Journal of Vocational, Adult and Continuing Education and Training

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

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.

DISCLAIMER

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EDITORIAL TEAM

ACKNOWLEDGEMENTS

EDITORIAL

Prof. Joy Papier
Editor-in-Chief

Good colleagues and friends of JOVACET!

It gives me great pleasure to present our fourth edition of JOVACET, Volume 3(1) of 2020. It seems absolutely ages since our launch conference in November 2017, after which the journal took its first fledgling steps in 2018. While it feels as if the time has come for another conference, the global pandemic which will still be with us for some time has put paid to any travel plans for the foreseeable future. Nonetheless, we are heartened by the commitment of our support base, our editorial committee, our reviewers, and the diligent authors who have entrusted us with their academic endeavours in spite of the difficult months we have been through.

In this issue of JOVACET, we continue with the theme of 'researchable issues in TVET (technical and vocational education and training)', the range of articles reflecting the global village in which TVET is located. Submissions in this issue span contexts from the north and the south, urban and rural, students and lecturers, education institutions and workplaces.

Garraway and Winberg aptly deal with boundary crossing as they explore curriculum design that embraces expansive learning in a programme aimed at assisting academic staff to bridge work and education contexts in developing their course content. Van der Bijl and Taylor continue the theme of vocational educator development as they undertake a critical analysis of the various conflictual discourses emanating from the need to develop a work-integrated learning (WIL) component of the qualification for educators in adult and continuing education as required by new policy frameworks for TVET lecturers and ACET (adult and community education and training) educators in South Africa. Still on the theme of vocational teacher training, Schüller and Bergami comment on the Teacher Placement in

Industry (TPI) initiative in Australia where VET (vocational education and training) teachers are seconded to companies for a period of time in order to enhance their understanding of industrial practices. The authors explore the views of education managers to gauge their support for the initiative and find that managers believe in the value of the initiative even though resources are inadequate and essential industry links need strengthening.

At the learners' end of the spectrum, the dual contexts of academic learning and work are illuminated in a study reported by Gross, Berger, Wenger and Sauli, set in the dual apprenticeship programme of vocational training in Switzerland. The authors produce fascinating insights into apprentices' perceptions of autonomy and control in the two settings, through the different motivating styles of educators and company trainers.

Much further south, Mabunda and Frick in their article report on a case study of a rural TVET college in South Africa, and the factors that limit employability of graduates in selected National Certificate (Vocational) programmes. In a climate of generally high youth unemployment, TVET college graduates often face challenges in their quest for jobs, but the difficulties are compounded for youths in rural areas where employment opportunities may be even more limited. The authors point to shortcomings that require attention if the employment prospects of these graduates are to be enhanced.

Matenda picks up the baton for another potentially marginalised group of TVET students – women in Engineering Studies. The author applies the capabilities framework to analyse women's experiences as they navigate college and the labour market, juxtaposing their lived encounters with South African policy commitments to social justice and addressing gender equity. The case study concludes that, while women in Engineering have increased in number, there is still much to be done for ideals of social justice to be realised.

In a more reflective contribution, Papier and McGrath review the growing knowledge base in respect of TVET in the south, with a first-cut analysis of postgraduate output over a 10-year period, in the light of the South African policy focus on TVET and increasing support for research in the field. While TVET-related doctoral graduates are relatively few in number, there are positive signs of an emerging community of researchers and of an expanding contextualised knowledge base with respect to TVET. The authors identify a number of aspects observed across the research output which could support and encourage further reflection on the kind of contribution that postgraduate TVET research is making. Their article also draws attention to the nascent cadre of TVET intellectuals who can provide much-needed supervisory capacity in this field.

In closing the 2020 issue of JOVACET, and as an additional feature, we include an interview with the late Adrienne Bird conducted and submitted to us by Prof. Johann Maree. Given Adrienne Bird's sustained contribution to skills development and her passionate advocacy of vocational education, Prof. Maree thought readers might be inspired by her story, conveyed in her own words and in her own inimitable way.

The year 2020 has been an extremely tough year across the board, and we continue to pay tribute to the many dedicated vocational practitioners who have been on the frontlines of the battle against COVID-19, the healthcare workers, safety officers and the like. The resilience of the human spirit has been sorely tested and there is little doubt that the pandemic will leave an indelible mark on all of our structures, our systems, and our ways of doing and being. While there has been enormous loss at so many levels, there have also been some gains which are still to be tallied and evaluated. We look forward to bringing you future editions of JOVACET in which, perhaps, the innovations that have taken place this year in education and training will be reflected upon and our collective learning shared.

Incorporating principles of expansive learning and activity theory in curriculum design to bridge work and education contexts for vocational teachers

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ABSTRACT

The focus of this study is a development course for academic staff that is informed by activity theory and transformative agency. It is intended to help vocational and professional educators to link academic curricula to current work practices. The course content first helped the participants to develop a systematic understanding of the different purposes and contexts of educational institutions and workplaces. After that, these contradictory elements were harnessed in order to develop innovative boundary-crossing concepts and practices. The process in which participants engage in developing new possibilities for practice is termed 'expansive learning'. Through expansive learning, participants may develop 'transformative agency' for dealing sustainably with challenges in times of change. The study traces how transformative agency developed among the course participants. It argues that activity theory provides an innovative, sustainable approach to the academic development of vocational and professional educators, especially with a view to them adapting their course content to changing industry needs.

KEYWORDS
Academic staff development; vocational and professional education; activity theory; expansive learning; transformative agency

Introduction

Considerable changes have occurred in South African higher and further education since the arrival of democracy. These changes include institutional mergers, large increases in student enrolments, rapid technological change, and changes in thinking about the role and nature of educational institutions. Changes to the shape and size of universities and colleges have resulted in a broadening of the academic workforce globally, with many lecturers entering these institutions through non-traditional routes (Boud, 1999). Unsurprisingly, these changes have led to renewed interest being shown in the professional development of academic staff. While much is known about academic staff development generally, the means of supporting lecturers in vocational and professional education have been under-researched (Finlay, 2008). In this article, we report on a theoretically informed initiative to support lecturers in vocational and professional programmes. The initiative was offered as an elective course towards a Postgraduate Diploma in Higher Education Teaching and Learning. The elective course was entitled 'Work and Learning: Working across Transitions', and it was attended by a group of nine lecturers (the course participants) from the technical and vocational education and training (TVET) and university sectors. The course used a blended learning approach involving both face-to-face and online teaching.

Activity theory has been used extensively to help teachers better understand the relationships between educational institutions and workplaces (Le Maistre & Paré, 2004; Konkola, Tuomi-Gröhn, Lambert & Ludvigsend, 2007; Virkkunen, Makinen & Lintula, 2010). It was therefore considered a particularly suitable theory on which to base the research reported on in this article. The Work and Learning course design followed the principles of expansive learning derived from activity theory. Expansive learning is a process of collective learning in which groups of people attempt to develop innovative solutions to solve problems identified in society (Engeström & Sannino, 2010; Sannino, Engeström & Lahikainen, 2016). In expansive learning, the participants first identify the problems in their working lives that arise as a result of systemic contradictions (see Figure 1). With regard to these contradictions, we followed the approach that the social and material contexts of education and work are significantly different, an approach often used in activity theory studies of education and work (Le Maistre & Paré, 2004; Konkola et al., 2007). The course participants attempted to resolve these contradictions between the two contexts by formulating new, bridging ideas, which they then experimented with in practice. The blended learning process was supported by means of in-class collective activity among the course participants and through them giving and receiving feedback in the online environment. The course itself had two main outcomes:

1. The course participants were required to explain the differences in knowledge, practice and learning between educational institutions and workplaces; and

2. They were required to propose novel and innovative forms of boundary-crossing practices in their own fields.

In expansive learning, interventions intended to promote boundary-crossing and change need to develop participants' 'transformative agency' (Virkkunen & Newnham, 2013:230). This refers to their ability to theorise an existing challenge and to generate new concepts as solutions. Transformative agency emerges in different forms. Stages in its development provided the course facilitators with a lens through which, first, to examine the course participants' learning and, second, to evaluate the usefulness of the activity theory-informed approach, thus giving rise to the following research question:

> How, and to what extent, did the activity theory-informed course enable course participants' transformative agency over time?

The concept of transformative agency has been used to analyse workplace learning, as has been reported on in the special edition of the *Journal of Workplace Learning* (Engeström & Scaratti, 2016). However, the concept has not been applied or tested in studies about academic development that have focused on the transitions between work and learning. This study attempted to fill this gap.

Brief overview of the literature on staff development in vocational or professional education

The number of studies on academic staff development in higher education generally has been increasing, but less attention has been paid to academic staff development in professional and vocational contexts (Finlay, 2008). In fact, a report by the United Nations Educational, Scientific and Cultural Organization (UNESCO) claims that vocational pedagogy is 'under-researched and under-theorised' (Lucas, 2014:2). Although most of its pedagogies have not been codified, work-based learning (which predates academic learning) can be recognised by a number of 'signature pedagogies': the induction of apprentices into work practices and the development of their expertise through mentoring and feedback (Barnett, 2006:145), to name but two. Wenger's classic study was an early attempt to identify a workplace learning pedagogy, key features of which were 'situated learning', 'communities of practice', 'legitimate peripheral participation' and the importance of context (Wenger, 1999:13–15).

While much has been written about the procedural standards and skills expected of both novices and experts, many of them codified, the pedagogies required to attain these standards are in the process of 'evolution' (Viteritti, 2015:130). Accordingly, at this stage, further clarity is needed on the 'epistemological distinctions' that underpin the differences in work-oriented pedagogies (Kennedy, Billett, Gherardi & Grealish, 2015:3). For example, industries demand a closer alignment between higher education curricula and real work tasks so that the former better meet the needs of organisations and learners (Choy & Delahaye, 2009). Trede (2012) argues that, in order to shape and match professional identities, both industries and learners prefer learning to reflect real work issues. This, in particular, was the focus explored in the Work and Learning course. However, such an alignment is often complex and challenging for both academics and workplaces. It demands that students, academics, workplaces and

administrators move beyond a teaching orientation to a demonstrably effective learning arrangement by means of learning and practice that is informed by theory (Cooper, Orrell & Bowden, 2010).

In a recent study, Cenci and colleagues (Cenci, Lemos, Bôas, Damiani & Engeström, 2020) propose expansive learning as a learning theory that is both highly applicable to teacher education and one that teachers themselves can apply in their own professional practice. In the next section, the potential of expansive learning as a theoretical framework for academic staff development in vocational and professional contexts is explained further.

Theoretical framework: Expansive learning

Most forms of learning at university or college focus on learners' acquiring pre-existing knowledge and skills, often in incremental form, through engagement with texts, teachers and peers. Learners are then presented with an intervention such as a training course and are expected to apply their knowledge in a linear fashion. Where expansive learning differs is that what is to be learnt is unknown at the start of the process (Engeström & Sannino, 2011) and evolves as the participants engage with real problems in working life. Since the course participants were dealing with working life, and the problem of how to integrate it better with educational practices, the course facilitators felt that 'expansive learning' was a particularly suitable approach.

Problems provide the starting point of expansive learning and act as a first stimulus to the participants' engagement (Action 1 in Figure 1). Then the participants engage with particular thought processes (or 'tools') that help them to reshape and view problems in a new light. Ultimately, these thought processes should lead to the generation of a new concept or structure that may help the participants to deal with the problem at hand. For their part, the participants' learning involves a 'substantive reconceptualization of learning challenges' facing them (Schaupp, 2011:215). By 'reconceptualisation', Schaupp means that a shift takes place from instances of problems to a more systematic and relational understanding that is underpinned by historically accumulated contradictions.

