But progress on this front has been slow and the colleges are eagerly awaiting the new suite of industry-relevant QCTO-accredited qualifications.

Furthermore, the TVET curriculum has to allow for articulation between the different levels of an occupation and at the same time allow for access to further studies (Duncan, 2009; DHET, 2013). In order to accommodate students from diverse backgrounds and differing levels of academic preparedness, the required curriculum change has two aspects to it: first, programmes must target the needs of industry, which would lead to improved student employability; secondly, programmes should lead to improved articulation with higher education institutions (Terblanche, 2017). The White Paper for post-school education and training (PSET) is the latest master plan of envisaged changes by the DHET that predicts a total overhaul of the entire post-school system of quality improvement in all areas of delivery. The upliftment of the TVET college sector is pivotal to it being given the capacity to play the role earmarked for it in achieving the goals and objectives and promoting the skills and economic drivers as set out in the White Paper (DHET, 2013).

The literature review of this study concluded by suggesting a preliminary conceptual framework (see Figure 1) as it emerged from considering a number of relevant theoretical and contextual factors pointed to in this article. Figure 1 depicts and underpins our initial theoretical understanding of the leadership needed for curriculum change in TVET colleges.

Figure 1: A preliminary conceptual framework for leading curriculum change



Source: Terblanche, 2017

Figure 1 emphasises the need for understanding how curriculum leadership might be influenced at the level of TVET colleges through a range of theoretical perspectives on key concepts such as education, curriculum change, leadership styles and trait theories that seem vital to any type of leadership framework in the 21st-century TVET environment.

With these theoretical and contextual perspectives intact, it seems a good juncture at which to report on the empirical investigation that drew on our conceptual understanding of the phenomenon of curriculum leadership – especially within the South African TVET college environment.

Methodology

This study was based on the Framework for an Integrated Methodology (or FraIM) as the most appropriate design for the purpose of the study. Through this design, numeric and non-numeric data could be integrated holistically by providing equal status of importance to all aspects of the research methodology (Plowright, 2011). Through applying purposive sampling, we were able to classify the respondents according to their job titles: they were academic managers such as deputy principals, curriculum planners, heads of department, programme managers, senior lecturers and lecturers.

Non-experimental research in the form of a survey design within a pragmatic knowledge paradigm was first used to analyse the trends, attitudes and beliefs of college employees and leaders. An online questionnaire survey was conducted in which 116 (n = 116) respondents provided quantitative responses about their perceived trends, attitudes, beliefs, views, knowledge and experiences regarding TVET college curriculum leadership and change. Numerical data from the online questionnaire were analysed using descriptive statistics and categorical variables with the support of the Statistical Service at Stellenbosch University. The differences in opinions, perceptions and experiences of the questionnaire respondents were graphically displayed for the closed-question section of the questionnaire, whereas a narrative format was used to describe the findings of the open-ended question section. Descriptive data were used to report on the findings from the closed-question section, and, thereafter, possible statistical relationships were drawn between the biographical characteristics of the respondents and three questions by using Pearson values.

Semi-structured focus-group interviews involved a total of 90 respondents (n = 90). We purposely selected the interviewees from the five participating TVET colleges and the regional DHET office located in the Western Cape. Based on the trends that emerged from the questionnaire survey, focus-group interviews were conducted with 14 TVET interest groups. The focus-group interviews were conducted to strengthen the findings of the survey and to identify any similar or different views from those of the respondents. The semi-structured focus-group interviews were recorded, transcribed and analysed using qualitative levels and categories. Finally, the study findings from the previous two phases were insightfully integrated into a proposed framework for leading curriculum change intended to lead training and capacity-building in the TVET college sector.

Findings

Since the questionnaire survey and focus-group interview questions were based on the initial theoretical conceptual framework (see Figure 1), the analysis of general findings supports the framework in many ways.

The findings of the study indicate that TVET college curriculum reform is necessary. Such reform has the potential to contribute in various ways to improve the employability, productivity and success rates of TVET college graduates. The findings emphasise the crucial need for change in management strategies to prepare for current and future TVET curriculum challenges. What also emerged is the need for more substantial industry involvement in the TVET curriculum review process to enhance responsiveness to industry needs and requirements. Furthermore, the findings on leadership capacity in the TVET institutions represented in this study indicate that the TVET college sector needs leadership programmes to help leaders to bring about curriculum change. In addition, the findings indicate the various cognitive and social competencies that curriculum leaders require if they are to be effective in leading curriculum change and meeting its accompanying challenges.

Different views emerged during the empirical part of the study regarding the concepts of vocational, occupational and academic types of education. The respondents indicated a need for specific knowledge and skills required to develop a responsive vocational and occupational curriculum: research on and knowledge of the academic abilities and preparedness of students; the social background of students; industry knowledge and experience; curriculum writing skills; and advanced cognitive and analytical skills. In particular, the students' social background and prior academic knowledge could be a priority when considering the development of new curricula if an impact is to be made on the success rates of TVET college students.

Another important finding points to the ongoing professional development of college staff, which seems crucial if TVET staff are to gain the relevant knowledge and skills required to plan and deliver a responsive vocational and occupational curriculum. Broadening student participation and access was also considered to be crucial during the inception stages of curriculum development.

Furthermore, industry knowledge and experience were pointed out as being critical for curriculum developers, who believe that, once the curriculum becomes industry-aligned, the employability of students may improve and forging industry partnerships with TVET colleges might become more likely. Finally, the revision of the type and amount of funding the DHET awards to colleges seems critical to fulfilling the mandate of expanding student numbers, meeting the need for adequate resources, and delivering the quality of teaching needed to develop South Africa's skills workforce. Based on the results of the study, and drawing on the success of TVET in Germany, a parallel-stream or two-stream curriculum is suggested to better address current and future TVET training needs.

The following section highlights some of the respondents' verbatim quotations from the closed-question section of the questionnaire survey and the group interviews. These are complemented by statistical data analysis derived from the closed-question section of the survey regarding curriculum relevance, student employability and curriculum leadership issues.

Curriculum relevance

The survey results (n = 116) indicated that a large majority of the respondents (88%) agree or strongly agree that the current curriculum of Report 191 (N4–N6) Business and General Study Programmes needs revision (see Table 1).

TABLE 1: Survey responses to the question: Does the curriculum of Report 191 Business and General Studies (N4–N6) need revision? (n = 116)

	Number	Percentage
Disagree	14	12
Agree	58	48
Strongly agree	46	40

Similarly, when the respondents were probed for their views on the curriculum challenges faced by TVET colleges, in particular on the NCV programmes (L2–L4), Report 191 Engineering Studies (N1–N3) and Occupational (L1–L5) programmes, the following results emerged from interviews and open-ended questionnaire items:

- The perceived curriculum challenges linked to the NCV programmes seem to be multiple. As one respondent put it:

  … specific subject content levels which are pitched too high for the education entry level of the students as well as the pass requirement of subjects which are also too high.

  Another respondent emphasised:

  … curriculum is not responsive to industry and market needs and [is] tainted with a poor public image.

- Several challenges with regard to the Report 191 (N1–N3) Engineering programmes were also reported. These challenges rendered responses such as these:

  … [the] short duration of twelve weeks, the lack of practical components and technology, outdated curriculum content, design, equipment and textbooks.

Another respondent stated that the curriculum is:

not aligned to changes in technology, new equipment and industry.

The boxes below reflect interview responses related to issues concerning the Engineering Studies (N1–N3) curriculum:

> '…Credibility of qualifications – industry [doesn't] acknowledge. Training for the unemployed. Machinery and equipment (some from Noah's Ark) are outdated and we are lagging behind industry. [We] only provide basic training and not what industry demands due to limited machines and equipment. The 1969 textbook for trade testing is still the same….' (FG2M1*)

**Key: Focus Group 2, Male respondent 1*

The responses generated regarding challenges with the Report 191 (N4–N6) Business and General Study programmes were analogous with most of the preceding findings. These challenges varied from *outdated curriculum and design and textbooks* to *[l]ack of practical applications to current work scenarios.* Students don't find jobs, as yet another respondent remarked: *No demand – students don't get work with their qualifications.*

As for the occupational programmes, one respondent stated that *some of the unit standards are outdated.* Additional challenges cited by another respondent were: *'T]heory-based learnerships; too much paperwork and inadequate actual learning time,* while *[l]ack of infrastructure for practicals and partnerships with industry for work placement',* was added by another.

The box below reflects particular curriculum issues such as trust, content, motives and entry levels:

> 'People do not trust the curriculum, which contains too little content knowledge. [L] ack of knowledge content of occupational programmes. (FG4M1*)

**Key: Focus Group 4, Male respondent 1*

Student employability and curriculum leadership

Industry support and involvement in the TVET college sector seem critical to curriculum renewal, enhancing student employability and curbing the lack of industry knowledge and experience of college leaders. To illustrate:

A majority (92%) of survey respondents (n = 116) indicated that student employability could be enhanced through curriculum change (see Table 2).

TABLE 2: Survey responses to the statement: Student employment opportunities will be increased by curriculum change (*n* = 116)

	Number	Percentage
Disagree	10	9
Agree	60	52
Strongly agree	46	40

When asked about the need for leadership to bring about and sustain curriculum change, a majority (76%) of respondents (*n* = 116) disagreed (see Table 3) with the statement that effective leadership training programmes currently exist that could enable and give TVET college leaders the capacity to lead curriculum change.

TABLE 3: Survey responses to the statement: Effective programmes are available to capacitate TVET college leaders to lead curriculum change. (*n* = 116)

	Number	Percentage
Strongly disagree	17	15
Disagree	71	61
Agree	25	22
Strongly agree	3	3

The survey results were therefore clear on the need for curriculum leadership and giving TVET college leaders the leadership skills to confront current and future curriculum challenges, including curriculum design and development.

Current and future curriculum leadership capacity-training needs

To provide a basis for curriculum leadership development, the empirical part of the study also compared possible current and future curriculum leadership capacity-training needs. However, as indicated by Table 4, the needs indicated by respondents to an open-survey question differed quite substantially regarding current and future training.

Table 4 indicates a range of skills development initiatives to build leadership capacity in TVET colleges. Current needs include effective communication and conflict-handling skills, the use of various communication channels and systems through the use of technology, strategic planning and curriculum management skills, and knowledge about quality management and quality assurance systems that could enhance the quality of teaching and learning. Research skills also seem important for making sound strategic decisions based on adequate information.

TABLE 4: Comparison between current and future leadership capacity-training needs as indicated by respondents

Current leadership capacity-training needs	Future leadership capacity-training needs
The need for vision	The need for insight into global and international future curricula
The need for effective communication	The need for futuristic leaders
The need for listening skills	The need for improved leadership qualifications
The need for assertiveness	The need for a workable organisational structure with capable leaders
The need for conflict management	The need for visionary leaders with foresight to develop programmes that will meet future needs
The need for strategic management	The need for research and development skills
The need for curriculum management	The need to understand the vocational curriculum
The need for people skills	The need for an ability to set up collaborative structures between college and industry to develop relevant curriculum
The need for emotional intelligence	The need to be able to use latest technology
The need for research into industry training needs	The need for networks and partnerships
The need for mutually beneficial partnerships with local industry and international organisations	The need for economic literacy
The need for skilled, dynamic, strong, consistent and decisive leadership	The need for quality management
The need for strong, ethical leaders	The need to be able to think out of the box
The need for understanding curriculum and labour needs	The need to make provision for needs that do not exist yet

Source: Terblanche, 2017

As for projected future development of curriculum leadership, needs include the provision of programmes that will meet future employment needs, economic literacy, research and development skills, as well as training in the use of the latest technology. Developing future skills and becoming economically literate are seen as important to helping college leaders to plan for the future and be ready for future challenges.