The expansive learning actions 1 to 7 in Figure 1 are underpinned by particular instruments and tasks. An important instrument for analysis and modelling (Actions 2 and 3 in Figure 1) is the activity system (see Figure 2).

The elements of the activity system require some elucidation. The subject refers to the group from whose perspective an activity is being examined – in this case, the course participants. The object refers to what it is that the group is working towards, often in the form of a 'rough draft'. The object also provides motivation for the course participants to achieve a desirable outcome for the activity (Engeström, 1999). Subjects use tools to work on an object – for example, concepts and processes drawn from their own experiences, from those of other participants and the facilitators or, more generally, from the cultural milieu. The rules element refers to the explicit rules of the organisation and its implicit norms and cultural

values, and so they also influence what can and cannot be accomplished in or through an activity. The division of labour – who does what with what authority – also influences how work is done during the activity. The community refers to all the additional people that course participants have to interact with while doing their day-to-day work.
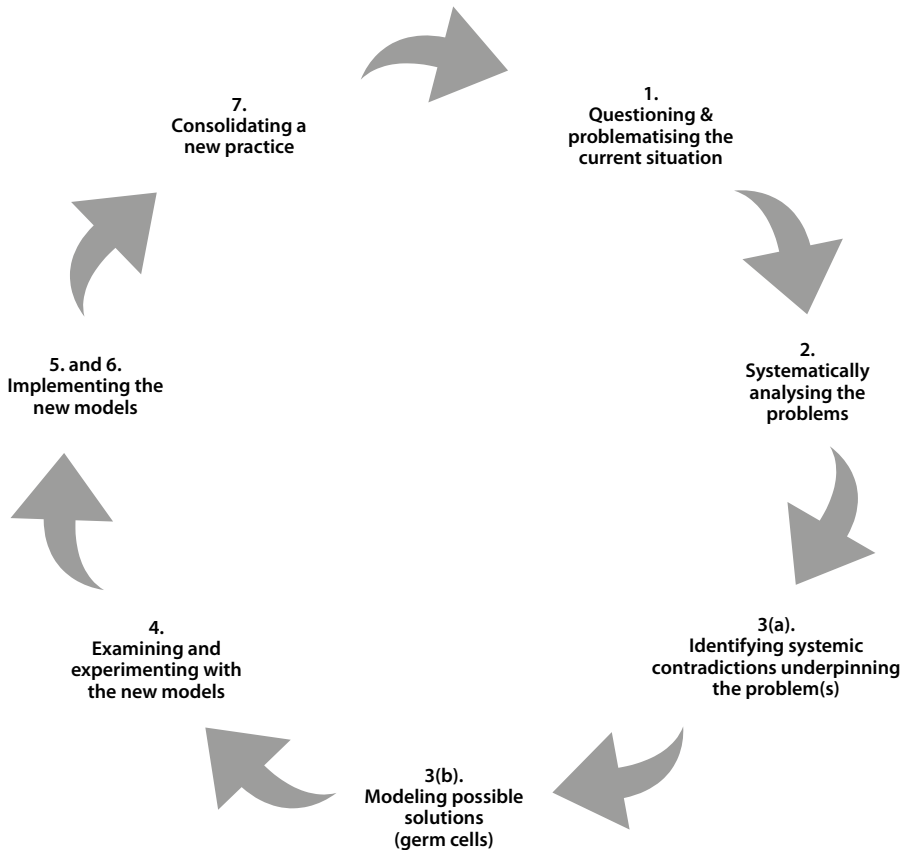
Figure 1: The expansive learning cycle (Virkkunen & Newnham, 2013)

The role of the activity system is to help the course participants to move from lived experiences and difficulties (in this case, linking the curriculum to actual work) towards a more systematic and theoretical understanding of the original issues. A key moment in this process is the reconceptualisation of difficulties as contradictions within or between elements of the system and – more importantly for this work – as significant, deep-seated and historically accumulated tensions between the different activity systems of education and work. This transfer from the experiential to the theoretical is an indicator of expansive learning. After this, the course participants attempt to identify a new concept that bridges the identified tensions and holds the potential for a new form of practical activity for the future, known as the 'germ cell' (Engeström & Sannino, 2010). The course participants then attempt to model the new concept and the way in which it may play out in practice.
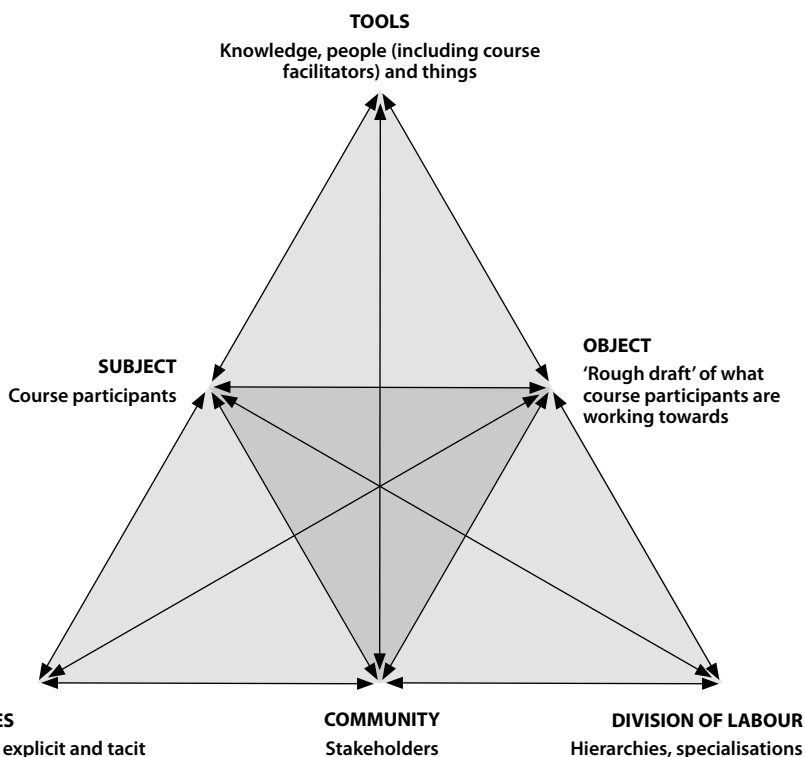
Figure 2: An activity system (adapted from Engeström & Sannino, 2010)

Expansive learning has been described as developing participants' 'transformative agency' (Haapasaari, Engeström & Kerosuo, 2016). Transformative agency occurs when individual agency becomes a more collective activity directed towards change. Englund and Price (2018), writing about academic staff development, suggest that such agency is also about developing the ability to understand one's own actions in relation to those of others and also in relation to attempts to respond to difficulties arising from this relationship.

Following the work of Haapasaari et al. (2016) and Virkkunen and Newnham (2013), transformative agency can manifest as the types listed below. Although the different types can occur at any moment in the expansive learning cycle, they can also occur in the order given below:

- **Resisting** refers to both the resistance of the broader community to forms of change and to participants' own resistance to engaging in formative interventions (such as training), which are often seen as having been imposed upon them by researcher–interventionists;
- **Criticising** a current activity and an organisation with the aim of identifying problems at work;
- **Explicating** new opportunities or potential in the activity, which may sometimes include reference to other solutions that have worked in the past;

- **Envisioning** new ways of operating that may help to resolve the problems identified;
- **Committing** to taking concrete new steps to change the activity, which may take the form of definitive statements such as 'I will … ' or 'I aim to … '; and
- **Taking action** to change current practices and so resolve the problems originally identified.

The elective course: Work and learning – working across transitions

- The Work and Learning course was a blended learning intervention that took place during an academic semester. The nine course participants were all lecturers working in the fields of vocational or professional education.Three TVET college lecturers were teaching at National Qualifications Framework (NQF) Level 5 in Small Business Development, Motor Retail and Electrical Engineering;
- One lecturer was a military officer at the officer training academy;
- The other five were university lecturers:
    – Three were from the health sector, lecturing in Emergency Medical Care and Pharmacology; and
    – One taught in a university law clinic and one in the field of transport economics.

What brought the course participants together was their mutual concern about the relevance of their courses to society and their respective industries, a concern that emerged during discussions on problems with alignment in the early sessions.

The course comprised face-to-face sessions, online meetings and individual consultations. The facilitators introduced the participants to concepts in activity theory, particularly the idea of expansive learning, third-generation activity theory, and boundary-crossing.

The course itself was aimed at helping the participants to become aware of the activity systems that they were working within and across. The intention was for facilitators and participants to collectively develop strategies and tools to support expansive learning in various vocational and professional fields. It was hoped that the participants' engagement would result in creative rethinking about how students might be better prepared for their various occupations or professions. Such 'creative thinking' has been reported more generally in expansive learning initiatives (Sannino, Engeström & Lahikainen, 2016).

Using the expansive learning theoretical framework (Figure 1), the participants were first asked to come up with what they believed to be a major disjunction or difficulty between what they were teaching and what their students were expected to do in practice. The participants were then interactively introduced to activity theory analysis. This was followed by a detailed exploration of work–education differences, based on the work of Eraut (2004) and Le Maistre and Paré (2004).

After that, the participants were required to perform an activity theory analysis of their own classroom activities, on the one hand, and an analysis of a typical workplace, on the other.

For example, activities could be analysed as elements in an activity system, such as subject, object, tools, rules, and so on – see Figure 2. The different systems were then compared and the most glaring contradictions were identified. For example, were any of the contradictions primarily between the purpose of education and that of work? Or between the rules of the classroom and those in workplaces? Or between the resources available in the classroom and those available in the workplace? Through this process, the course participants were encouraged to question the ways in which their students were being prepared for work in the current South African context; and, through such questioning, they were being guided to search for solutions to the problems that they identified and to model solutions that could be implemented. The next task was for the participants to situate the identified disjunctions within these major systemic contradictions. Once they had completed this task, they could proceed to seek a bridging concept or process that could possibly resolve the disjunction. This task was performed with varying degrees of accomplishment, as illustrated in the participants' vignettes.

Although transformations in higher education do not take place easily, the intervention that this course constituted was guided by Engeström's (2009) idea that any change, no matter how small, could become the 'germ cell' for greater transformation where conditions permit this.

Evaluation research design and methods

In evaluating the Work and Learning course, we drew on theoretical and methodological tools to determine the extent to which the new course was able to guide the participants' thinking about how to prepare their students better for the world of work. The research design comprised a 'theory-driven evaluation' (Chen & Rossi 1980; Coryn, Noakes, Westine & Schröter, 2011). In their classic study, Chen and Rossi (1980:67) argue that 'common sense understandings of social problems and their treatments, without considering the appropriate social science theory' are unlikely to build knowledge or improve programmes. In a meta-analysis of theory-driven evaluation research, Coryn et al. (2011) found that theoretical approaches were central to knowledge-building in evaluation research. The contribution of programme evaluation to knowledge-building is enhanced when the programme is innovative, particularly when the evaluation of an innovative programme includes contributions by course evaluators, course facilitators and course participants in the 'co-creation' of knowledge (Lam & Shulha, 2015). Hooley and Moore (2005), in their evaluation of an innovative programme for pre-service secondary teachers, explain that a theoretical approach to evaluating an innovative programme is crucial if the evaluation is to provide meaningful data for programme improvement and make a meaningful contribution to knowledge. In much evaluation research, as the examples above illustrate, there are intersections between research and practice, and between researchers and practitioners. This was the case in this study. Virkkunen and Newnham (2013) refer to this more integrated researcher role as that of a 'researcher–interventionist'.