Curriculum challenges and leadership capacity-training needs

When the study participants were asked about how they perceive current TVET curriculum challenges as they relate to curriculum leadership capacity-building, more interesting perspectives emerged. Table 5 shows these recorded relations and options.

TABLE 5: Current curriculum challenges as related to proposed leadership capacity-training needs

Current curriculum leadership challenges	Proposed current leadership capacity-training needs
Lack of curriculum knowledge	Need for a broad curriculum knowledge and understanding
Lack of industry knowledge and experience	Need for industry knowledge and experience
Lack of strategic thinking	Need for planning, organising, monitoring and follow-up
Lack of urgency to change, since leaders are in a comfort zone	Need for quality assurance
Leaders' lack of will to change	Need for business acumen
Lack of standardised planning	Need for creating a sense of urgency
Lack of relevant stakeholders for writing teams	Need for change management
Lack of a new mindset change	Need for charismatic type of leadership
The need for funding that drives change and programme offerings	Need for proactivity
Lack of industry involvement in curriculum change and training	Need for pragmatism
Lack of vision	Need for visionary skills
Lack of statistical reporting	Need for adaptability
Lack of stability due to constant change	Need for people skills
Lack of resources	Need for a consultative leadership approach
	Need for a servant-leadership approach
	Need for a situational leadership approach

Source: Terblanche, 2017

Table 5 highlights numerous current challenges such as a lack of resources, vision, curriculum knowledge, strategic thinking, and industry knowledge and experience. The DHET (2012) stated earlier that college principals require a suite of comprehensive leadership competencies such as strategic capability and leadership, financial management, people management and empowerment, client orientation and customer focus, change management, and honesty and integrity to lead a college effectively. Most of these requirements are reflected by the capacity development needs proposed in Table 4.

The findings on leadership capacity were largely supported by the non-numerical data generated from the group interviews with TVET college staff. To illustrate:

> 'Leadership should operate in a business sense. [There should be] a sense of urgency to address issues, service delivery, respect, integrity, [and] trust [in] staff if [they] propose solutions. Change management programmes are required, emotional intelligence, etc. to lead occupational programmes.' (FG3F1*)

**Key: Focus Group 3, Female respondent 1*

The curriculum leadership challenges and needs as pointed out by the findings from this study clearly support previous research by Gewer (2010), who has indicated that insufficient levels of knowledge about leadership among college leaders and management are detrimental to curriculum renewal.

Conclusions and implications

Conclusions

From our investigation it became clear that building the capacity of curriculum leadership in the TVET college sector appears to be an urgent matter. In addition, various cognitive and social competencies are needed to lead curriculum change and deal with its accompanying challenges. These competencies include acquiring industry knowledge and obtaining exposure to industry, which seems crucial for TVET college leaders if curriculum responsiveness to industry needs is to be enhanced.

Our findings have also shown that no coherent framework for developing curriculum leadership in TVET colleges currently exists. For a curriculum leadership development framework to materialise, various policy reviews or new policies regarding curriculum leadership are likely to be required. In addition, TVET leadership might be required to phase out outdated curricula and enhance curriculum responsiveness to industry.

Based on these conclusions, a number of implications can be pointed to which relate to curriculum leadership theory and the practice of curriculum leadership.

Possible implications related to curriculum leadership theory

Power and influence theory (Hollander, 1993) has been shown in our study as an applicable theory that could potentially help TVET college leaders to influence changes in seemingly outdated curricula. Curriculum leadership is ultimately underpinned by a constructivist theory of learning by which knowledge is actively constructed from within and by leaders as lifelong learners. Curriculum leadership in educational contexts is therefore mainly associated with influencing the direction of learning and studies (Middlehurst, 1993). In practice, this means that the leadership development framework we suggest may comprise four pertinent modules which are derived from the elements as they have emerged from the empirical part of our study.

For TVET curriculum change to happen, at least at a theoretical level, it seems that a combination of leadership theories and styles – as has emerged from the literature and findings in this study – has to be taken into consideration. Most prominent is transformational leadership, which is seen as a power and influence theory according to which the leader acts in mutual ways with the followers, appeals to their higher needs, and inspires and motivates followers to move towards a particular purpose (Van Wart, 2011).

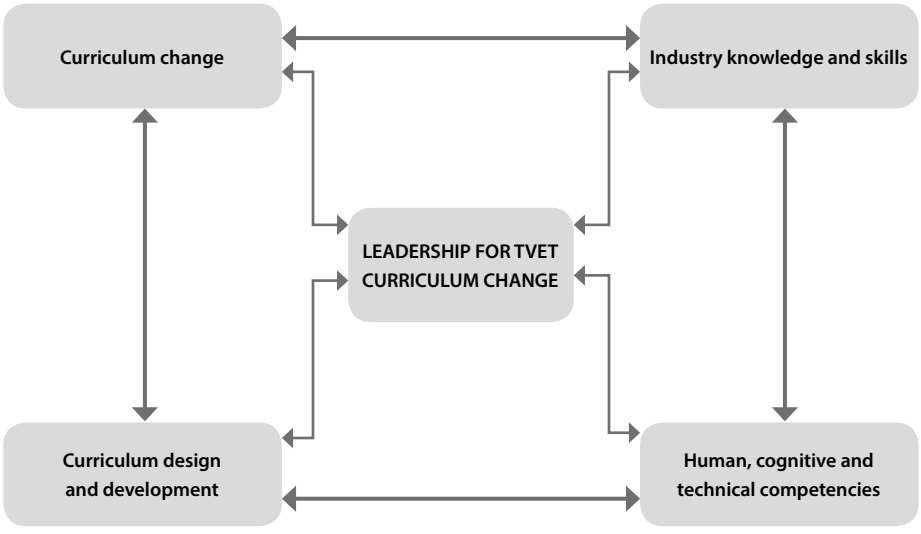
As has been pointed out by our study, shared or distributed leadership, in addition to transformational and innovative leadership, is central to supporting the magnitude of change envisaged to bring about TVET curriculum change. This is because shared or distributed leadership allows different people to lead at different times (Yukl, 2010; Edwards, 2011).

Practical implications: A suggested framework for curriculum leadership

The main purpose of the present study was to develop a framework for leading curriculum change and promoting leadership capacity-building for TVET college leaders. To develop a framework for leading curriculum change it seemed important to gain a better understanding of the core concepts that informed the elements of a proposed framework (see Figure 2).

The suggested leadership framework is based on four modules, which are derived from the elements that have emerged from the empirical investigation (see Tables 4 and 5). These elements were grouped under four suggested headings, namely, (1) Leadership and curriculum change, (2) Human, cognitive and technical competencies, (3) Industry knowledge and skills, and (4) Curriculum design and development. The two-way arrows indicate articulation, integration and flexibility between the four sections of the framework, which might become learning modules (see Figure 2).

Figure 2: A simplified framework for facilitating curriculum leadership training



Source: Terblanche, 2017

The framework supports a socio-constructivist approach to learning and acknowledges that students' needs are central to the learning component. The modules and elements are based on the social context of the respondents which emerged from the empirical data. Accordingly, the further development of this framework will remain contextually shaped by the experiences and knowledge of those related to the TVET college sector. The emphasis is on the key elements that contribute to the composition of the curriculum leadership framework that could contribute to equipping college leaders to bring about curriculum change in the South African TVET college sector (Terblanche, 2017:240–244).

The framework differs from our initial conceptual understanding (see Figure 1) in that it represents a more coherent view of how curriculum change could be led. In the first framework, the two main strains involved theoretical and contextual perspectives; in the present framework, the focus is primarily on incorporating the conceptual understanding into a more practical orientation. This adaptation helps us to focus on what could be potentially helpful in developing leaders in need of capacity-building and training to equip them for leading curriculum change (Terblanche, 2017).

Details of the key elements of the four suggested 'modules' are given in Table 6.

TABLE 6: Possible 'modules' and elements of a framework for curriculum leadership training

Modules	Elements
Module 1: Leadership and curriculum change	• Curriculum or academic leadership • Transformational leadership style • Innovative leadership • Shared or distribution leadership style • Participative leadership style • Policy development and implementation • TVET college knowledge and experience • Curriculum change • Change management strategies • Strategic planning
Module 2: Human, cognitive and technical competencies	**Human skills:** • Integrity, trustworthiness, passion, energy, honesty • Committed, empathetic, ethical, accessible, flexible • Sincere • Interpersonal/people skills • Motivational **Cognitive skills:** • Critical, analytical and strategic thinking • Creativity and innovative thinking • Futuristic leadership • Influential and persuasive • Negotiation and risk-taking • Being a change agent • Decision-making and conflict management **Technical management skills:** • Strategic planning, project management • Curriculum management • Quality management • Communication, and oral and written presentation
Module 3: Industry knowledge and skills	• Industry knowledge, exposure and experience • Labour market needs for current and future jobs • Industry collaboration, linkages and partnership establishment and maintenance • Global industry knowledge and trends in the labour market • Macroeconomics and microeconomicss
Module 4: Curriculum design and development	• Curriculum writing and language skills • Curriculum design and development skills • General knowledge of TVET college programmes • Sensitivity towards the distinction between vocational and occupational education • Specific subject knowledge and expertise • Flexible modes of delivery and technology • Knowledge of international trends specific to the learning area • Research skills

Source: Terblanche, 2017

Module 1 (Leadership and Curriculum Change) is suggested to equip college leaders with the necessary knowledge and skills through applying a combination of leadership styles best suited to influencing curriculum change in the TVET college sector.

Module 2 (Human, Cognitive and Technical Competencies) has the potential to empower leaders with human, cognitive and technical management skills. A combination of these traits should be applied, since one trait alone cannot ensure effective leadership to bring about curriculum change.

Module 3 (Industry Knowledge and Skills) is able to provide leaders with a wide range of industry-related information about local, provincial, national and international labour market needs and trends. It is therefore important that a compulsory industry or workplace component form a critical part of the curriculum design and implementation plan.

Module 4 (Curriculum Design and Development) should equip leaders with the knowledge and skills linked to basic elements of curriculum design and writing processes. This element could provide extensive capacity-building to develop the parallel curriculum that will either lead directly to the workplace or articulate to higher education programmes. Finally, basic research skills will form an integral part of the training, because important curriculum-related decisions will be based on sound research.

Implications for future research

Further studies at TVET colleges in the other eight provinces of South Africa should be considered. This could add value to the verification, credibility and expansion of modules and key elements, as well as to the need for a generally accepted framework for facilitating curriculum change.

Conclusion

The aim of this study was to propose and develop a curriculum leadership framework for curriculum change in the TVET college sector. The study has contributed towards increasing a conceptual understanding of the key factors and leadership features needed for TVET college leaders who take the lead in curriculum change. In addition, the study reported on the current and future challenges facing curriculum development in a TVET context and also dealt partly with possible strategies needed to build capacity among TVET college leaders to enable them to deal with both current and future curriculum challenges.

The study also highlighted certain prominent leadership features considered necessary for TVET college leaders to effectively lead curriculum change sustainably in TVET colleges. We hope that this study will contribute in some modest way to the body of research into higher and further education in South Africa, whose aim is to improve the teaching–learning environment at institutions of higher education.