Data-collection methods

The main source of data was the final summative assignments submitted by the course participants. In this study, six assignments are represented as shortened vignettes that highlighted the course participants' expansive learning journeys. Vignettes were used because the assignments themselves were too long to represent in total. Vignettes are typically used in education research to highlight main ideas in shortened form, but also as a means of ensuring that participants' contributions are anonymised (Bradbury-Jones, Taylor & Herbert, 2014). There is considerable support in research methodology literature for the 'relevance of vignette work for teacher education and system development … including its application in teacher qualification programs and professional learning communities' (Schratz, Westfall-Greiter & Schwarz, 201:123). There is also support for the use of vignettes as a tool for exploring cultural identity (Crafter, De Abreu, Cline & O'Dell, 2015).

In addition, an external evaluator was appointed to evaluate the Work and Learning elective course. She was requested to observe the face-to-face sessions and the online interactions, to interview the facilitators and the course participants, and to study the assessment tasks. The external evaluator's extensive and detailed report (Wright, 2017) and the data on which it was based were drawn on for the purposes of this study.

Data analysis

The six vignettes were analysed against the types of transformative agency described earlier, and these were, in turn, matched to learning actions in the expansive learning cycle (Figure 1). Even though the class size was small, this was counter-balanced by having a strong methodological framework through which we were able to undertake a detailed analysis of the data gathered, as is typical in much qualitative research in higher education (Cousin, 2009).

Research findings

Exemplars of resistance from the external evaluator's report

All the course participants struggled with the theoretical concepts presented in the course and there was clearly resistance to this aspect. An often-expressed sentiment in the course evaluation (Wright, 2017) was the following:

> The theoretical aspect took a lot of reading and thinking to figure it out[;] the contact session did not really do that very well, as I look back now, or it could not address application/transfer issues to the actual assignment.

> I was confused by the terms and coming up with the 'germ cell' was a bit of a challenge.

The course participants not only found the theory challenging, but also questioned why theory was necessary in a course that was focused on practice or linking theory to practice. This was particularly the case for those who came from more vocational backgrounds (workplace-integrated learning learning or WIL):

> Make WIL more practical. Do not focus so much on theories. Structure the course and assignments in a practical way.

> Make this course a practical application. Do not make WIL a theory-based course.

> More can be done to make the course easy to understand and follow. Consider individuals who are directly from a practical and technical background.

Despite the initial resistance, as the course progressed, participants found that they were able to overcome the difficulties posed by the theory:

> Although the content is fairly focused on activity systems and the development of a germ cell to bridge the gap between the two systems, it did involve a lot of reading, as the content is completely new. However, once you did the reading, it became much easier to see the value of that reading and assimilate it into the tasks that were given.

While the external evaluation data focused on the participants' resistance to the intervention, the assignments, represented below as vignettes, provided data in support of the development of other forms of agency. The following six vignettes are synopses of the main responses to the learning actions of the expansive learning cycle, namely: problem-raising and questioning the current situation, analysing it and proposing new models in response to identified systemic contradictions.

Motor Mechanics (TVET college)

The problem outlined is becoming a common one in the further education and training (FET) sector: the inadequacy of students' college preparation for apprenticeships in workplaces, here within the field of Motor Mechanics. The problem is exacerbated by the available laboratories, which used to be for all students but are now being booked for a small, dedicated stream, one which attracts funding and status from the government. Thus the attempt by the course participant is to construct the in-between 'entity' to assist the majority of college students to transition more easily from college to apprenticeship.

In the college, there is the obvious problem of chalk-and-talk, 'the traditional method of lecturing where lecturers act like a church pastor dictating to students'. Teachers teach towards a more theoretical test and learners have limited opportunity to engage both cognitively and practically with the content and skills taught. As this course participant suggests:

> … This is because vocational education is taught as a collection of rules, procedures, theorems, definitions, formulae or applications that need to be unthinkingly memorised, and then used in the workplace. Learning to do is more important than knowledge and meaning. This practice has resulted in a narrowing of the curricula … .

The problem of school-to-work transitioning is further exacerbated by changes in the motor industry. These include the relatively recent emergence of a plethora of new car models equipped with new electromechanical technologies. But the classroom 'tools' (models, teaching aids) have not kept up with these new developments and workshops where some of this transitioning may be facilitated are not available to students. Workplaces, furthermore, have organisational cultures and rules of operating which newcomers need to acquire but which cannot be learnt in class. Classrooms, for instance, highlight individual rather than collaborative achievement and so may be at odds with workplace cultures.

What, then, is the new vision for the programme? There is obviously the return of practical workshops which would need to happen, and also the upgrading of classroom models, but these developments would be hard to facilitate with limited resources. If it is not immediately possible to expose students to more authentic practice, then one interim idea would be to ensure that teaching staff are exposed to recent developments in industry so that they would be able to bring both advanced technologies and some idea of current organisational culture into the classroom.

Pharmacology (university)

In pharmacological studies, some of the same issues of disjunction between university teaching (lectures, notes, and so on) and pharmacy practice also apply. This disjunction creates a problem space between the two activity systems and so a new, shared object is needed between them. The course participant highlights a fundamental difficulty in professional courses, that is, that the curriculum becomes an end in itself rather than a means to empower the new professionals in society through providing them with relevant knowledge and skills. In addition, the problem is made more complex here, because the tightly controlled pharmaceutical industry has not kept pace with the changing, more general health role that pharmacists are expected to play in the community – an issue that her colleagues agree with. For the majority of workplaces and for the professional body, the object is dispensing medicines following the correct protocols, in an often isolated fashion. In practice, this is often about 'crowd control' (dealing with masses of orders and people) and acting solely as a dispenser of medicines.

But more broadly in South Africa, there is a new object for all health professions: that of improving healthcare for the community. And this involves collaboration between healthcare professionals in order to realise this object. However, the pharmacy is often left out on a limb in this respect. By understanding this historically accumulated tension in changing times, the course participant comes up with two new bridging concepts that may help to realise this

new approach. The first is that of the 'engaged pharmacist' who engages both with other health professionals and with the public, not just as a medicine dispenser but also as a health advisor. However, the problem of the pharmacist-as-medicine-dispenser may still exist, so an additional bridging tool is also needed. The course participant proposes a new tool, a medicine evaluation protocol that will extend dispensing into medicine usage and the pharmacist may then engage with health issues that may arise here.

Labour Relations (TVET college)

In Labour Relations, as with Pharmacology, the course tends to focus on completing and assessing the curriculum rather than on its relevance to the workplace, thus setting up a disjunction between the two sites. The course participant refers to the 'student bubble', education unto itself, and also what he refers to as the 'culture lag' between changes in industry and changes in the college curriculum – the curriculum, he suggests, may be out of date.

The course participant first proposes that there is an economic benefit to companies having students in the workplace, as in the 'Master' programme in Germany. His point is not about direct benefit, but that, when a student works in industry, industry can gauge his or her suitability for future employment. Moreover, the student can keep a logbook of what he or she is doing at work and this can be used as a bridge to help enrich the college curriculum and to keep it more up to date. In their logbooks, the course participant suggests, students will be able to encapsulate both openly and easily observable or coded, and less observable and uncoded, elements of industry culture. Therefore, the logbook should serve as an in-between tool that staff can use to help them take into account, and remedy, the culture lag between college and industry.

Legal studies (university)

Does the university curriculum really prepare students for working as legal practitioners? This is the question raised by the participant. Again, the issue of the curriculum being the focal point of the university rather than its relation to professional practice beyond the university, is raised. Furthermore, the rules of the curriculum concern, mostly, assessments, whereas those of the legal profession are about the ethics of practice. The objective of university courses is often to pass examinations, whereas, at work, it is to litigate in the best interests of clients, supporting them through representation with competent legal advice and action as opposed to theories, methods, tools and learning. There appear to be quite dramatic differences. In the opinion of the course participant, there is, consequently, a need to translate the theory and learning in the curriculum into practice. Both theory and practice need to be maintained, however, to 'bring a sense of the workplace into the curriculum while maintaining the theoretical aspects'.

The course participant puts forward the need for a beginning, abstract concept that carries the 'code' of what is finally needed in the legal workplace and suggests the concept of 'advocacy' here. Advocacy is the art and skill of representing another person's interests in

some form of formal judicial process. Acquiring advocacy skills can be supported in two ways: through working in the law advice unit at the university (a free advice service for the community and university) and through emulating legal practice in moot (mock-up) courts. Through engaging in these activities, students are able to better comprehend the connections between theory and practice. This is because they can engage successfully in such activities only through acquiring substantial knowledge of the law. However, these activities (legal advice and moot courts) are currently either elective or voluntary.

In response, the course participant has been moving to make it mandatory in the future for all students at least to work in the advice unit, and he has presented this proposal to the Faculty Board. In addition, the lecturer has sought comment on his ideas from a British colleague. He also suggests an additional tool to promote this theory–practice project: the adoption of a problem-solving approach to legal education.

Transport studies (university)

In transport studies, the main issues are, again, first, that the university curriculum has not been keeping up with workplace changes and, secondly, that different industrial sectors operate under different norms, standards and guidelines and that one course cannot cover this variance. Sometimes, these changes in the workplace have occurred organically, whereas the university sits with prescribed regulations that it continues to teach. Any curriculum needs to prepare students for future work, but how can lecturers both keep up to date and prepare for variances? Furthermore, workplaces are often complex and practices cannot be gleaned simply by brief observation, because they have institutional cultures and memory as well as more overt rules (therefore both implicit and overt rules) with which to contend.

One way to help students and academics to navigate these difficulties, the course participant suggests, is to see work as a 'zone' of learning and students as somehow entering a boundary zone where they will encounter new activity. The participant then proposes the concept of a university, work and community meeting place, or an advisory body, in which information can flow both ways. Students, too, would be included here. He goes further by trying the idea out with his university colleagues to see what suggestions they have. They suggest that the advisory concept can be extended to include workplaces providing specific additions or amendments to the curriculum and providing opportunities for students to conduct on-site visits. There is also a nagging issue: that of students not being adequately prepared in employing quantitative techniques as a component of their studies, which the advisory body could deal with.

Military Academy (university)

This course participant is a Military History lecturer at a university academy for serving military officers. Officers take time off (up to three years) to study but gain no advantage in their prospects for promotion, despite the Defence Force's human resource (HR) management policy having been reviewed recently. The revised policy recommends that officers' promotion

prospects be enhanced by their engaging in academic or vocational studies. There are, furthermore, significant complications associated with the different cultures and the power relations between the academic project and the conventions of the military establishment. Not least of all, these are manifest in the physical location of the university and the recognition of its staff in the military hierarchy. Then, at university, critical questioning is often required, for example, as in the teaching of Military History. But this feature of academic studies clashes with the organisational culture, where following orders is more typical of military workplaces. In addition, there is the matter of hierarchy. At the academy, officers may be taught by civilians or by more junior officers who have higher academic degrees, and this tends to set up a tension between epistemological authority and military authority, most notably in the setting and assessment of WIL assignments.