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Work-integrated learning for TVET lecturers: Articulating industry and college practices

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ABSTRACT

South Africa's policy frameworks for technical and vocational education and training (TVET) and adult and continuing education and training (ACET) lecturers require that the work-integrated learning (WIL) element of programmes include WIL in appropriate 'industry settings' to ensure that TVET lecturers develop expertise in both teaching their subjects and preparing their students for the demands of the workplace. Whereas the country's education faculties have a strongly developed practice of school-based WIL, none currently offers a formal programme that includes WIL in industry. International literature on teacher placement in industry thus largely concerns the in-service placement of practising educators to develop and update their industry knowledge and experience. In South Africa, some institutions have embarked on projects that have developed knowledge of industry WIL for TVET college lecturers, one of these being the SSACI-EDTP SETA WIL for Lecturers Project, through which more than 400 college lecturers have completed a work placement, conducted between 2014 and 2017. It provides a significant amount of information on the possible nature and implementation of the industry-based WIL component of the lecturer qualifications currently being developed. Using the Shulman and Shulman (2004) framework on teacher learning, this article analyses the project. It seeks to deepen the understanding of the nature of lecturer learning through WIL and also to contribute to the national, African and broader international discourse on the placement in industry of vocational educators and articulation between the worlds of work and education.

KEYWORDS

TVET; work-integrated learning; lecturer qualifications; teacher placement in industry; communities of practice

Introduction

The purpose of vocational education is primarily to prepare young people for work, and this places unique demands on lecturers in vocational programmes. They need to be subject experts, they need to have current knowledge and experience of their subject's application in relevant industries, and they need teaching expertise. Ultimately, they are expected to bridge the gap between education and work in the teaching of their subject. The need to have industry knowledge and expertise is a primary distinguishing feature between school teachers and TVET college lecturers and this feature influences the nature of the training they need in order to teach effectively in a college context.

Between 2011 and 2014, the South African Department of Higher Education and Training (DHET), the state department responsible for teacher education polices, promulgated three policy frameworks: one (RSA, 2011) was promulgated for school teachers, another (RSA, 2013) for TVET colleges and a third (RSA, 2014b) for the newly developed community education and training (CET) colleges. In all three policy frameworks, work-integrated learning (WIL) is an element that serves as an underlying approach to programme construction; it also describes the workplace-based element of all programmes. The WIL element in the policy framework for school teachers involves spending time at a school, colloquially known as teaching practice. The policy frameworks for TVET and CET colleges, however, require both teaching practice and WIL experience at a workplace in which a lecturer's specialisation is practised. Trainee catering lecturers, for example, are expected to spend time in the catering industry, motor mechanics in the motor industry and hair-care lecturers in a hair salon.

The aim of what has become known as industry-based WIL for lecturers, according to international and South African research, is to improve vocational educators' teaching skills by developing their industry knowledge and experience (Van der Bijl & Taylor, 2016). Research on the placement in industry of vocational educators tends either to provide arguments in favour of industry placements or is framed within models based on Lave and Wenger's (1991) communities of practice models. The shortcoming of the research base on reasons for industry-based WIL and on community of practice models is that it is limited to one dimension of learning: learning either at an individual level or within a community of practice.

This article sets out to develop an understanding of the possible nature, scope and implementation of the industry WIL component of the professional qualifications of the new TVET college lecturer. It provides an analysis of lecturer learning through industry WIL using the model developed by Shulman and Shulman (2004). This highly cited model provides a useful framework for analysing the nature of the education practitioner learning at an individual and a community of practice level; it also provides insights into the policy and resource contributions needed to sustain this learning. The data for the analysis in this article are drawn from the formative and summative evaluations of the ETDP SETA-SSACI WIL for Lecturers Project

(Smith, 2016; 2017),[1] portfolios submitted by participating lecturers and lecturer feedback at SSACI training sessions.

Literature review

Policy demands for industry-based practice for TVET lecturers in South Africa

Following the first fully democratic election in 1994, the government was faced not only with the challenge of removing discriminatory practices encapsulated in the country's legislation, but also with creating a single legislative framework out of an assortment of frameworks developed by the apartheid state. In 2000, the Norms and Standards for Educators (RSA, 2000) was promulgated as the framework for teacher education qualifications. The framework not only incorporated the differing requirements of education departments that had been incorporated into the single Department of Education, but also developed a single series of qualification names, replacing the diverse naming conventions in use at the time.

From within the college sector, a motivation developed for a separate framework for college lecturers, which resulted in the circulation of the Draft National Policy Framework for Lecturer Qualifications and Development in Further Education and Training Colleges in South Africa (RSA, 2008a). By 2008, technical colleges had undergone a process in which 152 technical colleges, dispersed across more than 250 campuses, were merged into 50 further education and training (FET) colleges (RSA, 2008a:5).

The promulgation of the draft framework for college lecturers was, however, withheld pending finalisation of the national qualifications framework and, later, the splitting of the Department of Education into two departments: the Department of Basic Education (DBE) and the Department of Higher Education and Training (DHET). By the time the framework for college lecturers was promulgated in 2013 (RSA, 2013), FET colleges had been renamed technical and vocational education and training (TVET) colleges and another form of higher education, namely community education and training (CET) colleges, had been established. Acceptance of the need for different policy frameworks for college lecturers and school teachers resulted in the replacement of the norms and standards for educators of 2000 with three qualifications frameworks, namely:

- The policy on the minimum requirements for teacher education qualifications, promulgated in 2011.
- The policy on professional qualifications for lecturers in technical and vocational education and training colleges, promulgated in 2013.
- The policy on minimum requirements for programmes leading to qualifications for educators and lecturers in adult and community education and training colleges, promulgated in 2014.

1 The project is a collaboration between the Education and Training Development Practices Sector Education and Training Authority (ETDP SETA) and the Swiss-South African Cooperation Initiative (SSACI).

WIL in all three policy frameworks (RSA, 2011:10; 2013:10; 2014b:11–12) is regarded as one of the forms of learning and is equated to practical learning. In addition to regarding WIL as one of the forms of learning that underpins teacher education qualifications, the policy frameworks (RSA, 2011:15; 2013:19; 2014b:13–14) regard WIL as the 'workplace-based component' of the qualifications. The policy framework for school teachers regards WIL as the 'school experience component' of a teacher education programme. The policy framework for TVET lecturers (RSA, 2013:19), in contrast, notes:

> The learning-in-practice workplace-based component of WIL for TVET lecturer qualifications takes place in two types of settings: in teaching settings (eg classrooms/ lecture rooms/laboratories/college workshops) and in industry-based settings (eg factory, work sites, offices, etc.).

The policy framework for CET lecturers (RSA, 2014b:13–14) echoes that of the TVET policy, indicating that WIL 'can take place in two types of settings'. 'It is the responsibility of the institution offering the qualification', the TVET policy (RSA, 2013:19) continues:

> [T]o arrange WIL opportunities for students, in line with the requirements of the qualification as described in this policy. The workplace-based component of WIL must be structured, supervised and integrated into the learning programme, spread across the learning programme and formally assessed.

Other than requiring that, providers of teacher education, all university schools and faculties of education arrange for supervised, structured learning opportunities. The policy is silent on the nature of WIL in the qualifications. While education faculties have a strongly developed practice of school-based WIL, no faculty has, to date, offered a formal programme including WIL that takes place in what the TVET policy framework calls 'industry-based settings'.

Identifying the nature and scope of WIL within industry settings is crucial for education faculties because they are the official providers of teacher education qualifications for public institutions of education and training.

Literature on how TVET educators learn from industry-based practice

WIL is one of a number of terms to describe an education experience largely based on experiential learning theory devised by Kolb (1984, cited in Taylor, 2013). Kolb's experiential learning cycle, attributed to Dewey's work, involves a cycle of learning which includes experience, followed by reflection on it, the making of generalisations and applying learning back into practice. WIL has been applied in a wide variety of vocationally orientated education settings, including engineering, business and teacher education. Internationally, vocational education and training (VET) teachers and trainers are expected to have current industry knowledge and experience, but industry WIL is usually not a component of initial VET teacher training (RSA, 2008b; Papier, 2008). Instead, prior industry experience is a qualification entry

requirement and qualified VET educators are expected to remain abreast of current industry trends in various ways, including industry placement, as part of their continuing professional development (Clayton, 2012; Ireland, Golden & Speilhofer, 2002). The international literature thus largely concerns the in-service placement of school and VET teachers in industry, which has been adopted in various ways in different countries.

Around the turn of the century, the first teacher professional development placements (PDP), primarily for 'science and technology teachers and teachers of vocational courses', were made in the United Kingdom. Programmes such as PDPs date back to the promulgation of the *Learning to succeed* White Paper in 1999 (Ireland et al., 2002:2–3) and are associated with the development of real-life competencies perceived to be required for teaching vocational content. In Australia, the teacher industry placement (TIP) scheme has been in existence for quite some time and, as a result, has been the subject of analysis (see Bergami, Schüller & Cheok, 2009:53; Schüller & Bergami, 2008:201; Bergami, Schüller & Vojtko, 2010:110–112; Schüller & Bergami, 2011:136–137).

The model produced from the analyses by Bergami and his associates provides an indication of the nature and role of industry-based WIL in the development of TVET lecturer competencies, and, as a result, the articulation between industry-based learning and classroom practice. Bergami's model emanates from work within the Australian VET system's TIPS scheme and is framed within the communities of practice model conceived by Lave and Wenger (1991, cited in Schüller & Bergami, 2011:135). Citing Lave and Wenger (1991), Schüller and Bergami (2006:18) describe a community of practice 'as a group of individuals who share a common interest in their activities within a community'. Different levels of participation are possible in a community of practice, but for it to be successful, 'its membership must have a degree of commitment and behave in a mutually respectful and trusting manner' (Mittendorf et al., 2006 cited in Schüller & Bergami, 2006:18).

Bergami's model (Schüller & Bergami, 2011:134) argues that a VET teacher's industry placement involves the development of industry-based skills, which is an integral part of any industry-based WIL experience. In addition to learning industry-based skills, Bergami argues, VET teachers develop theory, take the theory back to the classroom and lay the foundations for the further implementation of theory into practice.

Industry placements, Bergami and Schüller (2011:135–136) argue, result in the formation of relationships among the 'key stakeholders', which include 'the teacher, the educational institution, the host industry and students'. One of the social derivatives of this form of industry placement is the development of communities of practice and networks, which has positive results for all involved.

Shulman and Shulman (2004) argue that the development of communities of practice is but one of three levels of learning that new teachers experience. According to Shulman and Shulman (2004:268), learning occurs at a number of levels, namely at individual, community and policy implementation levels.

For individual analysis and learning to occur, according to Shulman and Schulman (2004: 260–261), a teacher must be 'ready to teach … [and have] developed a vision of the particular kind of student, learning and understanding' of the process of learning in disciplinary and interdisciplinary terms and of a classroom in which a range of activities occurs. This is learning at a level of individual activity, reflection and analysis. Learning at this level, according to Shulman and Shulman (2004:260–264), requires a person who is ready to teach, willing and motivated, able to understand what must be taught and how to teach it, able to engage in appropriate performance and able to learn from experience through reflection.

Communities of practice, Shulman and Schulman (2004:265–267) reiterate, share visions, commitments, knowledge and sets of rituals and practice. For novice teachers this is learning at a community level. Shulman and Shulman (2004:265) note, with reference to school-based learning, that a community emanates from the existence of 'one or more groups'. They add:

> Accomplished learning and teaching depend on the provision of adequate resources such as mentoring staff development, curriculum and associated materials, instruments and models of assessment, additional personnel, computers, physical space for groupings and rotations, etc. (Shulman & Shulman, 2004:267).