The proposal for a bridging device was, in this case, for the Military History lecturer on the course to find ways, first, to promote and showcase his teaching in the workplace and among the 'generals', and, secondly, to link the conceptual models and case studies with those that are complementary to the more practical aspects of military training. These measures would, he foresaw, narrow the distance between the historical, conceptual and applied aspects of military training and practice. Another proposal he suggested would be to push for the HR policy recommendations arising from the recent review to be implemented without delay, so that academic study and qualifications could be fully recognised and aligned to career paths in the military, and promoted as such.

Discussion and analysis

The vignettes are analysed against the six types of transformative agency (resistance, criticising, explication, envisioning, committing, and taking action) and the learning actions shown in Figure 1.

Resistance

Resistance, as a form of transformative agency, stands out in the participants' experiences on the course. Resistance first emerged during the evaluation report (Wright, 2017) as initial resistance to the activity theory that underpinned the elective transitions course. The participants struggled to understand why a course about practice should be so theoretical. In general, the resistance of academic staff to teaching and learning theory is well known in the academic development literature (Quinn, 2012), possibly because academics focus more on their disciplinary norms rather than on how students learn them.

The theoretical approach pursued by the course facilitators, which the course participants initially resisted, was something thrust upon them. Similar forms of resistance have been observed in teacher education, where teachers resist engaging in expansive learning (Guzmán, 2018), and in workplaces, where management attempts to influence changes in response to difficulties (Haapasaari et al., 2016). Such resistance may set up an information-seeking

dialogue with managers or facilitators, or engage participants in reflection on the problem, and so support their development of transformative agency (Sannino, 2010).

Judging by the comments in their evaluations, after reflection, the participants endorsed the need for theory and the expansive learning approach. In retrospect, a more practice-oriented approach to activity theory was needed, based on case studies on its use in school-to-work transitions (Wright, 2017).

As Haapasaari et al. (2016) and Virkkunen and Newnham (2013) remind us, resistance to change (in dealing with accommodating transitioning) can also come from within one's own institution or from external sources. The TVET college course participants, for example, spoke of their institutions allocating resources to more well-funded programmes rather than supporting transitions in those programmes that most needed them. In the case of pharmacology, workplaces tended to cling to the more traditional 'medicine-dispenser' role rather than that of an integrated medical professional. Questioning such moves can develop into a useful dialogue between lecturers and these groupings.

Although not directly referred to, it can be inferred that workplaces needed affordances[1] for students' transitioning learning. 'Affordance' here refers to the type of support offered by expert practitioners to help students with their workplace learning, and this can be both positive and in some cases negative, effectively constraining student learning (Billet, 2009:835).

Criticising

Criticism of the current relationship between the educational institution and the workplace revolved round the lack of articulation between them. All the course participants were critical of the current relationship of their educational institution to relevant workplaces. This was not surprising, because they were asked, as part of the course, to raise the difficulties being experienced. In most cases, this was because the institution focused on matters it considered important to itself, the curriculum and assessments rather than on the complex nature of workplace-based learning and change. These difficulties were often quite nuanced: for example, where the regulatory authority extolled rigid and discrete ways of operating that did not reflect international models of professional practice.

Explicating

'Explicating', as a form of agency, refers to an awareness of new opportunities, that things can be done differently, often with reference to past problem-solving success (Virkkunen & Newnham, 2013). Explication was one of the least-represented transformational types in the

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1 Affordance: For example, design students are encouraged to contribute to a work team tasked with designing a new insignia for a fruit juice company, rather than being assigned to more low-level procedural work.

course participants' texts. One exemplar drawn on was the German tradition of high-level apprenticeships that bridge the university–workplace divide. Another example was the 'Defence Review', which could raise the status of academic studies in a military environment.

Envisioning

Along with criticising current practices, envisioning new possibilities to bridge the institution–work divide was a strongly represented form of agency. The course participants proposed new concepts (e.g. the engaged pharmacist, advocacy), bridging structures (e.g. advisory bodies) and bridging devices (e.g. workbooks, working in community advice centres). This is not surprising, because the aim of the course was to provide the course participants with the means to suggest new bridging possibilities for the future.

Committing

Commitment, as a form of agency, was more difficult to discern from the course participants' written assignments or from their evaluations. Commitments are typically expressed in terms of speech acts, or as verbalised intentions for the future, such as 'We intend …' or 'We are going to …' (Virkkunen & Newnham, 2013:233). A possible reason for the absence of commitments was that they were not specifically asked for in the assignment; nor were the participants asked to share any future consequential actions that had actually been taken.

Taking action

Regarding future action, there was only one example: a proposal to make undergraduate community advice centre work mandatory was taken to a university Faculty Board. The same course participant also expressed a commitment to assessing the impact of student engagement in moot courts on their theoretical and procedural learning. Although important, these types of future action typically occur after the completion of the initial phases of the expansive learning cycle as 'experiments' (Engeström & Sannino, 2010), a point not generally reached in a relatively short course.

Transformative agency and expansive learning

The expressions of agency exhibited by the course participants occurred mainly in the first three learning actions of the expansive learning cycle: questioning, analysing and creating a new model (Figure 1), because the nature and extent of the course could only propose ways in which difficulties may be resolved. An intervention provides an impetus for participants to develop their agency (Haapasaari et al., 2016). Furthermore, it is possible to locate these expressions of agency as emerging from contradictions in the activity system itself (Figure 2).

The initial resistance to the theoretical approach to the course can be understood as a contradiction in the subject element of the system. For professional or vocational practitioners,

'theory' is something that is seen as less relevant than practice. The role of the course facilitators was then to show the course participants how theory could be put to use so that they might develop their agency to resolve curriculum problems.

When the course participants spoke of the focus of the curriculum being on the institutional needs (curriculum and assessment) rather than on what is needed for the particular occupation, the issue lies with the object of the activity. In the terminology used by Virkkunen and Newnham (2013:18), there is 'an object–tool reversal'. The tool – for example, the curriculum – that is aimed at facilitating the achievement of a broader societal goal (i.e. developing young professionals) is seen by the educational institution as an end in itself. Righting this reversal can result in course participants becoming aware of the opportunities for change in creating better linkages between the curriculum, pedagogy and future workplaces.

In discussing the opportunities for change, the course participants often referred to embedded systems of influence within either the educational institution or the workplace. For example, in the case of pharmacology, the professional body plays a pivotal role in determining the focus of the curriculum, which may hamper the introduction of more societally focused educational practices. In legal studies, acknowledging and possibly recruiting the Faculty Board to buy into new initiatives appeared to be helpful. In the colleges, the influence of government funding bodies is disparate, and this may militate against developing new initiatives; but, at the same time, this situation may motivate the course participants to exert their agency. These factors can be understood as problems arising from within the division of labour, with some community members having more influence than others, often to the detriment of boundary-crossing curriculum initiatives.

Conclusion and implications for future courses

In examining the present course, were we able to provide its participants with the means to understand the transition between curriculum and workplace? Were we able to help the participants to transform everyday experiences and issues into more systematic and theoretical understandings? Did course participants gain transformative agency, that is, the agency to transform experiences into new ways of thinking that are sustainable over time?

Although their work may have been uneven, and the participants initially struggled with activity theory, overall we feel that we can make the claim that the course participants were supported in the development of their transformative agency. Part of our claim is based on what the participants were able to do in their assignments, that is, to 'reconceptualise' experience and create new possibilities for change in their practices. In addition, as the external evaluator wrote in her report after observing and interviewing the participants:

> During the process [of the course,] participants developed a sense of personal agency and intended to take their work forward into the 'real world', beyond the course. Those who did well had not progressed without struggles, but seemed to

> have tried to help themselves to cope to overcome those challenges, e.g. [by] taking notes on new concepts, reading diligently to understand theory, etc. The outstanding work of some of the participants was highlighted by the external examiner, who recommended that their work be developed for publication. (Wright, 2017:51)

In discussion with the external evaluator, a course facilitator raised the issue of the scope of the problems that the course participants were dealing with, and the theoretical tools required to deal with this:

> Also, although participants had begun by identifying a relevant, practical (concrete) problem, some of these problems had been 'very big' for honours level; and the escalation of these problems to the abstract (e.g. in the notion of a contradiction) could have been eased if there had been more scaffolded guidance for participants, with 'accessible' examples illustrating troublesome concepts, along with guided readings (Wright, 2017:46).

The participants did struggle with activity theory, in particular with the contradictions and their resolution through bridging concepts. A more structured approach to developing the course participants' theoretical understanding, and a greater use of practical exemplars, was therefore suggested by the evaluator. The course facilitators should also have provided more scaffolding for the course participants' assignments. Furthermore, conceptual difficulties made giving and receiving feedback problematic. However, the course participants reported on learning how to understand and resolve curriculum problems in a more systematic manner through using activity theory, and therefore gained a sense of greater agency in their teaching and curriculum design.

The extent to which the commitments and actions expressed actually bear fruit in the long term could be followed up only through longer-term tracking of the course participants (Haapasaari et al., 2016). We believe this to be a limitation of the study, because on-the-ground change may occur only long after the intervention itself (Virkkunen & Newnham, 2013). This could create difficulties for more longitudinal reporting. At the time of writing, however, one participant had used their learning on the course to develop a teaching portfolio and to submit a scholarly article for publication on university and work transitions.

The use of expansive learning to develop the course participants' transformative agency, while useful in professional or vocational education, need not be restricted to this sector alone. As Englund (2018) and Englund and Price (2018) have highlighted, developing the participants' transformative agency in a curriculum is also important in times of transition at universities. Such an approach could provide a new way of thinking about the development of the academic participants and also a new line of research into academic development.

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Developing a WIL curriculum for post-school lecturer qualifications

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ABSTRACT

The South African Department of Higher Education and Training (DHET) published two policies in 2013 and 2015 respectively, on professional qualifications for lecturers at Technical and Vocational Education and Training (TVET) and at Adult and Community Education and Training (ACET) colleges. These policy frameworks require lecturers in TVET and ACET to complete work-integrated learning (WIL) in two settings: teaching (eg in classrooms, laboratories, workshops) and industry-based (eg factory, work sites, offices). Whereas the notion of industry and specialised workplace WIL for TVET and ACET lecturers was welcomed in certain circles, its inclusion in the ACET policy and the associated qualifications were not uniformly welcomed. Antagonism emerged primarily from some universities planning to offer ACET lecturer qualifications, ranging from insecurity about matters related to its implementation to outright rejection. This article draws on the theory of critical discourse analysis (CDA), reflecting on and debating the challenges that emerged during the development of the national curriculum frameworks for industry and the specialised workplace-based WIL component of the qualifications. Three discourses emerged: the first relates to a conflict between adult and community education with the discourse on industry-based WIL; a second relates to differences of opinion about what constitutes appropriate specialised workplace-based WIL for trainee ACET lecturers; and the third relates to the nature of ACET. It is argued that it differs from other forms of education and should not be subordinated to the 'dictates of the state and capital'.

KEYWORDS
Work-integrated learning; adult and community education and training; work placement; education–labour market alignment; discourse analysis; teaching; teacher industry placements

Introduction

Between 2011 and 2015, the South African Department of Higher Education and Training (DHET), the state department responsible for teaching polces, promulgated three policy frameworks. One was intended for school teachers (South Africa, 2011); a second was developed for technical and vocational education and training (TVET) college lecturers (South Africa, 2013b); and a third was geared to adult and community education and training (ACET) educators and lecturers (South Africa, 2015b). Work-integrated learning (WIL) is an element of all three policies and is intended to underlie the construction of teaching programmes (South Africa, 2011:10; 2013b:10; 2015b:11–12). It is also the term used to describe the workplace-based element of all three programmes. The WIL element for school teachers (South Africa, 2011:10) involves spending time at a school, colloquially known as 'teaching practice'. The policy frameworks for TVET (South Africa 2013b:19) and ACET (South Africa, 2015b:13–14), however, require both teaching practice and WIL experience at a workplace in which a student lecturer's specialisation is practised.