This, they argue, is the provision of metaphoric *capital*, which is learning at a level of policy implementation. The forms of capital identified by Shulman and Shulman (2004:267–268) are curricular, cultural or moral, technical and venture capital.

The articulation between industry-based learning and its implementation in practice is clearly, therefore, not merely an articulation between communities of practice, as described by the Bergami-based cases. Indeed, articulation occurs not only between communities, but also at the level of individual learning ability, motivation and understanding, and at the level of policy implementation and resource allocation.

Novice and trainee TVET lecturers undoubtedly need to be ready, motivated and able to teach. The policy discussed so far (RSA, 2013; 2014b) and the argument surrounding Bergami's model clearly express the view that the ability, readiness and motivation of novice and trainee lecturers can be enhanced through industry-based WIL placements. However, industry placements could complicate such readiness, ability and motivation: first, whereas school teachers and college lecturers on education-based WIL exercises may encounter relatively homogenous communities of practice, TVET students are likely to be confronted with a divergent variety of types of community of practice. An education student with a hospitality specialisation assigned to the kitchen of a fast-food outlet, for instance, is likely to encounter a type of community of practice entirely different from one assigned to the kitchen of a five-star hotel. Each community is therefore likely to influence education students differently. Secondly, exposure to the resources and activity systems in use in industry compared with exposure to those within TVET colleges could influence lecturers' willingness, motivation and teaching readiness (Van der Bijl & Taylor, 2016:106).

The work by Shulman and Shulman (2004) is widely cited in research related to teacher identity and teacher learning. Whereas most articles relate to First World school-level education, some, such as Westbrook et al. (2013), deal with pedagogy, curriculum, teaching practices and teacher education in developing countries, and Evans (2013) provides an analysis of research evidence on assessment feedback in higher education. While work based on models related to communities of practice clearly illustrates the nature of industry-based WIL for lecturers, Shulman and Shulman (2004) provide a framework within which industry-based learning and knowledge articulation of teachers can be identified.

While the provision of industry-based WIL is a new feature of the initial professional qualifications for South African TVET and ACET lecturers, there is already some practice of lecturers employed by TVET colleges visiting industry for workplace exposure. An analysis of this practice provides useful information on how industry placements for lecturers can support the articulation between industry and college practice. It also sheds light on the possible nature and content of this element in the new professional qualifications being developed. Institutions involved in this work include SSACI, the ETDP SETA and the Cape Peninsula University of Technology (CPUT) research chair for WIL and RLP.

Methodology

This article provides an analysis of the WIL for Lecturers Project, which was funded by the ETDP SETA and implemented by SSACI between 2014 and 2016 at 28 colleges nationwide. Through the project, more than 400 lecturers, teaching a wide range of college programmes, completed SSACI's in-service WIL programme. The participants had to complete five days of industry exposure and to incorporate their workplace learning into their teaching. They also submitted portfolios on their industry learning and their integration of it into their classroom practice.

The data used in the discussion that follows are primarily drawn from the summative evaluation of the project (Smith, 2017) and the lecturer portfolios. The discussion also includes an analysis of the findings of the formative evaluation (Smith, 2016) and feedback provided by lecturers at SSACI training sessions.

The summative evaluation of the project included two online questionnaires, one for college coordinators (returned by 23) and one for participating lecturers (returned by 211). The questionnaires included a number of positively worded indicator statements organised into themes or dimensions which included: motivation to do WIL, placement in the workplace, benefits of the lecturers' WIL, integration into the classroom, and WIL and college systems. The survey respondents had to rate the statements in a dimension on a five-point scale based on the extent to which they agreed or disagreed with them. Statement scores were then converted to a percentage, as in Table 1. A high percentage for a statement indicated a positive perception of it.

TABLE 1: Statement ratings on a five-point scale converted to a percentage

Response	Strongly disagree (very poor)	Disagree (poor)	Neither agree nor disagree (neither good nor bad)	Agree (good)	Strongly agree (excellent)
Percentage	0%	25%	50%	75%	100%

The demographics of academic staff who returned the lecturer questionnaire are included in Table 2 (Smith, 2017:40–41).

TABLE 2: Demographics of academic staff who returned the questionnaire

Gender	Male: 53% Female: 47%
Occupation	Lecturers and senior lecturers: 87% Heads of department: 9% Other staff categories: 4%
Prior industry experience	61%
Lecturing experience	More than ten years' experience: 33% Less than two years' experience: 2%
Programmes taught	Engineering: 37% Business: 37% Hospitality, Tourism and Transport: 6% IT, Primary Health and Primary Agriculture: 10% Fundamentals (Mathematics, Language and Life Orientation): 10%

The summative evaluation also included individual lecturer interviews. From these, nine vignettes that showcased the WIL experience of lecturers teaching a variety of programmes were prepared and included in the evaluation report. The portfolios analysed for this article were submitted by these nine lecturers. This provided an opportunity to triangulate the data provided by the lecturers interviewed with the data in their portfolios and with the feedback provided by the larger group of lecturers who had completed the evaluation questionnaire.

Content-based thematic analysis was used to contextualise the interpretation, as was the coding and labelling of data. The data were coded by means of a constant comparative method associated with Maykut and Morehouse (1994:126); analysed by means of thematic data analysis associated with Howitt and Cramer (2007:335); then compared, critically investigated and represented by thematic grouping (Cohen, Manion & Morrison, 2007:141).

Schulman and Schulman's (2004) work was used as a focus point for identifying themes. From lecturer experiences, evidence related to learning at an individual level was sought, as was evidence of interaction with communities of practice and policy implications that emanated from the experiences.

Findings on lecturer learning through WIL and the articulation between industry and college practice

The findings below have been analysed and discussed through the lens, respectively, of Shulman and Shulman's (2004) individual, community of practice, and policy and capital contribution factors.

Individual

Individual factors noted by Shulman and Shulman (2004) include the motivation of lecturers, what they wanted or expected to learn, what they actually learned, how they incorporated this into their teaching practice and their reflection on this.

Factors reported by lecturers that motivated their involvement in WIL placements include:

- It was a college requirement.
- It was an opportunity to develop themselves professionally.
- It was an opportunity to possibly improve their qualifications.

'Professional development' was the strongest motivator and achieved a mean positivity rating of 85% by lecturers (Smith, 2017:45). Most lecturers (62%) who participated in the programme had been selected by their colleges to do WIL. The rest chose to participate, with 26% volunteering and the remaining 12% being selected by their colleges, but given a choice to participate or not. The evaluation found that lecturers who chose to do WIL were slightly more motivated than those selected to do it (Smith, 2017:55–56).

Lecturers reported the following learning objectives for their WIL placement:

- to broaden industry knowledge and learn about current practices, technology and trends;
- to observe the practical application of theory taught;
- to gain practical experience;
- to be in a better position to respond to questions from students and;
- to bridge the gap between the college curriculum and industry requirements.

Lecturers who were interviewed during the evaluation elaborated on their reasons for doing WIL. One said:

> Most of us come straight from university. We didn't go into industry. I moved straight into lecturing so basically I am teaching what I was taught. I am not teaching something that I have done … WIL is actually taking the knowledge that I have learned and putting it into practice (Smith, 2017:62).

Another lecturer noted:

> Sometimes when you teach you get rusty and you are still working from old information that you have. You miss out on the current events in industry (Smith, 2017:58).

The reason given by a third lecturer was:

> WIL is a big bridge between the company side and college side. They [college students] must know both sides; [WIL for lecturers] can help us from our side to change things curriculum-wise, and to inform students what really happens in the workplace (Smith, 2017:73).

Actual learning while on WIL placements largely correlated with lecturer expectations, although it did not uniformly match expectations. Overall, lecturers were positive about their learning during WIL, which is evident in their rating of the following evaluation statements (Smith, 2017:47) in Table 3:

TABLE 3: Lecturers' learning during WIL

Statement	Mean score (%)
Your/lecturers' knowledge of subject areas has been updated	79
You/lecturers have identified gaps between the curriculum and industry practice	83
You/lecturers feel better equipped to deal with issues students face	79
You/lecturers have a better understanding of employer requirements	83
You/lecturers have received fresh insights into different types of job available	78

It is clear that participation in WIL enhanced the lecturers' knowledge of their subject and its application in industry, and that those who engaged in workplace activities enhanced their skills and experience. The lecturers also learned about employer requirements for different jobs and about changes in their industry. In addition, they learned about the structure, culture and rules of the workplaces they visited and the soft skills and attitudes that are important. They also identified differences between the curriculum and industry practice.

Finally, through participating in WIL, the lecturers developed an understanding of the value of WIL for college students and how it could be structured. The lecturers developed an understanding of the support students need in order to obtain suitable placements and benefit from them. One lecturer reported that she was able to encourage and guide students who had to do WIL by sharing her experience with them. She said:

> I told them that I felt exactly the same way. If I hadn't done my WIL, I would not have been able to relate to the students or guide them in their next steps. It broadened my vision totally of what they are facing (Smith, 2017:69).

The evaluation also found that WIL had a significant impact on lecturers' teaching practice (Smith, 2017:47–48). This finding was supported by the portfolios reviewed. Overall, the dimension 'integration into the classroom' was rated the highest of all the dimensions by lecturers in the survey, attaining a mean score of 79%. Individual indicator statements within this dimension achieved the scores (Smith, 2017:48) in Table 4.

TABLE 4: Indicator statements with regard to 'integration into the classroom'

Statement	Mean score (%)
You/lecturers are able to explain concepts better	80
You/lecturers use materials obtained on WIL (brochures, manuals, videos, etc.)	76
You/lecturers are able to give more relevant examples to students	83
You/lecturers have introduced changes in your/their teaching as a result of the lecturer WIL experience	77

In their portfolios and interviews, the lecturers indicated that they had informed students about the differences between the college curriculum and industry practice and, in some cases, had updated the procedures they were teaching to align these with current industry practice. For instance, one lecturer noted:

> We need to stay in line with what the industry requires … for example, with the machinery used in the workplace. In the textbook or learning material, we have the machinery that is not in use now. I could tell them that, and also that certain parts could be added. At some companies they need to set current in welding machines by hand. At other[s] they have a foot pedal where [they] can do it (Smith, 2017:77).

The lecturers had also made students aware of different types of job and employer requirements for each. One lecturer said:

> WIL has opened my mind to what job opportunities the college should be preparing students for. It is now part of my syllabus. Every topic I teach I tell students that once they have finished, they should be looking in this and this direction ... Before it was just content, I only knew a few jobs. Now those guys told me about business analysis, security, testing, things they don't have, which is why they are outsourcing (Smith, 2017:64).

The lecturers also reported that they now included a focus on workplace-applicable soft skills, discipline, and health and safety requirements. In terms of this, one lecturer noted:

> There are a lot of things that we somehow neglect, like the safety things that need to be in place before the job can take place. Also the planning that needs to happen, the paperwork, safety register concerns ... Those were the things that I tried to incorporate from WIL … We concentrate on the welding, for example, but not on the holistic, or soft skills … Those soft skills are so important because if students don't understand them, the employer gets frustrated and doesn't understand that students don't understand. It is those soft skills that help students find work (Smith, 2017:72, 74).

In addition, the lecturers reported that they increased the amount of time spent on practical activities. One lecturer noted that her WIL experience had given her many ideas on how to make her lessons more practical. For instance:

> If we are doing water treatment processes, there are different stages in each, from pre-treatment to tertiary treatment. I incorporated what I had learned in the class by giving the kids creative activities to do, for example to come up with an experiment where you filter your own water, demonstrating water filtration (Smith, 2017:81).