South Africa has a well-developed history of teacher education and placement of student teachers in schools but not of the development of TVET or ACET lecturers. Historically, university education faculties and schools either developed TVET lecturers through specially designed programmes or incorporated their development into conventional (school) teaching programmes. Educators or lecturers teaching in adult and community education contexts also either completed conventional education programmes for school teachers or specifically designed adult education qualifications offered through university adult education units or schools of education. The policies on TVET and ACET lecturer qualifications (South Africa, 2013b; 2015b) are intended to produce professionally qualified lecturers to serve TVET colleges and the newly created community education and training (CET) colleges. The development of TVET and ACET lecturer qualifications relied on the existing expertise in TVET and adult, community and adult basic education and training being adapted, in addition to the school teacher training that existed at universities.

The absence of an existing practice in specialist workplace placements for TVET and ACET lecturer programmes led the DHET, with European Union co-funding, to commission a research and development project to develop a curriculum framework for the industry or specialist workplace WIL component in order to enable the 'effective delivery of the work-integrated learning (WIL) component of TVET and ACET lecturer qualification programmes' (CPUT, 2015:2). This project was implemented between 2017 and 2020. It formed part of the DHET's Teaching and Learning Development Capacity Improvement Programme (TLDCIP) for the College Lecturer Education Project (CLEP). The TLDCIP CLEP WIL project was an inter-institution research and capacity-building project; it aimed to develop knowledge, competency and resources that would support schools and faculties of education (the intended providers of the qualifications) in implementing the industry or specialist workplace WIL component

of the initial TVET and ACET lecturer qualifications. The curriculum framework was intended to serve as a complete guide for providers of the TVET and ACET lecturer qualifications. It included:

• An analysis of the policy;
• A summary of the literature on the topic of industry or specialist workplace-based WIL;
• Outcomes and assessment criteria for each initial lecturer qualification;
• Student materials; and
• Implementation guidelines for providers.

The project was managed by the Cape Peninsula University of Technology (CPUT) and was implemented jointly by CPUT and the Swiss-South African Co-operation Initiative (SSACI).

The plan of the TLDCIP CLEP WIL project was to develop a single curriculum framework for the industry or specialist workplace WIL component of both TVET and ACET lecturer qualifications. But the debates and antagonisms surrounding this element in the ACET qualifications resulted in a separate curriculum framework eventually being developed for each set of qualifications. The curriculum frameworks for the TVET and ACET industry or specialist workplace WIL were developed through six focus-group exercises attended by representatives from universities tasked with implementing TVET and ACET lecturer programmes. Some of the focus groups were also attended by DHET officials, TVET and CET college staff, and individuals representing adult education and community development concerns.

Because the end products were determined through a collaborative process and each focus group included new participants, an exploratory and developmental research approach was used that applied transformational learning theory in an action-research process. However, the aims and outcomes were the result of a combination of both cooperation and contestation, elements of which were never resolved.

The success of the TLDCIP CLEP WIL project clearly relied on the acceptability of its outcome to the project funder, to the DHET, and to the institutions involved. These institutions' acceptance of the project's outcomes was a consequence of the project's acceptance by the programme champions represented in the focus-group exercises. The outcomes, in turn, provided the programme champions with materials with which to incorporate the collectively developed outcomes, assessment criteria and materials into their institutions' curriculum design documentation successfully. The outcomes also helped the champions to defend the developed curriculum documentation to the institutions and also to the three national registration bodies: the Council on Higher Education (CHE), the South African Qualifications Authority (SAQA) and the DHET.

For those who represented TVET lecturer programmes, the project's intention was largely acceptable, primarily because the idea of the placement of TVET student lecturers in

industry as part of their formal preparation was generally accepted. For a significant number of people representing potential ACET lecturer programmes, however, the formal inclusion of specialist workplace placements in ACET was questioned because it was felt that this ignored community education's broader role, which included providing

> … nonformal programmes in a wide range of areas, on a 'needs' basis, aligned strongly to local contexts, and to employment and community which are entrenched in Social Justice. (CPUT, 2018)

This article provides a reflective analysis of both the accord and the discord that occurred during the development of the national curriculum framework for industry or specialised workplace WIL for the TVET and ACET lecturer qualifications. An area of both accord and discord related to the purpose of specialised workplace-based WIL, the nature of the workplaces that would be suitable hosts for it, and, for some, even the inclusion of this requirement in the policy. While different interpretations, resulting in disagreements about the purpose of workplace-based WIL, could be ascribed to individual differences, problems related to the nature of workplaces and the inclusion of this requirement in the policy reflected broader views. Underlying them are views on the power of the state, academic freedom, and the purpose of education and qualifications. And they are tied to the way in which education is understood, including its purpose, the types of programme that should be offered, and what this means for teacher education aimed at different sectors. The aim of the article is therefore to provide information on the complexity of the context in which adult and community education is provided that has until now not been recorded; and also on its implications for industry or specialised workplace WIL for TVET and ACET lecturer qualifications.

Brief historical review of the literature on specialised workplace placements for lecturers

Historically, work placement as a form of learning has been associated with vocational trades, primarily those in the building trade, and some professions, including medicine and teaching. Arguments about the placement of teachers in workplaces associated with their teaching specialisations have surfaced periodically since the 1990s, but date back to the 1970s (Wilson, Pirrie & McFall, 1996:18). These have arisen primarily among vocational subject specialists, but they have also been pertinent to certain subjects, such as those in the natural sciences, which have social applications. Work placement for teachers is an international trend that, Wheelahan and Moodie (2012:15–16) argue, is aimed at professionalising the teaching workforce in vocational education and training (VET) as part of an attempt to enhance the qualifications of vocational teachers, but also in the interests of improving continuing professional development.

Reported or published work placements for teachers tend to be limited either to projects or to the establishment of state and quasi-state-based entities. In the United Kingdom, the 1990s saw the coming into existence of teacher placement services (Wilson, Pirrie &

McFall, 1996:18–19) and the Learning Skills Council (Ireland, Golden & Spielhofer, 2002: 2–3) that resulted in 'professional development placements' (PDPs) for teachers. At the same time, the embryo of a discourse promoting teacher placements in commerce and industry emerged. In Australia, similar arguments related to the benefits derived from what in that country is known as 'teacher industry placement' (TIP) (DoE, 2012:4). The Teacher Industry Placement Scheme in Australia is a state-supported endeavour that is largely aimed at improving the skills of employed vocational lecturers. TIP gave rise to the development of at least one conceptual model (Schüller & Bergami, 2008; Bergami, Schüller & Cheok, 2009; Bergami, Schüller & Vojtko, 2010; Schüller & Bergami, 2011): a teaching-in-industry model based on the communities of practice (CoP) model developed by Lave and Wenger (1991).

In South Africa, the challenge of the need for 'up-to-date workplace expertise' (South Africa, 2008:6) was raised in the draft national policy framework for lecturer qualifications and development in further education and training (FET) colleges. Such workplace expertise was then included in the policy frameworks for TVET and ACET lecturers as a requirement for the initial qualifications (South Africa, 2013b; 2015b). With the aim of updating the workplace skills and competencies of practising TVET lecturers, between 2014 and 2016, the Education and Training and Development Practices (ETDP) Sector Education and Training Authority (SETA) funded the SSACI with the purpose of implementing the WIL for Lecturers Project. This project involved short placements for TVET lecturers in workplaces related to their areas of specialisation (Smith, 2017:6). In 2016, a conceptualisation of industry-based WIL for TVET lecturers was published (Van der Bijl & Taylor, 2016) using data from the ETDP SETA–SSACI project within frameworks developed from the TIP programme and other applicable international models.

Lecturer placement in business and industry has largely been aimed at vocational teachers who are teaching in technical and vocational education contexts. But the Organisation for Economic Co-operation and Development (OECD) also makes a case for this in community education contexts in its issue paper, Lifelong learning for adults in South Africa: The role of community education and training (OECD, 2018:85). It argues:

> In the case of vocational subjects, it is important that teachers have relevant experience in their field … . It provides lecturers with a context for their teaching, and increases their confidence in teaching for their occupation. In line with South Africa's proposed reforms for TVET colleges (Department of Higher Education and Training, 2012[:20]), international experience suggests that vocational lecturers and teachers in all institutions, including the CET system, should be encouraged to spend time at the workplace.

This statement supports the argument for transferring to community-based education the industry or specialised workplace WIL for lecturers associated with vocational education. The articulation of this idea has now become enforceable through the promulgation of the

Policy on Minimum Requirements for Programmes Leading to Qualifications for Educators and Lecturers in Adult and Community Education and Training (South Africa, 2015b).

Theoretical and methodological considerations

The project developed what the reports on its outcomes called a 'comprehensive curriculum framework' (Van der Bijl & Taylor, 2019; 2020): one for the TVET lecturer qualifications and another for the ACET lecturer qualifications. The comprehensive curriculum framework for each set of qualifications included:

• A précised summary of the policy requirements;
• An analysis of related international literature on the topic;
• Outcomes and assessment criteria for each of the qualifications included in the policy;
• Recommended student materials; and
• Guidelines for implementation.

The comprehensive curriculum framework was developed from a combination of literature reviews done by the project's primary researchers, the CPUT and the SSACI, and a series of focus-group exercises. An exploratory and developmental research approach was applied, because most of the universities that had intended to be involved in the project had not finalised their decisions on whether to offer the new lecturer qualifications. Those institutions that had, assigned middle-level curriculum specialists to the project, some of whom were close to retirement or the institutions were in the process of appointing new staff. All of those involved in lecturer qualifications were invited to participate in the project focus groups, as they occupied posts related to developing programmes for lecturers. The data were collected and analysed through the use of an action-research methodology, using what Saunders, Lewis and Thornhill (2009:240) call a 'snowball sampling mechanism'. An action-research approach was applied because, as McNiff (2002) has argued, it provides a practical way of looking at work and reflecting on it. Snowball sampling was the most viable mechanism for the project because it made it possible to include an increasing number of participants while universities finalised their programme plans and staff compositions. As the project progressed, the number of participants increased from fewer than 20 to in excess of 40.

A discourse on the challenges faced by this particular project is to be found in the discourse on education–labour market alignment (LMA). LMA comprises those

> … activities and related outcomes with the goal of ensuring that higher education institutions graduate the correct numbers of graduates with the necessary skills for the job market in a way that supports students' career goals and is consistent with institutional mission and economic conditions. (Cleary & Van Noy, 2014:3)

LMA, they argue (2014:3–4), requires 'an alignment of employment vacancies and graduate skills'. They further argue that LMA is the result of a 'process of balancing complex

stakeholder needs, economic conditions, and other factors' and requires collaboration 'at different institutional levels', across 'different institution types' and involving different 'alignment activities' (Cleary & Van Noy, 2014:6–9). One of the alignment activities they call 'work-based learning', a synonym for WIL.

The alignment discourse is not limited to an alignment between individual higher education institutions and their local markets. The World Bank's (2017:x) report expresses its support for the alignment of its financial-support mechanisms to regions of the world and, through projects, to countries for the disbursement of funds to their universities. The expected alignment is with the 'World Bank's approach and focuses on access and equity, relevance, and quality' (World Bank, 2017:x). Alignment at national, regional and intuitional levels, according to the OECD (2018), requires that education provision be planned according to labour market needs, which involves planning in order to provide the number of places targeted for employment.