For Shulman and Shulman (2004), individual teacher learning and change rests on reflection. The evaluation findings and review of lecturer portfolios indicate that portfolio completion can facilitate lecturer reflection on learning and practice. One lecturer's comment on the SSACI WIL portfolio was:

> It allows you the opportunity to reflect back and be introspective about what you have learned (Smith, 2017:84).

Community of practice

Community of practice-related issues identified by Shulman and Schulman (2004) are the development of a shared vision, commitments, knowledge and sets of rituals of practice. The broad community of practice within which TVET lecturers operate includes lecturers, their

colleges, industry experts and students. The DHET requirement that colleges work with employers to improve curriculum delivery and facilitate student and lecturer placement was a catalyst for developing college–industry communities of practice. WIL was an opportunity for lecturers to learn from expert practitioners and build a network of industry contacts who could support student placement and possibly guest lectures at the college.

The notion of communities of practice is new in the college sector and there is often little sharing between lecturers and almost none with a broader community encompassing industry professionals. Hence, lecturers largely lack a vision of learning and sharing in a community of practice. But participation in WIL made lecturers begin to see themselves as part of a broader professional community which they could both learn from and contribute to.

Employers were primarily motivated to host lecturers for WIL by social responsibility concerns. Another motivator was the possibility that lecturers and students could help with work during placements and that students could be a source of future employees. Our data suggest that few employers think of themselves as part of a community of practice that includes colleges and lecturers, or that their practice could be informed by them. Therefore, while there was a willingness to cooperate, a shared vision of college–industry communities of practice was not yet evident.

Communities of practice develop over time out of shared commitments and interaction. However, many host employers had little knowledge of, and no relationship with, colleges. Some employers who had worked with colleges had hosted students for work experience. But providing WIL for lecturers was new to them and there was initially some confusion about its purpose and how it would differ from student WIL. In some workplaces, employees were even suspicious of the lecturers and worried that they were there to either spy on them or to take their jobs. For instance, one lecturer noted:

> They couldn't believe I was coming for practicals. They thought maybe I was coming to take their jobs. They were quite reluctant to show me things (Smith, 2017:92).

Through working with the lecturers, employer representatives began to understand the purpose of WIL for lecturers and the potential benefits both for the lecturer and the employer. This understanding is necessary for a shared vision of college–industry communities of practice to develop.

The development of a common knowledge base in the college–industry communities of practice was not evident. For this to develop, members of a community need to be in regular contact and to share knowledge and practice continuously. While lecturer WIL placements started a process of networking and learning between lecturers and employer representatives, our data indicate that changes are needed at a college and a system level for this to be sustained (Smith, 2016; 2017).

During WIL, the lecturers learned from their supervisors and other employees; but the learning in the workplace was not only one-way. Some lecturers also shared their subject knowledge. For instance, one lecturer said:

> I started showing them better ways to do things, like how to make a bed properly. They learned from me. For example, when making muffins, they didn't use ready-made mixes, so I showed them how to do things quickly (Smith, 2017:92).

There was also some sharing of knowledge and experience gained through WIL among the lecturers in a college. In these cases, the lecturers shared knowledge about the WIL process, including how employees were recruited and how their WIL experience was planned. They also shared information on what they had learned and their ideas for incorporating this into classroom practice. In some cases, the lecturers completed WIL in groups at the same workplaces, which provided a basis for common understanding and shared experiences to develop.

At a few colleges, the sharing of learning took place through subject and other college meetings. For instance, at one college, the Head of Primary Agriculture, who also completed WIL, said the following about his department:

> Usually when lecturers come back, especially after placement, we arrange a session for information delivery. We need to know what have you learned, how it can help us to go forward as a department, and how can we better shape our students in terms of what you have acquired. It is good to interact, to network (Smith, 2017:90).

At most colleges, though, there was no formal mechanism and few opportunities for the lecturers to share their experiences or plans for integration into teaching (Smith, 2017:61, 75). However, the SSACI training sessions and meetings provided an important forum for lecturers from the same and different colleges to share their learning (Smith, 2017:74, 94).

While there was some sharing of knowledge, there was no evidence of the development of common practice in the broader college–industry community. For shared common practice to develop, regular interaction, exchange and reflection are needed and systemic support is required to sustain it. The WIL for Lcturers programme provided impetus by sending lecturers into the workplace, but a single interaction is not enough to develop a college–industry community with shared rituals of practice.

During their WIL, some lecturers began exploring future collaboration possibilities, including online interaction and guest-lecturing arrangements, but there is no evidence that any of these arrangements came to fruition. Some lecturers completed a second placement, which reinforced their developing relationship with the employer and some lecturer placements led to arrangements for student placement. In one case, a placement consolidated an existing student placement arrangement and opened a discussion about establishing a formal agreement between college and employer (see Smith, 2017:63, 79,

80, 90). On returning to their colleges and the everyday pressures of lecturing, however, the lecturers tended to slip back into their old routines, which did not include regular interaction with employers.

A positive outcome of the industry placements was that lecturers and students started to see themselves as a part of a common community of practice. Lecturers shared their WIL experiences in the classroom and provided opportunities for students to do the same. Participating in WIL also equipped lecturers better to support the process of student WIL (Smith, 2017:69, 93).

Overall, participation in WIL led to some changes in lecturers' and their colleges' rituals of practice. First, it changed the way lecturers saw their subject and its teaching. They now understood the value of working with employers and aligning their teaching with industry practice. Secondly, the ritual of student WIL was reinforced by confirming its value for lecturers and building their understanding of the placement process. Thirdly, the lecturers' WIL experience and their interaction with each other on this led to some changes in the way they taught their subject, which now included strategies for linking it to workplace practice and mediating the differences between this and the college curriculum. Lastly, the practice of lecturers participating in WIL had not only become a possibility, but had also started moving in the direction of becoming a ritual which colleges could begin to formalise in their policy, planning and budgets.

A key issue in the development of a shared vision, commitments, knowledge and rituals of practice in the TVET college–industry community of practice, which is not addressed in the Shulman and Shulman (2004) framework, is the significant organisational and cultural differences that exist between colleges and industry workplaces. These need to be understood and negotiated in order to develop common understandings and practice. Van der Bijl and Taylor (2016:101) draw attention to the complexity of college lecturer learning and the transfer of learning between the college and industry activity systems.

Policy and capital contribution

The final level in the Shulman and Shulman (2004) framework concerns the policy or systemic contribution that is necessary to enable learning and change in practice. Shulman and Shulman (2004) identified four elements at the policy level: moral capital, curriculum capital, technical capital and venture capital.

Moral capital concerns the policy motivation, or incentive, for lecturers to complete WIL. While the DHET requires college lecturers to stay up to date with industry through continuing professional development, this requirement is not enforced by their conditions of employment. Furthermore, as a professional body still needs to be established for college lecturers, there is no professional recognition of their completion of industry WIL. In addition, completing WIL is time-consuming and most colleges require their lecturers to complete it during their holidays.

This, along with some colleges not reimbursing the expenses incurred by lecturers through participating in WIL, is a demotivating factor (Smith, 2017:42, 45). There are therefore few incentives in the system for practising lecturers to complete WIL.

However, the incorporation of industry WIL in initial lecturer qualifications provides an important motivation at the policy level. Not only does it elevate the importance of lecturers having current industry experience, but lecturers employed at colleges without educational qualifications also recognise that industry WIL will be a mandatory element of the new qualifications.

Curriculum capital is the second element at the level of policy contribution. The relationship between curriculum and industry practice is complex. The TVET curriculum is prescribed by the DHET and students are assessed against this. Therefore, while there is some scope for lecturers to adjust what they teach to improve its alignment with industry practice, they must cover what is in the curriculum for students to pass. Making changes to the curriculum also has time implications and, at SSACI training sessions, lecturers reported that there was little time to add additional material. Because of outdated curricula, the content included sometimes also contradicts industry practice (Van der Bijl & Taylor, 2016:106). However, curriculum change is a slow process in the college sector and it is not clear how lecturers should feed what they learn through industry WIL into this process.

Technical capital support is at the level of systems and resources. The college timetable does not include time for students and lecturers to complete WIL, and some lecturers recommended that it be amended to do so (Smith 2017:61). Systems and resources that enable lecturers to share their learning with each other and build this into their practice are also necessary. At SSACI training sessions, some lecturers reported that their application of learning was hindered by non-existent or outdated college resources and facilities. The evaluation also found that lecturers would like more support from their seniors, but that heavy workloads affect the capacity of their seniors to support them (Smith, 2017:37, 48).

Lecturer participation in WIL and the integration of learning from it into teaching has financial implications. This is the venture capital element. Completing placements requires transport and, in some cases, accommodation when suitable employers are not available locally. Then, if lecturers have to be in workplaces for lengthy periods, replacement lecturers might need to be hired. How this should be funded by colleges is not entirely clear. Some colleges provide for this in their budgets, but there is no standard approach to where the money is drawn from and how much is allocated (Smith, 2016). Improving alignment with industry also has cost implications regarding college infrastructure and equipment.

Conclusion

South African professional qualifications for TVET and ACET lecturers, which universities will begin offering in 2019, require the completion of WIL in two settings: the college classroom

and industry or other relevant workplace contexts. Education faculties have experience in implementing teaching practice but not in workplace WIL.

This article sought to inform the design and implementation of the industry–workplace WIL component of the new qualifications by means of an analysis of the learning of TVET college lecturers through workplace exposure. The Shulman and Shulman (2004) framework on teacher learning was used to analyse data from the SSACI-EDTP SETA WIL for Lecturers Project, through which more than 400 college lecturers completed a work placement. Using the Shulman and Shulman (2004) framework, lecturer learning was first considered at an individual level, then at a community of practice level and, finally, at a policy contribution level.

Shulman and Shulman's (2004) framework was found to be a good model for analysing lecturer learning from exposure in an industry setting. The following implications arise from our analysis for the design and implementation of the industry–workplace WIL component of college lecturer qualifications.

First, learning, development and change are needed at the individual, community of practice and policy contribution levels for lecturer learning through WIL to have a sustained impact on their teaching practice and its articulation with industry. Universities need to design qualifications that support learning at all three levels. Systems also need to be developed and resources allocated that enable the effective implementation of the workplace WIL component.

Secondly, the development of TVET college–industry relationships and communities of practice is central to effective vocational education. Trainee lecturers need to understand that their professional community includes the education and industry community in their subject field and they need to be given the capacity to build relationships and work with industry. Qualifications should address this requirement.

Thirdly, before lecturer placement commences, the motivation and vision for lecturers to complete industry WIL need to be understood and shared by universities, lecturers and the employers who will host them. In the Shulman and Shulman (2004) framework, motivation and vision provide the foundation for successful learning, collaboration and changed practice. The design of university programmes should include a preparation phase during which the motivation, vision and plans for industry WIL are clarified with trainee lecturers and host employers.

Fourthly, during their placement, the lecturers develop industry knowledge and experience and the employers learn from the lecturers and the process of hosting them. This is the understanding or knowledge dimension in the Shulman and Shulman (2004) framework, and reflection on learning is central to this. Knowledge development and sharing are reinforced through reflection at the individual, community of practice and policy levels. The process of knowledge development, sharing and reflection at different levels needs to be supported through qualification design and other mechanisms set up for this. For instance, weekly reviews between

workplace supervisors and trainee lecturers could be a programme requirement and journals could be used to facilitate individual reflection.

Finally, after completing WIL, lecturers are expected to incorporate their industry learning into their teaching practice. In the Shulman and Shulman (2004) framework, this is the practice dimension. For practice to change, it needs to be planned, resourced and supported. Furthermore, opportunities need to be created for individuals and members of communities of practice to reflect on and learn from practice to enable shared rituals of practice to develop. Learning from practice is also needed at the policy level to facilitate change in policy, curricula and support. Qualifications should be designed to deal with these issues and support the integration of lecturer learning from WIL into practice, and the building of shared practice both in college–industry communities and at the policy level.

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‘The drought is my teacher’: Adult learning and education in times of climate crisis[1]

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ABSTRACT

In Cape Town we have been experiencing the most severe drought in our history. We are not alone. Other cities – for example, in the United States, Brazil, Spain, Belgium, Australia, Morocco and Pakistan – are also learning to live under new, more extreme, drought conditions. In this article I use the local drought as an aperture through which to identify key insights into how adult learning and education (ALE) can and should respond in times of climate crisis. The article is exploratory, as the ambitious topic opens up a raft of complex economic, socio-ecological and political issues which can only be touched upon. It aims to prompt deeper conversations about ALE and climate crises and to identify key questions for future ALE research.

KEYWORDS

adult learning and education (ALE); climate crisis; fake news; popular education; lifelong learning

1 The title is inspired by Naomi Klein’s article, ‘The battle for paradise’ 20 March 2018, where she quotes a woman describing the Puerto Rican hurricane Maria as her teacher. Available: https://theintercept.com/2018/03/20/puertorico-hurricane-maria-recovery/.

Introduction

Ground Zero stares the citizens of Cape Town in the face. Will the taps of this modern city of nearly five million people run dry? How will we cope? What do we need to do to avoid this happening? What do we need to do to augment the water supply? How should we rethink our relationship with water in the future?

Winter (2018), a water scientist, explains that Cape Town's water supplies remain at high risk because predictions for rainfall in the south-western Cape remain uncertain, although in the long term, with accelerated climate change, drought may well become more frequent. Dam levels continue to fall while people are struggling to achieve the city's target of 450 million litres per day and yields from new water schemes will be known only in the coming months and next year. The general perception has been that the onset of climate change would be slow and measured. This would afford authorities the time to intervene with considered plans. But climate change is a disruptor. Over the past three years, Cape Town and the surrounding regions have experienced successive years of well-below-average rainfall. The experience is changing the way people think about water and how it is managed.

Citizens have halved their water usage within months of the earnest drive led by the city officials to save water (New, 2018). Some citizens are acting with degrees of 'survival pride' as they share their achievements of dramatically reducing their shower time to two minutes or less every other day; no longer flushing toilets unless absolutely necessary; washing clothes only infrequently; not watering gardens and replanting them with succulents; and queuing at the natural springs every other day to collect clean water. There is a strict consumption limit of 50 litres per person per day from municipal supplies. Grey-water systems are being installed along with large water tanks for those who can afford them. Many people are learning new plumbing skills and thinking innovatively about how to get by with less water.

There is a growing realisation that the framing of the water crisis makes it appear largely a 'middle-class problem'. But people who have grown up in poor and working-class homes ask, 'What's new?' Mama Aurelia Kaitesi, living in Masiphumelele, a poor residential area within greater Cape Town, shared her tips on water usage. She has three adults in her household and they use 200 litres over 14 days. She says:

> We, like everyone else, value drinking water, cooking and cleaning, washing our bodies, our clothes, cleaning our small home and flushing our toilet. This is how we manage. It takes a commitment from all 3 of us: First we put 10 litres of water in the fridge for drinking. We cook our food, washing our vegetables and keeping the water in a grey-water bucket. After the meal we wipe the plates clean before washing in water by hand. We always use a basin; no water down the sink. We keep the dishwater and boil it, adding a half cap of Jik and it can be used 2 or 3 times, sometimes more. We bath daily, washing by hand with low suds and rinsing with a cloth, keeping the water contained in a portable bath. We use that water to wash

> cloths or mop floors. We save it after that for any other needs and for flushing the toilet. We keep a container for teeth-brushing water and add this to our supply of grey water when finished. We have been doing this a few months and none of us has been sick and, even if I say it myself, we all look and feel clean. Water is sacred for everyone and we are all equal, so let's do it together for the sake of all of us (Interviewed by Heather Ferris, March 2018).

The drought heightens awareness of the inequalities in society, of water injustice. Working-class citizens are angered by the 'fake news' that circulates. Suné Payne (2018) expresses how angry she gets when people from economically poor areas are blamed for the crisis. 'How can you blame people who are used to limited resources for a crisis that is not their fault, but the fault of other factors, including utter mismanagement? I speak from experience. I live in what you call a "township" or a "poor area where most water gets wasted". Often, the people who don't waste are found in poor areas – why would we waste something we have limited access to? So why blame us?'

The Cape Town drought is our teacher in so many ways (Dowling, 2018).

The Cape Town drought is just one of many examples around the world of climate turmoil and disaster. In this article, I use this experience as an aperture to identify key insights into how adult learning and education (ALE) can and should respond in times of climate crisis. I begin with a discussion of the use of the terms and the meaning of 'adult learning and education'. I then discuss the climate crisis and the accompanying 'fake news'. This is followed by a discussion of ALE strategies and approaches to be considered in these turbulent times. This is nourished by the work of others such as Walter (2009), Holford (2016), Burt and Lusithi (2017) and Griswold (2017).

Research approach

This article builds on four decades of involvement as a scholar–activist in the field of ALE at local, national and international levels, some of which has been captured in my previous writings. More specifically, it draws on my position as a participant–observer in the current drought in Cape Town. Over the past 18 months, I have been collecting local media reports, reviewing literature (grey and otherwise), attending seminars, participating in social actions and debating with other scholar–activists, in order to deepen and broaden my understanding of the climate crisis, and to make sense of the role of ALE in the context of accelerated climate change.

Adult learning and education

What's in a name?

There is much discussion in the area of ALE concerning the use of terminology (eg Walters & Daniels, 2009). The different regions of the world use different terms to describe ALE: for

example, non-formal education, adult literacy and basic education, lifelong learning (LLL), popular education, youth and adult education, continuing education, and so on. This can and does create confusion when countries self-report, as can be seen in the GRALE III Report (UILL, 2016), which I have highlighted elsewhere (Walters & Watters, 2017). GRALE III reports on a survey of ALE across 139 countries globally and indicates that definitions of ALE varied widely among countries, depending on the immediate needs, priorities and contexts of their populations.

> ALE encompasses all formal, non-formal and informal or incidental learning and continuing education (both general and vocational, and both theoretical and practical) undertaken by adults (as this term is defined in any one country). ALE participants will typically have concluded their initial education and training and then returned to some form of learning. But in all countries there will be young people and adults who did not have the opportunity to enrol in or complete school education by the age foreseen, and who participate in ALE programmes, including those to equip them with literacy and basic skills or as a 'second chance' to gain recognised certificates (UILL, 2016:29).

Some countries position literacy as a core focus of their ALE activities, whereas others see it more broadly. This signals one of the fault lines of the report – it is not necessarily clear which definitions are being used in each of the country self-reports. Looking at various responses from the survey, it appears that many countries are still equating ALE with adult basic education (ABE) of one form or another. This makes it difficult to obtain a clear picture of ALE's breadth and depth internationally. In order to develop a more robust understanding of ALE in particular country settings and globally, data received through the survey need to be analysed more deeply if it is to stand up to scrutiny and extend our understanding of ALE. One of the less well-covered sub-areas of ALE, and one that is critical at this time of accelerated climate change, massive inequalities and population displacement, is that of 'popular education'. The limited coverage of popular education is not surprising, since such data are rarely generated through desktop study but requires on-the-ground engagement with participants in educational or learning action processes.

The importance of finding a common language is well illustrated by the regular surveys by the UNESCO Institute for Lifelong Learning (UILL). Their efforts are contributing towards ALE's gaining more traction globally. ALE is seen as part of an LLL philosophy and approach, which is the overarching term for all education and learning across all ages ('from cradle to grave'). The German Adult Education Association (DVV International) also began a process with a group of about 15 of us from various regions of the world, in Suwon, Korea, in October 2017. The objective was to explore the finding of common terms to describe the field, but there is still much work to be done to gain more universal acceptance of common usage and agreed definitions.

Important research questions are embedded in the 'naming' discussions, including what the barriers are to being able to achieve more traction for common ways of describing the field; and

how to ensure that the breadth and depth of the field are fully represented in the global discussions and research undertakings.

What is the extent of ALE?

A young mother in Bangladesh is learning about nutrition for her child; a school teacher is upgrading her skills with the latest computer software; a man who has been laid off from his job as a labourer is learning plumbing skills; a community is living through a drought and is learning new farming methods; peace committees have been formed in conflict zones and they are learning about non-violent ways of organising; younger and older adults are learning to be entrepreneurs so they can make a living; women are speaking up and out against violence; young people and adults who did not finish school are enrolled in 'second-chance' programmes; and so the list goes on.

To convey the extent of ALE more graphically, imagine an LLL necklace of beads, like the one developed by the Lao Disabled Women Development Centre (nd), which shows the whole of learning throughout life: two yellow beads represent pre-school; two orange beads, primary school; three red beads, high school; two green beads, post-school university or college; and the 32 remaining blue beads represent all the learning beyond initial education and training. This is the extent of ALE.

ALE, therefore, covers the majority of people's lives; from the time they are deemed to be adult until death. It can involve formal programmes or it can occur experientially. ALE is integrated into all aspects of individual and communal life through formal and non-formal education and training and within diffuse learning environments, relating to:

- health and wellbeing;
- employment and labour markets, including sustainable livelihoods;
- social, civic and communal affairs; and
- arts and culture (Wolpe, 1994; UILL, 2016).

While informal, non-formal and formal learning and education are often used as categories for ALE, I find it difficult to believe that teaching or learning activities can be neatly compartmentalised or held in discrete containers. Rather, I am influenced by Tara Fenwick's (2010) argument that real learning processes are of enormous complexity; they are hybrid, indeterminate, deal with fluid boundaries and 'messy objects', and their status of formalisation cannot be described through static and more or less subjective definitions of informal, non-formal and formal learning. Indeed, Actor Network Theory (ANT) substitutes 'domains or containers' with 'relational networks'. An actor network sensibility understands knowledge to be generated through relational strategies, through networks, and performed through inanimate as well as animate beings in precarious arrangements (Fenwick & Edwards, 2013:56–57). In ANT, learning is assumed to be a materialising assemblage and not a cognitive achievement or way of interacting. As Tara Fenwick and Richard Edwards (2013:54) assert,

teaching is not simply about the relationships between human beings, but about the networks of human beings and things through which teaching and learning are translated and enacted. The drought as teacher illustrates this point.

Given the extent of ALE in terms of length and breadth, why does it struggle for recognition? This very important question is troubling the International Council for Adult Education (ICAE), the largest civil-society organisation with global reach (ICAE, pers. comm., 2018). It is also a question for many ALE professionals and requires further research.

We turn now to a discussion of climate crisis and how ALE can contribute in response to it. This includes questioning, for example: How do educators engage different communities of learners with taboo subjects such as 'a no-growth future'?

Climate crisis – what crisis?

Fossil fuels are heating our planet at a pace and scale never before experienced (Satgar, 2018). Extreme weather patterns, rising sea levels and accelerating feedback loops are a commonplace feature of our lives. The number of environmental refugees is increasing and several island states and low-lying countries are becoming vulnerable (Klein, 2017). Some argue (Masie & Bond, 2018) that we are on an ecocidal path of species extinction. Governments and their international platforms such as the Paris Climate Agreement (Satgar, 2018) deliver too little, too late (Hickel, 2015). Most states continue on their carbon-intensive energy paths, with devastating results. There are growing numbers of environmental activist-scholars (eg Klein, 2017; Satgar, 2018) warning that political leaders across the world are failing to provide systemic solutions to the climate crisis; the private sector is both complicit and often inhibited by the current economic paradigm; and civil society is mostly ill-equipped and uninformed to apply pressure for change.