In South Africa, the alignment of higher education is managed through SAQA and a series of policies and bodies created by the DHET. The alignment of teacher education is enforced by three policy frameworks: one for school teachers, namely the *Minimum Requirements for Teacher Education Qualifications* (South Africa, 2011); another for TVET college lecturers, namely the *Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training* (South Africa, 2013b); and a third, namely the *Policy on Minimum Requirements for Programmes Leading to Qualifications for Educators and Lecturers in Adult and Community Education and Training* (South Africa, 2015b,) for community education and training (CET) colleges, created in 2015. Until the promulgation of these policies, the implementation of teaching policies was largely left to providers, who registered qualifications with bodies created for this purpose, with their own promotion mechanisms. Providers of teacher education are required to align their programmes not only to qualifications as noted in the policies, but also to 'standards' determined by the bodies (CHE, 2011:4).

Education–LMA, Cleary and Van Noy (2014:1) argue, is a 'complex and challenging endeavor' that 'many higher education institutions lack the experience and resources to execute'. But shortcomings in higher education institutions are not the only challenge facing education–LMA: it is also not being implemented. As Cleary and Van Noy (2014:1) note:

> … [W]hile the policy and scholarly literature [offer] some insights on how higher education aligns with the labor market, little agreement exists on how to comprehensively define the concept [education–labour market alignment] and fewer resources are available to guide implementation or outcomes measurement.

In South Africa, there is not merely 'little agreement' on education–LMA; there is a well-developed and well-articulated antagonism towards it. Articulating the antagonism, Badat (2009:2–4) argues that 'we live in the epoch of globalisation', which is characterised by the expansion of

economic activities and the international flow of services, information and technology. The epoch is driven by the forces of globalisation and has resulted in a shift in education 'away from broader academic studies and towards narrower vocational programmes'. The 'orthodoxies', he argues, 'have coalesced in the ideology of new-liberalism' Badat (2009:2–3). Zarb (2015:23) argues more directly that alignment is another manifestation of neo-liberalism.

Neo-liberalism, Chiapello and Fairclough (2002, cited in Fairclough, 2010:256) argue, is the political ideology of the *new spirit of capitalism*. The new spirit of capitalism, it is contended, is the ideology that justifies a commitment to capitalism for people whose only chance of work is by being 'someone else's subordinate'. In this context, it is argued further, the 'world is discursively constructed' (Fairclough, 2010:11) and is governed by 'alliances between different authorities' (Nicoll & Fejes, 2008:13) which exert power, both their own and that with which they align themselves.

The application of discourse as a tool for expressing social power is associated with constructs related to those developed by philosophers such as Michel Foucault and theorists such as Norman Fairclough. For Foucault (1980:93), power relations permeate society and are established through the 'production and accumulation, circulation and functioning of a discourse'. For him, too (Foucault, 1979:22), 'scientific discourses', knowledge and techniques have become 'entangled with the practice of the power to punish' and, by implication, to regulate behaviour. While there is no clear consensus on what the discourses are or how to analyse them, there is a general acceptance of the meaning of 'discourse' and 'discourse analysis' (Phillips & Jorgensen, 2004:1): a discourse refers to broad social or institutional processes that regularise conduct, or it is a term used to indicate a choice of words and paragraphs, and the structure and meaning of texts (Maclure, 2003:174–192).

Discourse analysis is an analytical tool that was initially used by language practitioners and later by social researchers to analyse the meanings that underlie a text: 'patterns that people's utterances follow' (Phillips & Jorgensen, 2004:1). Many versions of discourse analysis have been developed (Van Dijk, 1997, cited in Fairclough, 2003:2); one of them was developed by Fairclough (1989; 1992a; 1992b; 2001; 2003; 2010), who focuses on the analysis of text and its relation to power. The analysis of text, Fairclough (1989:109; 2001:91–139) argues, involves a description of text, followed by its interpretation and explanation. The basis of interpretation and analysis, he argues (Fairclough, 1989:141; 2001:118), is a researcher's background knowledge base, called 'members' resource' (which he abbreviates as MR).

As policy discursively constructs and enforces world views, its dissemination and implementation reflect the level of its enforcement. Policy that is accompanied by multilevel dissemination, as Zarb (2015:23) indicates, is a manifestation of neo-liberalism and a tool of enforcement. Foucault calls the enforcement mechanism 'governmentality' (cited in Nicoll & Fejes, 2008:6–7, 9). Governmentality refers broadly to the techniques and procedures for directing human behaviour, including the 'government of souls and consciences, government of a household, of a state, or of oneself' (Foucault, 1997:82, cited in Rose, O'Malley & Valverde, 2009:1–2).

Implementation and contending discourses

The curriculum framework is a collective interpretation of policy documents and a project with outcomes and procedures approved by representatives of the universities involved and the state officials responsible for its implementation. For this reason, it is a process aligned to the neo-liberal ideology and a discursive tool. Its outcomes and product were, however, merely frameworks, which universities could interpret and adapt for use in the development of their own curricula. The 'freedom' that university-based use and adaptation had did not prevent the process from being an exercise in neo-liberal capitalism, a political technology, to use a Foucauldian term. The discursive success of the project, as with any such venture, is determined by the extent to which its outcomes are condoned and accepted by representatives and implemented through curricula at the institutions they represent.

This project was planned around four mediated focus-group exercises, each with specifically defined developmental outcomes, that preceded the supply of readings and which were executed by applying an action-research methodology. Each focus-group exercise was intended to build on the preceding one: conceptualisation and approach were planned for the first focus group; the determination of outcomes and assessment criteria for the second; and student materials for the third. The fourth focus-group exercise was intended to develop 'implementation guidelines'. This final focus group was meant to be followed by a national 'launch' meeting at which the final draft would be distributed to the participants and, more specifically, to invited guests.

The first two sessions were conducted as planned and progress was accordingly made on developing a curriculum framework. However, at the third session, issues were raised that, in the first place, questioned the application of industry or specialised workplace-based WIL in the ACET qualifications. Secondly, it fundamentally questioned assumptions about the nature of workplaces that were assumed to be appropriate to CET college students and, as a result, the areas or workplace specialisations for which the qualifications were preparing lecturers. This led to two additional focus groups being held to examine specifically the issue of industry or specialised workplace WIL in the ACET lecturer qualifications.

The first became the fourth focus group and the second, the sixth. After the first special ACET focus group, it became evident that the curriculum framework would need to be split into two: one for TVET and one for ACET. This split was considered necessary in order to resolve adequately the implementation of specialised workplace WIL in ACET lecturer qualifications.

Central to the debate on appropriate workplaces for specialised WIL for ACET lecturers was the applicability of industry as a site for WIL in the context of CET. Accordingly, a strong argument was put forward that placement in communities would be more suitable. However, although placement in communities was substantiated, the focus group recognised that this, too, would present challenges, as the following submission illustrates:

There is no one size fits all within community models and thus the entry points for WIL need to be flexible and variable. WIL will take place collaboratively with a wide variety of partners using innovative approaches. Each community is based on its own unique set of social norms. These may be considered functional when a community is regarded as safe and dysfunctional when a community is crime ridden. (Anon, 2018)

The statement that follows – which was submitted at the fourth focus group – captures the view of the participants, a significant group that represented dominant views on the purpose of ACET. As is discussed below, their view was in conflict with the discourse on industry or workplace-based WIL (Anon, 2018):

STATEMENT

We recognise the formal provision currently at Community Learning Centres as required by policy and needed by Communities but the policy also recognises the need for nonformal programmes in a wide range of areas, on a 'needs' basis, aligned strongly to local contexts, and to employment and community which are entrenched in Social Justice (Education White Paper 2013a) development opportunities in these contexts.

Set of principles and purpose

- 'Community colleges should be established as part of consolidating the traditions and culture of popular, liberatory and emancipatory practices that are not beholden to the dictates of the state and capital.'
- ACET should be based in the context of 'strengthening democratic participation, knowledge production and information process beyond state machineries and liberated from the human capital development paradigm'.
- 'It should focus on building the competencies and practices required to advance collaborative and collective ways of living, active citizenship and activism for social, political and economic environmental and gender justice.'
- 'This should be based on the imperatives determined by the specifics and the particularities of each community and the agenda and pace set by the community itself.'
- ACET should be informed by and anchored in 'collective and participatory processes and practices of knowledge production' and address issues of redress and transformation.

(Extracted from Comments on the Draft National Policy on Community Colleges, Vol 593, No. 381558. Pretoria, 7 November 2014.)

Some participants felt that industry or specialised workplace WIL would be applicable to some subject specialisations only and to others not at all. This view was echoed by Lyster and Land (2018) in their curriculum framework for the advanced diplomas for ACET. The curriculum framework drafted by Lyster and Land was another similarly funded and commissioned inter-university process conducted at the time and constituted by an overlapping group of representatives. Lyster and Land (2018:8) note:

> There is some debate about what would constitute specialised workplace settings for an ACET language educator for example. There is an argument to be made that the specialised workplace setting is actually also a learning space like a classroom and that there is therefore no difference between the two. The concept of specialised workplace settings appears to have emerged from TVET contexts and is not necessarily applicable to all ACET subject specialisations. In fact, one view is that this section of WIL is not appropriate for ACET educators, and that the policy should be amended.

However, Lyster and Land (2018) conceded that specialised workplace-based WIL could be beneficial in some situations. They note (2018:8):

> … [T]here are some contexts that, if used for WIL, would serve to give adult lecturers-in-training more insight into the needs of adult learners than they would gain in institutions offering formal education to adults, and hence into how to interpret the curriculum and shape their teaching. These may be organisations such as prisons where skills training is offered, or community organisations involved in savings and livelihoods support projects, health organisations, organisations promoting coping skills or trauma counselling, environmental awareness initiatives, or indeed any organisation aiming to extend understanding in any community. Equally, contexts for WIL may include work settings – industry, trade unions, agricultural extension initiatives, and so on. The selection of which organisation would be best for which student would obviously depend on students' specialisations and interests.

Clearly, the political technology (i.e. the policy) applied to realise the state's intention could not be implemented. It required either adaptation or the exclusion of a significant element of the community that the policies were intended to serve. From the two focus-group exercises that specifically focused on the implementation of specialised WIL in the ACET qualifications, three discourses emerged: the approaches towards TVET lecturer programmes, to the ACET lecturer qualifications, and to specialised workplace-based WIL in ACET. These are discussed below.

Industry-based WIL

One discourse is reflected in the approach to TVET lecturer programmes. The link between TVET programmes and industry practice, and also its function in reproducing skilled labour for the formal workplace, among other functions, through work placements, is generally accepted, and it is promoted by the state and the business community. The credibility of TVET lecturers is brought into question by the state in various policy documents through its statements that they need to have up-to-date workplace knowledge and expertise in their subject fields (South Africa, 2008:6; 2013a:17; 2013b:3). For instance, the White Paper for Post School Education and Training (South Africa, 2013a:17) states:

> Workplace experience required by lecturers will also be prioritised over the next few years to ensure that their training is up to date with workplace needs and to provide lecturers with a better understanding of the needs of employers in their field.

Support for this discourse is clearly indicated in the WIL for Lecturers Project funded by the ETDP SETA and implemented by the SSACI. This project had as its 'overall aim … to improve the teaching and learning in participating colleges through systematic work-integrated learning (WIL) for lecturers' (Smith, 2017:6). One of its objectives, furthermore, was to illustrate how WIL can be 'integrated into the new professional qualifications being developed by universities, e.g. the Diploma and Advanced Diploma in Technical and Vocational Teaching, and the Advanced Certificate in TVET'. In addition, the policy framework for TVET lecturers (South Africa, 2013b) provides directly for workplace/industry-based WIL to be formalised in TVET lecturer qualifications. The view noted by the policy (South Africa, 2013b:10) largely confirmed the discourse:

> … all TVET college lecturers need to have up-to-date knowledge of the application and … relevance to … the workplace of the subjects they teach. Therefore exposure to … and time spent in structured experience in workplace/industry settings, are crucial components of TVET lecturer qualifications.

For the supporters of this discourse, WIL in workplaces related to students' areas of specialisation is a necessary element in the development of TVET lecturers: it is perceived to be an important element of building and establishing their credibility. For these supporters, the challenges presented are technical ones; and the solutions are to be found in empowering academics and their 'industry partners', aligning industry placements with placements in college classrooms, and integrating the industry WIL component into the rest of the programme that develops TVET lecturers.

Appropriate, specialised workplace-based WIL for ACET

A second discourse that emerged emanated from the academics responsible for the ACET lecturer qualifications: it reflects an attitude of acceptance of the policy for ACET lecturers

(South Africa, 2015b) in developing teaching staff for CET colleges. The CET colleges are expected to provide 'adults and youth, who are poorly educated, not studying or unemployed', with an opportunity to further their education or learn skills that will enable them to 'enter the labour market' or 'find alternative ways to earn sustainable livelihoods' (South Africa, 2013a:20). Whereas the CET colleges are currently focused on providing formal programmes, they are required to offer a broad range of formal and non-programmes 'on a "needs" basis, aligned strongly to local contexts, and to employment and community development opportunities in these contexts' (South Africa, 2015b:6). The programmes offered, the policy indicates (South Africa, 2015b:6), 'could' include programmes that lead to work. Programmes such as Early Childhood Development, Entrepreneurship, Plumbing, Construction, Carpentry, Electricity, Welding, Auto Body Repair, and Motor Mechanics are examples.

A curriculum system for formal adult education has also been developed for the CET colleges. This includes the General Education and Training Certificate for Adults (GETCA) (South Africa, 2015a), at Level 1 of the National Qualifications Framework (NQF), and the National Senior Certificate for Adults (NASCA), at Level 4 of the NQF (South Africa, 2014a). The GETCA includes academically oriented subjects, such as the official South African languages, Mathematics and the Natural Sciences, as well as vocational subjects, for instance Wholesale and Retail, Travel and Tourism, and Ancillary Health Care. In contrast, the NASCA consists only of academically oriented subjects, which include the official South African languages, the Human and Social Sciences, Mathematics, the Natural Sciences, and Economic and Management Sciences.

This discourse produced two approaches: one is that WIL should be aligned with the students' areas of specialisation. According to this approach, if a student has an academically oriented area of specialisation – a language or a science, for example – then WIL at a college, in the form of teaching practice, commonly applied in teacher education, is sufficient. For students with an area of specialisation that is linked to a workplace – for instance, Business Studies and Tourism Studies, WIL should be completed both in the context of the college and in that of their area of specialisation. Such students are therefore expected to be exposed to both forms of WIL in a manner similar to that of TVET students. The views related to this approach, while expressed in the focus groups, are not reflected in any policy document. In this first approach, it was understood that sites suitable for workplace WIL could include industrial and commercial businesses, government departments, non-governmental organisations (NGOs), and community-based organisations (CBOs).

The second approach to this discourse focuses on the location of community colleges in communities and, as a result, it regards an ACET lecturer as a type of community worker. For proponents of this approach, ACET students should be exposed to WIL at a college in the form of teaching practice. In addition, they should spend time working 'in communities', doing community work related to their area of specialisation. Proponents of this discourse, again, expressed different views. One view, commonly expressed in the focus groups, is that WIL at colleges, in the form of teaching practice, was sufficient for workplace-based

development. When at a community college, it is argued, students should be exposed to both the classroom and the context in which the classroom is located.

Antagonism towards, and rejection of, specialised workplace-based WIL in ACET

The third discourse is reflected in the 'statement' noted earlier. In terms of this discourse, CET colleges are expected to collaborate with other organisations on programme provision; these organisations include NGOs, CBOs, government departments and businesses (South Africa, 2017; Land & Aitchison, 2017). They are expected to do so in order to service the education and training needs of the community in which they are located. Furthermore, as Lyster and Land (2018) point out, this 'is the most varied feature' of the South African post-school education landscape, 'with the broadest scope in terms of target audience, institutional location (including non-formal education), range and types of content' (Lyster & Land, 2018:4).

The focus of this discourse is adults and their learning needs. International definitions of adult education have shifted over many years and reflect 'changing priorities and ideological shifts in the conceptualisation of what constitutes this elusive, wide-ranging and yet marginalised field' (Lyster & Land, 2018:4). For Lyster and Land (2018), 'adult learning and education (ALE) encompasses all incidental forms of learning and continuing education (undertaken by adults)', its provision located in 'the traditions and culture of popular, liberatory and emancipatory practices'. In terms of this discourse, education should be informed by, and anchored in, collective and participatory processes and practices of knowledge production, and it should deal with issues of redress and transformation. Both the tradition and the intention of this educational discourse are contrary to the 'dictates of the state and capital' that industry-based WIL supports. It is, furthermore, based on 'imperatives' determined by the dynamics of communities as unique entities with a characteristic 'agenda and pace'.

Discursive demands: Need for a separate discourse on specialised, workplace WIL for ACET lecturers

Faced with these concerns and varying levels of antagonism, the focus group took a decision to separate the discourse on industry or specialised workplace WIL for TVET lecturers from that of WIL for ACET. The former was clearly formulated and aligned with international practice and the experience of placing TVET lecturers in workplaces associated with areas of specialisation. The latter, as with the form of education and training of which it formed a part, were not clear.

For the ACET qualifications, the industry or specialised workplace WIL element clearly needed to include more than the 'industry-based settings' (e.g. factories, worksites, offices, etc.) noted in the policy (South Africa, 2015b:13). In the development of the curriculum framework for specialised workplace WIL for ACET lecturers, the nature of ACET, both

as a form of employment and encapsulating the fields of educational specialisation that it supported, was highlighted.

The notion of ACET – in the form of adult education and training (AET) and CET as subsectors of continuing education and training (South Africa, 2015b:5) – and its allocation to that function belie both its complexity and the dynamics of its management. The 'sectors' are not merely demographically diverse, which is acknowledged in the policy, but they also include a very broad range of institutions, including NGOs, CBOs, faith-based organisations (FBOs), local government, government departments and agencies, other educational institutions, and employers (South Africa, 2017; Land & Aitchison, 2017). Some learning centres have been funded by various state departments and have been 'migrated' to assume control over provincial CET colleges. Others remain self-funded or donor-funded and are therefore not subject to state procedures.

The role players in these sectors are also diverse and include state-based and established institutions with international links to micro-organisations. One participant (CPUT, 2018), representing a national network, argued that the provision of community work differs nationally, regionally and at local level:

- At a national level, community work is dominated by the state, state-funded institutions and international funding agencies. At this level, a number of national NGOs exist, but these tend to have grown out of institutions that do local-level community work.
- At a regional level, operators include established NGOs and CBOs, local government and community-support projects funded by business and other social institutions, including universities and religious institutions.
- Local-level operators include fieldworkers, community workers and activists who support communities or elements within communities. This level of community work most starkly reflects the diversity, pressure and, at times, danger of community-based work. The implications for the placement of ACET education students in identifiable workplaces is that student experiences will differ significantly, depending on the type of institution at which they are placed and the level at which they operate.

In addition to the work of community-based institutions being diverse, institutions that constitute learning centres of provincial CETs and independent providers offer a very broad range of types of learning; these vary in purpose, content, formality, and the type of learner involved. According to the state (CPUT, 2019), the general demographics of community learners have changed: from adults requiring part-time tuition to youths preferring full-time, formal studies. It is to this new demographic that the GETCA and NASCA curricula, CET colleges and, as a result, the policy on ACET lecturer qualifications (South Africa, 2015b) are geared.

Programmes registered by higher education institutions are required to align subject modules to the Classification of Educational Subject Matter (CESM) categories. The CESM categories include a list that shows the 'fields of study' and 'courses that higher education institutions are

obliged to use to classify subject modules, and are used for annual data returns' (South Africa, 2008:1); these are also used to determine subsidies. For example, the 2014 revision (South Africa, 2014b:5–6) included '0707 Teaching, Leading and Researching in Community and Adult Education and Training Contexts'; 0707 is 'an area of study that prepares individuals to teach, research and/or provide curriculum leadership in the Ancillary Health Care subject specialization in adult learning centres, community education and training colleges and other adult learning settings' (South Africa, 2014b:20). It indicates subject modules appropriate to ACET for subsidy purposes.

The list included for study in this context is limited to subjects aligned with the state's national curriculum for adults. Fields related to community education, such as gender-based violence, HIV and AIDS awareness, and civil and legal rights education, are not included. The discursive power of CESM categories means that the pressure of compliance results in the registration of ACET lecturer qualifications that are more likely to be aligned with state curriculum requirements than with diverse and changing community needs.

As a tool of discursive power, the CESM categories not only influence the 'fields of study', but also affect the freedom providers have to structure their programmes, and this could, in turn, influence the philosophical approach that underlies what is offered. The titles included in the CESM categories are those associated with conventional theories of mainstream school-based education and its management. Providers are obliged either to align their subject modules to the CESM categories or 'fit' content into names included in a CESM category. If providers include content not aligned with the CESM categories, the content would have to be included as additional credits.

The form of adult and community education noted in the statement (Anon, 2018) reproduced above, which was submitted at the third focus group, is a system that is based on 'popular, liberatory and emancipatory practices'. These practices are aligned with the idea of 'strengthening democratic participation' and are 'informed by and anchored in collective and participatory processes and practices of knowledge production'. This system fundamentally contradicts the structure envisaged by the state, which is reflected in the WIL requirements of the ACET lecturer policy, the post-2015 CET college structuring, the GETCA and NACSA curricula, and the CESM categories.

Compromises: Separate curriculum framework for ACET; broader definitions of WIL and sites of learning

After the fifth focus group, the combined TVET/ACET curriculum framework was split into two and the ACET version of the framework was reinterpreted to respond more adequately to concerns associated with the implementation of the specialised workplace WIL requirement in the ACET qualifications. The sixth and final focus group was conducted in 2019, specifically to identify the extent to which the ACET curriculum framework met the needs of the dissenting discourse and, if necessary, to adapt it further to deal with these needs.

Two points of contention appeared to remain. The first was encapsulated in the view expressed in the statement above that WIL is 'beholden to the dictates of the state and capital' (Anon, 2018). While it is accepted that WIL methodologies subordinate practices within education to those of the workplace because the aim is to prepare students for the world of work, 'service-learning' methodologies do not. As with workplace learning, service learning involves learning through placement in another organisation, but, while workplace learning is concerned with work and usually takes place in a business setting, service learning involves community service and takes place in a state-based or community organisation. Service learning, like WIL, involves 'a structured learning experience' that involves providing a community service while also learning about the context in which service is provided, the connection between the service and academic coursework, and a student's role as a citizen (CHE, 2011:76).