This is the contemporary context – or is it?

In the light of political developments in, for example, both the United Kingdom with the BREXIT vote to exit the European Union (EU) and the United States' most recent presidential election, there has been heightened discussion in the popular media of 'fake news' or 'post-truth'. Reflecting this concern, the *Oxford Dictionary* (2016) chose 'post-truth' as its word of the year, defining the adjective as 'relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief'. There are many contemporary examples, which include AIDS or climate-change denialists; with Donald Trump, the president of the richest, most powerful and influential country, as well as the biggest emitter of greenhouse gases in the world, being the most prominent (Guerrero, 2018:31).

The wilful spreading of misinformation, deceit or ignorance is, of course, not new. Robert Proctor, a science historian from Stanford University, in the 1970s studied the practices of tobacco firms and how they had spread confusion about whether smoking caused cancer.

He created a word for the study of the deliberate propagation of ignorance: agnotology (Kenyon, 2016). Edward Herman and Noam Chomsky (1988) argued in, *Manufacturing consent: The political economy of mass media*, that there is no such thing as a free press and described five filters of the mass media machine which demonstrate whose opinions matter most. These 'filters' are: ownership; advertising; complicity of owners or journalists; complicity of people for whom there would be consequences should they step out of or over a particular line; and the creation of a common enemy to manufacture consent – for example, for whether a country should go to war or not.

The stakes are extremely high relating to the climate crisis; hence the major incentive for those, for example in the fossil fuel industry, to be highly motivated to spread 'fake news' that denies the facts. Citizens, therefore, need to be equipped to know how to identify what is fake and what is real news. This is made more difficult if the media are restricted or controlled within contexts of growing authoritarianism globally, examples of which there are in Europe, and then there is the United States. These are contexts which call for active ALE interventions.

Populist authoritarian turn

For ALE, the dangers of the global trends towards populist authoritarianism – for example, in Latin America – are real. For those who are concerned with deepening possibilities for socially just, environmentally sustainable and democratic societies, we look to the past as we confront the turbulent new world. We are living in a time when many people are returning to social and political theory from the last century and to theorists such as Hannah Arendt, Antonio Gramsci, Franz Fanon, Steve Biko, and otherswho have studied the rise of totalitarianism in different forms, whether in Germany, Italy, Algeria or South Africa. They, and many others, are being drawn on to help with collective understandings of what may be happening today and how to resist and shape alternative futures. So, in brief, what does the rise of right-wing populism mean?

Canadian academic Stefan Kipfer (2016:314) asserts that authoritarian populism operates with a profoundly anti-democratic conception of 'the people'. He describes how an 'inert mass of taxpayers, families, nationals or believers are invoked from above by folksy or fiery leaders and mobilised by demagogy and fear-mongering directed against internal or external enemies'.

When authoritarian populists claim a direct line to the people, they typically do so by exploiting resentment against existing establishments and symbolically stacking it with subaltern figures. One of the distinct features of recent right-wing populism is its close connection to economic liberalism. Kipfer (2016) argues that the rise of today's right-wing populisms can be explained with reference to complex relationships between economic restructuring, socio-political struggle and ideology. The stakes are high and the struggles for hegemony are fierce. ALE, particularly in the form of popular education, including social movement learning, becomes increasingly important as people confront the authoritarian turn.

Elephant in the room?

The climate crisis raises fundamental questions about the kind of economic and political futures that are possible if life on the planet is to be sustained. This, in turn, raises questions about the meanings of sustainability itself. This is a time when the global community of nations, through the United Nations (UN), has adopted the Sustainable Development Goals (SDGs) as a response to the climate crisis. There is a strong argument that the SDGs do not go far enough and are 'too little too late' (Hickel, 2015). Linked to this is the discussion about 'sustainability' – What is to be sustained for whom, at what cost to life, and why?

There is an abundance of evidence to show that the ubiquitous neo-liberal economic model of relentless economic growth to sustain voracious consumer markets is part of the problem. Widespread deforestation, fossil-fuel emissions, industrialised agriculture and the pollution of water supplies are often prioritised above healthy ecosystems, communities and cultures, and are contributing to the rapidity of climate change. Hickel (2015) points to the fundamental contradictions in the SDGs. As he says:

> What we need is to tackle the irrationality of endless growth head-on, pointing out that capitalist growth – as measured by GDP – is not the solution to poverty and ecological crisis, but the primary cause. And we need a saner measure of human progress – one that gears us not toward more extraction and consumption by the world's elite, but more fairness, more equality, more well-being, more sharing, to the benefit of the vast majority of humanity.

Economic growth ideology has become a hegemonic force which makes it very difficult to debate, imagine or implement alternatives. This is one of the largest 'elephants in the room' which has to be confronted. As Klein (2014:22) argues, there are urgent choices to be made to avoid catastrophic climate disruption: 'This includes changing just about everything about the economy as we presently know it.'

Klein (2017:267) puts forward powerful arguments for ways towards alternative economic systems in a Canadian example: 'The Leap Manifesto: A call for a Canada based on caring for the earth and one another.' There are many other initiatives where alternative economic systems are being sought (Fioramonti, 2017; Raskin, 2016; Ashley 2018; Pillay, 2018; Satgar, 2018; Solon, 2018; among others). They point to the important pedagogical, political and organisational work that is needed for new imaginings for a socio-ecologically just future to take root. This is the work of educators, activists and scientists. There are many researchable questions for ALE enmeshed in these profound discussions and debates, such as: How do educators engage different communities of learners with taboo subjects such as 'a no-growth future'?

How can and should ALE respond to the climate crisis?

Having presented an overview of some of the layers that need to be considered when identifying ways in which ALE can and should respond to climate crises, I proffer suggestions towards an answer. I keep in mind the areas of individual and communal life in which ALE is entangled: health and wellbeing; employment and labour markets, including sustainable livelihoods; and social, civic and communal affairs, including arts and culture. I also use the experience of the Cape Town drought to animate ideas.

ALE within a lifelong learning philosophy and approach

A lifelong learning (LLL) orientation is fundamental to responding to the climate crisis, as people of all ages are affected, from birth to death. As one woman, standing in a queue for water in Cape Town, said, 'I never thought I would be instructing my children not to flush the toilet unless absolutely necessary!'

Candy, Crebert and O'Leary (1994) highlight in a nutshell the following attributes of lifelong learners: an enquiring mind, a helicopter vision, a critical ability to evaluate information, a sense of personal agency and a repertoire of learning skills and abilities. These hold for any level of learning at any age. Moving from the individual to the organisational, essential characteristics of an LLL higher education institution demonstrate that the entire educational institution is affected if it adopts an LLL orientation. LLL needs to be concerned with people of all ages (lifelong) and with engagement with and in society at large (life-wide) (DLL, 2001). The overarching policy frameworks, the kinds of linkage and partnership that are negotiated, the research orientation, the curricula, the teaching and learning methodologies, the administrative policies and student support services are all implicated. The educators are required to be lifelong learners also, emulating the need to be curious, constantly learning, questioning and engaging with the world (Walters, 2012).

In the diffuse learning environments of home, work, the media and society in general, the indicators for learning cities (UNESCO, 2015) are instructive. As rapid climate change is a disruptor and can be turbulent, we do not know what is coming at us, so we do need to be open to learn and adapt fast. Building resilience through a LLL orientation at personal, organisational, community and societal levels will assist our collective abilities to respond. However, for these responses to be concerned with 'just transitions' (Satgar, 2018) rather than merely individual survival, we need, as Wallerstein (2009) urges, to have at the forefront of our consciousness and our actions the struggle against 'the three fundamental inequalities of the world – gender, class, and race/ethnicity/religion'. As the Cape Town drought illustrates, water justice is very much a gender, race and class issue, with middle-class people needing to learn from poor and working-class people how to live with less, thus inverting the taken-for-granted knowledge hierarchy. The ways we confront such deep prejudices and discrimination within our society and ourselves call for life-deep learning (Walters, 2011).

Issues of water and sanitation are deeply personal and political, as illustrated by Govender (2016) with examples of women and girls being sexually assaulted when walking to toilets and taps far from their homes; and Michael Komape, a six-year-old, drowning in a pit latrine at school. Therefore ALE responses to the climate crisis require a lifelong, life-wide and life-deep orientation and approach permeated by socio-ecological justice sensibilities and commitments.

ALE in times of 'fake news' or 'post-truth'

In the midst of a crisis, it is easy for people to panic, to get caught up in a 'blame game'. As we have seen with the Cape Town drought, there have been periods when different levels of government have blamed each other for the dire situation; different political parties want to score political points; or opportunists want to discredit individual leaders (Yates 2018). There have been moments when some citizens have questioned whether there is in fact a critical water crisis at all, even though the photographs of the near-empty dams seem to be irrefutable proof of the situation. It is fertile ground for 'fake news'.

The importance of credible, politically neutral interlocutors from universities or civil-society organisations (CSOs) is proving vital. For example, the World Wildlife Fund (WWF South Africa) is disseminating helpful fact sheets relating to the water crisis weekly through the public and social media. In turn, these fact sheets are taken up in educational or work settings for discussion. Public meetings are being held by different faith-based organisations, professional bodies, CSOs and businesses at which water scientists engage citizens with critical questions such as: How can we rethink the water catchment area?; What are the best ways to augment the water supply?; or What are the best ways of storing or using water for domestic or industrial purposes? The provincial premier and mayoral committees have been communicating regularly with the citizens on the latest developments through local radio stations, the City of Cape Town website and social media, and the public have been encouraged to share their latest water-saving innovations on talk radio. The veracity of the information being circulated regularly by credible people and organisations is essential.

In order to work against 'fake news', commentators and educators are stressing the importance of various forms of critical literacy (Candy, 2002) to be able to 'read the world' and check 'fake news'. In general, citizens need to be encouraged to be sceptical about what they read and to pause before forwarding the next sensational 'fact' that comes across social media. For educators, the need to inculcate critical scepticism is not new, but we need now to engage with agnotology – the study of the deliberate propagation of ignorance – by asking who benefits from circulating particular ideas so that we limit our complicity in the spread of 'fake news'.

ALE resisting authoritarianism?

Authoritarianism in various forms creates perfect conditions for 'fake news' to be propagated and flourish. A participatory democratic culture that encourages questioning, curiosity and

broad-based involvement of citizens is likely to be an antidote. Debates about the disruption and turmoil created by climate change cannot be left to the few. The stakes are too high.

Managing water raises many related questions about other natural resources and forms of energy, as elaborated on in a seminar by sustainability expert, Mark Swilling (2017). It is in the entangled economic, political, social and cultural context that debates about climate change land. It is highly charged politically and economically. It is therefore no wonder that governments or corporations do not necessarily want to encourage citizen participation – clandestine deals made in secret out of the public gaze are more common. The SDGs and what happens to them at a national or a global level need to be understood in this context (Guerrero, 2018). Globally, environmental activists or educators are being murdered every week, and many disappear without trace. By August 2017, 117 had been killed in that year alone (Ulmanu, Evans & Brown, 2017).

Many social movements and CSOs that are working for climate justice are only too aware of the fraught political context within which they are working. Popular education, which has its roots in the struggles for liberation in Latin America, Africa and Asia, is a strand of ALE from which much can be gleaned in the context of the climate crisis. We have written elsewhere (Burt, James, Von Kotze & Walters, 2017; Von Kotze & Walters, 2017) that popular education thrives in times of heightened socio-economic and political contestation and in opposition to poverty, racism, misogyny, war and climate injustice, among other negatives. It is integral to organising against authoritarian practices.

An example of contemporary popular education interventions relating to struggles for energy justice in the climate crisis in Cape Town is being led by the Southern African Faith Communities Environmental Initiative (SAFCEI), the Right2Know, Popular Education Programme and other CSOs. The catalyst for organising has been the allegedly corrupt trillion rand nuclear deal which has been enmeshed with state capture and the power utility, Eskom, among other individuals and institutions (Fig, 2018). Activities have included: workshops with working-class communities on sources of energy, including coal, natural gas, nuclear and renewables, in relation to electricity cost; weekly protests outside Parliament; public protests on the bridges leading into the city; and supporting communities in their submissions to the energy regulator to oppose government plans to build new nuclear power stations. Communities in the Northern Cape, which are affected by nuclear waste dump sites, and in the Karoo, where there are threats of fracking, have also participated. The Northern Cape and the Karoo are particularly arid regions of the country and water scarcity and contamination are key concerns. These popular education initiatives have been helping to connect people and their struggles, showing how all the issues are interlinked.

Popular education is overtly political, critical of the status quo and committed to 'progressive social and political change'. It is both a theory and a practice of social action (Burt et al., 2017). Popular education seeks to draw on the collective knowledge and experiences of life's struggles and activism, on historical understandings, in order to develop the coherent theory

and practice needed to challenge the individualised, commodified socio-economic world. Structural and systems change require collective struggle. Through opposition to the 'corrupt nuclear deal', communities across social classes have been drawn into questioning the options for the most effective energy mix for the country. This, in turn, has begun to raise deeper, longer-term questions about the various future energy options and the kind of society that can be envisaged. The learning that occurs in struggle may alter people's understanding fundamentally, as they experience their own agency and collective power in affecting change. This is why popular education is such an important part of ALE's response to the climate crises.

Building capacities in the short, medium and longer term

Raskin, in *Journey to earthland* (2016), suggests that we need to combine idealism and realism in ways that reinforce our hope with scientific rigour as we co-create futures. It is clear that we need a range of adaptive skills, expertise and commitments; all enhanced through processes of ALE, to solve the sticky, tricky climate-crisis issues and problems.

In the contemporary moment of drought in Cape Town, for example, we need: thousands of 'barefoot plumbers' who can respond quickly to stop water leaks; thousands of 'hackers' to clear away thirsty alien vegetation; water scientists, along with other environmental scientists, to research and guide decisions concerning water augmentation and reduction strategies; journalists and savvy communicators to assist with the constant flow of reliable information to citizens; economists to work out the most cost-effective use of limited resources; political scientists and sociologists to analyse and assist with understanding the intended and unintended consequences of various strategies; educators to deepen critical understandings of what is happening and why, and to help change behaviours; artists and cultural workers to educate, create, play and encourage ways of understanding, responding to and dreaming of alternatives; activists and organisers to mobilise communities; health workers to treat and educate patients about how to stay healthy under new conditions; civil servants to keep systems running; politicians to negotiate between different levels of government; engineers and ICT specialists … the list continues. The climate crisis requires the collective efforts of all sectors and levels of society to work and learn together to produce the combined idealism and realism in ways that reinforce our hope underpinned by scientific rigour.

In terms of dealing with the climate crisis at a national level over the short to medium term, perhaps lessons can be learnt from responses to other crises, such as to the HIV and AIDS crisis in South Africa in the 1990s. Then, it will be recalled, different sectors mobilised institutional support for targeted strategies of broad consciousness-raising. Other responses included scientific research and development; mass media campaigns; continuing education for health professionals; and so on. These grew out of the mass mobilisation of millions of people by the Treatment Action Campaign (TAC). This social movement helped to concentrate the collective mind and was an essential element in forcing the issues onto the government, business and civil society's agendas in support of those affected and infected (Robins, 2008).

Other generative literature to turn to at this time is that of learning cities and communities (UNESCO, 2015), which elaborates what it takes to embed LLL approaches across formal and non-formal education, training and diffuse learning environments of society as a whole.

Learning from the drought: Personal reflections

The drought has certainly been my teacher. In this regard I have become a voracious and committed adult learner as everyday behaviours are rethought and adapted to accommodate new water-saving strategies – we have become a small drought-mitigation learning community. Water management demands the reallocation of time for filling buckets, topping up cisterns, emptying basins after showers and using the grey water carefully to maximum effect. Money flows in the household have shifted to accommodate new water tanks, a borehole and irrigation systems, with my partner teaching himself new plumbing, electrical and garden irrigation skills from the Internet or through conversations with peers. Our diet is influenced by what vegetables flourish under water-stressed conditions. Educating guests to new rules within this water-saving homestead finds humorous messaging in bathrooms and induction processes when they arrive to stay for a few nights – learning to live in drought conditions is indeed very personal.

My everyday reading of news or listening to the radio is shaped to some degree by the drought. I am drawn to learn more about the political economy of water and to glean more from people who are not middle-class, highly educated people like me. The classed, raced and gendered nature of the drought is obvious – working class and poor women and men, the majority of whom are black, have different issues from me and from one another; they are engaging with the drought from very different experiences. I am aware of the gendered roles in my own household. I attend seminars, participate in social actions and constantly question what form and shape a 'water-just' city should look and feel like; I question how we can use the drought collectively as our teacher, so that we emerge as a fairer and more just society. How do we sediment the lessons of changed relationships with water into our individual and collective lives once the immediate crisis is over? What can we learn from nature as we do this?

The drought as teacher is reinforcing my understandings of the connections between all forms of energy, and the implications these choices have for the future shape of society, both locally and globally. The urgency of confronting the 'elephants in the room', if we are to sustain life on the planet, has become even more urgent. I concur with Guerrero when she says that solving the climate crisis affects all aspects of society – the economy, technology, trade, equity, ethics, security as well as relations within and between countries. She emphasises the need to:

> … take responsibility of educating oneself and being a conscious political subject, organising, mobilising, forging unities and exposing the false solutions peddled by those who created them in the first place. The work of questioning reality and concepts, asking who wins and who loses in various processes and who gains from injustices, is a key component of building alternatives. It is a complex and challenging task, and not one that can be comfortably executed (Guerrero, 2018:43).

Concluding thoughts

Klein (2014) describes the climate crisis as a confrontation between capitalism and the planet. This implies that virtually everything as we know it has to be rethought and relearnt. It challenges us personally and collectively to rethink how we live, what we value and what we stand for. It demands that we have concern for those with little or no voice in governance, the poor and the unborn (Guerrero, 2018:38). It calls for new and imaginative thinking across all spheres of economic, social, environmental and cultural life. It encourages us all to be lifelong learners by seeking new answers to old questions together with others across sectors, social classes and disciplines. As educators, besides educating ourselves, we can enhance opportunities for others to learn about the climate crisis.

The political contestations over the future are fierce. The majority of people need to be encouraged to participate in these struggles, as the learning that occurs in struggle may alter their understandings fundamentally as they experience their own agency and collective power in affecting change. As Paolo Freire said, 'We will make the path by walking it' (Horton & Freire, 1990); no one person or group has the answers to the intractable problems.

It is time to both resist that which is compounding the climate crisis today and also to dream; and to imagine alternative futures. ALE has a vital role to play in both.

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- Uphold the highest standards of integrity, intellectual rigour and ethics.

The editor(s) will not disclose any information about the submitted manuscripts or their authors to anyone other than the author(s) and reviewer(s), as appropriate. The editor(s) will not use submitted material in any way whatsoever without the written consent of the author(s).

Submitted articles will be reviewed by two anonymous external referees. Appropriate papers will be reviewed according to their significance and validity. Articles that have been submitted must not have been published or accepted for publication elsewhere. The editor(s) are responsible for deciding which of the manuscripts submitted to the journal will be published. The decision of the editor(s) to accept or reject a manuscript will be based on the importance of the manuscript, its originality and clarity, the validity of the study and its relevance to the journal's scope. Considerations will also include current legal requirements regarding defamation, copyright infringement and plagiarism.

Submissions may not exceed the 8 000-word limit and must contain a title, abstract of not more than 200 words and be correctly and completely referenced according to the Harvard system of referencing. Footnotes should be kept to a minimum. Tables should be positioned where they are referred to and not be submitted separately. Authors are requested to consult the author's guidelines on the website.

The article should not contain any identification of the author and should be anonymised as far as possible. The name(s) and affiliations of the author(s), as well as their email address, should appear on a separate page.

Each author will receive a copy of the journal in which the article appears. The article becomes the copyright of the publishers of the journal. The journal is freely available on the website: www.epubs.ac.za/index.php/jovacet.

CALL FOR PAPERS

Journal of Vocational, Adult and Continuing Education and Training (JOVACET)

SPECIAL EDITION 2019

You are invited to submit an abstract for the second issue of the JOVACET, which will be a special edition with a specific focus on adult and continuing education and training, to be published in **October/November 2019**.

Deadline for abstract submissions: **30 January 2019**. Authors will be notified by **28 February 2019** whether their abstracts have been accepted. Full paper submissions will be due **30 April 2019** and will undergo peer review by at least two reviewers.

Abstracts should comprise a maximum of 700 words and be submitted in MS Word format via the journal website at www.jovacet.co.za or emailed to Dr Catherine Robertson at cathy@tcrobertson.co.za.

This second, Special Edition of the journal will have as its focus the adult and continuing education and training conference held on 24–25 November 2018 in Cape Town, the theme of which is: 'Access, barriers to participation and success for adult learners. Re-thinking equity and social justice in post-school education'. Contributors may share any recent research appropriate to the theme and the adult learning sector. Therefore, papers should deal with relevant research, its conceptual framing and its findings, with a view to identifying possible areas for further exploration. Submissions should be of high quality and follow academic research/writing conventions in the social sciences. Specifications can be found on the JOVACET website or obtained from Dr Catherine Robertson at the email address above.

We look forward to receiving your submissions!

WRITING FOR PUBLICATION TRAINING WORKSHOP

Attention

EMERGING SCHOLARS AND ASPIRANT AUTHORS

The IPSS at UWC intends to host a **'Writing for Publication' training workshop** for aspirant journal authors, during the week of **February 18th–22nd 2019**. This workshop would be useful for emerging scholars who want to develop their articles for publication in future editions of the **JOVACET**. Research articles in progress should be focused on relevant issues in TVET and Adult and Continuing Education and Training, and we would particularly like to encourage practitioners in these fields to attend the training.

Prof. Jaswinder Dhillon of Worcester University in the UK, who has extensive experience as a journal editor and who has published extensively, will facilitate the workshop. Her areas of research are qualitative research methodologies, collaborative leadership, teaching and teacher education, learning and assessment, higher education, further and vocational education and TESOL. She is associate editor for the journal Educational Management Administration & Leadership (EMAL), and a long-standing member of the editorial board and editorial management committee of the Journal of Vocational Education and Training (JVET), having served as editor of the JVET for four years.

The Venue (in Cape Town) and programme for the workshop will be confirmed in due course. As the number of places for the workshop is limited, applicants will be subject to a selection process. Kindly send us an abstract of your (intended) article, as well as a short CV (maximum of 2 pages). Selected applicants will attend the training course free of charge.

CLOSING DATE FOR APPLICATIONS:
15 DECEMBER 2018

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.

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