While the processes involved in WIL and service learning are similar, the philosophy underlying service learning (civic responsibility) is different from that of workplace-based WIL (work experience). The philosophy underlying service learning, unlike that of WIL, is compatible with community-based learning. Furthermore, the position of the education provider is different: whereas an educational institution is subordinate to a business in a WIL exercise, the university is a service provider when engaged in service learning, one perceived to have knowledge that its community needs and that is provided through service learning. Applying service-learning models is therefore suitable for CBOs, which, it was argued, would free a provider from the 'dictates of the state and capital' (Du Plessis & Van Dyk, 2013:78). Service learning, furthermore, provides development opportunities with regard to data-collection methods commonly used in community work and includes community listening surveys, timelines and mapping exercises.

The second point of contention related to the identification of appropriate 'sites' at which students could be placed, a challenge that was commonly perceived. While Lyster and Land (2018:37) determined that non-industry-based settings for workplace WIL could include 'trade unions, churches, support groups, co-operative organisations, women's groups, prisons, rehabilitation centres, interest groups, libraries and skills training centres', it was generally accepted that it was unlikely that these organisations would have the capacity for WIL or have the necessary experience in service learning.

A suggestion that emanated from the discussion was to use CET colleges for placement both for WIL related to education and for specialist field experience, through setting colleges up as 'anchor hosts'. As an anchor host, a CET college would serve as a place for teaching practice and for community-based, specialised workplace WIL by providing a conduit for students to enter and work with community organisations and businesses through the college's community network.

The anchor host idea has two defining elements. The first is that it simplifies the organisation of WIL. Instead of a university developing separate WIL agreements with CBOs and local

businesses for each student, it enters into an agreement with one college and shifts the responsibility for specialised workplace WIL to it. A danger identified in using CET colleges as anchor hosts is that the specialised workplace WIL component could be subordinated to classroom-based WIL or by any organisational weaknesses of the college. To ensure success, structures, rewards and personnel would need to be put in place in the CET colleges.

The second defining element is that the role of the CET college in providing WIL in the form of teaching practice for ACET lecturers is expanded to include its serving as the site for specialised workplace WIL. Whereas it was acknowledged that the danger with this was that it could confuse specialised workplace WIL with teaching practice, it was nevertheless felt that this could be overcome through the use of different assessments for the two forms of WIL.

The concept of anchor host was accepted at the sixth focus-group exercise, on condition that such an arrangement would be suitable only at community education and training centres (CETCs) that are fully functional, offer programmes in both formal and non-formal contexts, and collaborate closely with organisations and businesses in their local community. A further condition was that the university offering the qualification would have to work closely with CETC anchor hosts in order to ensure that the specialised workplace-based WIL met the requirements of the policy and the curriculum framework.

Conclusion

More than a decade ago, Fataar (2003:33), in his analysis of the alignment of the state's higher education policy with its macro-development plan, argued that a crucial understanding of the alignment of higher education discourse '… is [understanding] the struggle for hegemony within the government over the overall direction of government policy'. However, implementing teaching policy is not a struggle for hegemony within the state apparatus: it is one between a state which has developed into a neo-liberal structure and the educational discourses that supported its inception. As a result, what in other national contexts would be considered and accepted as a dissenting discourse is accommodated instead.

In the case of the curriculum frameworks for WIL for TVET and ACET lecturer programmes, the accommodation was accepted by the assigned representatives from universities from which the dissenting discourse emanated. The outcomes of the various institutional registration processes will determine the extent to which the state's discourse has been enforced.

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Teacher industry placement in Australia: Voices from vocational education and training managers

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ABSTRACT

An important aspect of vocational education and training (VET) teaching is education that is strongly linked to current industry practices. While this is a desirable pursuit, there are considerable challenges in it being implemented owing to increasingly changing work environments and the notion of 'industry currency'. One way for VET teachers to remain up to date with contemporary industrial practices is for VET to pursue teacher placement in industry (TPI) opportunities. TPI is an agreement in terms of which the VET teacher is seconded to a firm for a period of time in order to perform predefined tasks. The resulting benefits include enhanced teaching practices and the development of deeper, long-term links with industry. However, TPI opportunities are not without their challenges. This article reports on an exploratory study of the views of VET education managers of business studies on the value of TPI. Because management support is integral to creating TPI opportunities, we explored the extent to which TPI is desired and supported by education managers. We found that policies supporting TPI initiatives, if they are in place, are not well formulated, and that a lack of resources and difficulties in finding industry partners exist. Despite these problems, education managers believe that these activities are of value to teaching programmes and of benefit to their department. We conclude that TPI should be an integral part of any VET professional development for teachers, but that, in order for TPI to be successful, appropriate resourcing and the development of strong industry networks are paramount.

KEYWORDS

Activity Theory; communities of practice; education–industry partnership; teacher professional development; workplace learning; expansive learning

Introduction

This article reports on an exploratory study of the views of vocational education and training (VET) education managers of business studies on the value of teacher placement in industry (TPI). Because management support is an integral precursor to creating TPI opportunities, we explore the degree to which TPI is desired and supported by education managers, and the challenges accompanying these initiatives.

It is commonly accepted that education is a vital component of human progress. It is 'teachers … who are recognised as crucial to bringing about change in student outcomes' (Perry & Ball, 1998:77), because

> … learning means making practical experience (learning by doing) and is seen as a social process that happens through socialisation in communities of practice. Teaching mainly means to create the learning environment in which students can gain experience. (Cedefop, 2017:16)

'It is what teachers do and care about which is very powerful in this learning equation' (Hattie, 2003:2), and, importantly, it is those teachers themselves who need to keep abreast of the latest information and knowledge in order to ensure that student learning and the development of competences are maximised. To this end, an important consideration for any teacher should be continuing professional development (CPD). CPD is a notion that is widely applied across many workplaces, from education settings to professional organisations and in-house human resource development. The main philosophy behind CPD is continuous improvement in order to make processes and procedures more effective and efficient, often through the cross-pollination of ideas coming from different areas or perspectives. The cross-pollination of ideas in one area may lead to their application in other areas, and, through some form of exchange mechanism, these ideas may be adopted, either entirely or in modified form, to apply to different settings. Implicit in all of this is human interaction and learning derived from these activities. CPD is a form of learning, be it formal or informal.

Teacher placement in industry (TPI) has been defined as

> … a form of professional development consisting of an arrangement whereby the academic [teacher] spends a predetermined period of time working in industry in a previously agreed to job role (Bergami, Schüller & Cheock, 2011:261).

In Australia,

> … education and training is a shared responsibility of all Commonwealth, State and Territory governments. Education, training and employment ministers collectively own and are responsible for the AQF [Australian Qualifications Framework] (Australian Qualifications Framework Council, 2013:9).

Introduced in 1995, the

> AQF is the national policy for regulated qualifications in Australian education and training. It incorporates the qualifications from each education and training sector into a single[,] comprehensive national qualifications framework (Australian Qualifications Framework Council, 2013:9).

Consequently, TPI occurs in a VET education context and in the environment of government policies, with a number of key stakeholders involved in the process, as shown in Figure 1.[1]
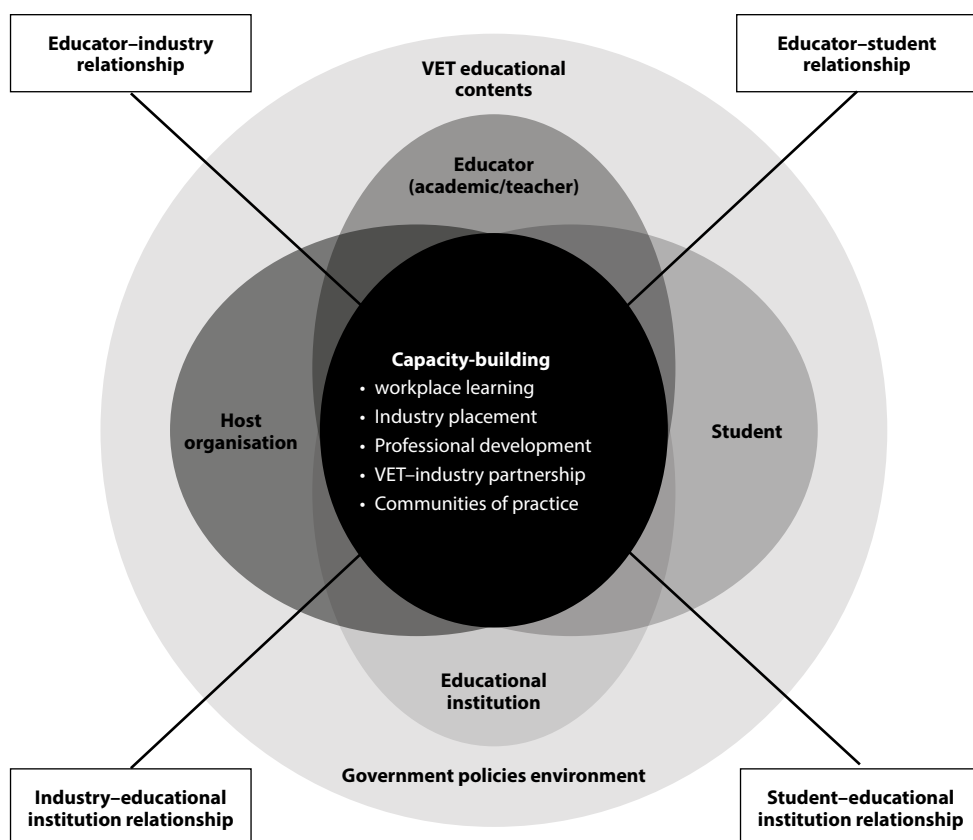
Figure 1: VET educational education and government policies environment with key TPI stakeholders (adapted from: Schüller & Bergami, 2012:32)

1   For further details on this diagram, see: Schüller, A & Bergami, R. 2012. Industry placement experiences in vocational education: Voices from Australia. *International Journal of Knowledge, Culture and Change Management*, 11(6):29–47.

In their very nature, TPI arrangements are complex: they involve a number of key stakeholders and require multiparty negotiations related to time, place, and activities to be undertaken, as shown in Figure 2.[2] We argue that TPI activities can successfully and sustainably occur only when the three principal actors – the educational institution, the host organisation and the teacher – involved in a TPI activity are able to negotiate a meaningful agreement prior to its commencement, as shown in the shaded circle in Figure 2. Each of the three actors involved in a TPI initiative has an important role to play in the process of negotiating the purpose and role of the activities to be conducted on placement. But, from our perspective, we argue that the educational institution plays a pivotal role in enabling the placement either to proceed or not. This is because the placement will not happen unless a teachers' managers have given them their prior approval. In this process, the manager(s) needs to consider a number of matters, including:

- The duration and intensity of the placement – that is, the total duration of the placement (e.g. one month, six months or more) and the frequency of the activities causing absences (e.g. daily, once a week, once a month);
- Backfilling – that is, finding replacement resources for classroom activities, marking and other administrative duties while the teacher is on placement; and
- Funding – which must cover the expense of backfilling and, where applicable, continuing remuneration for the person who has to substitute while the teacher is on placement.

Consequently, it is unlikely that the TPI would happen in the absence of managerial approval, even where the teacher were to find a host organisation independently who is willing to offer a placement. Our view is consistent with that of Van der Bijl & Taylor (2016:104), who claim that

> … a key role in the success of lecturer industry placement is the role played by college management in facilitating lecturer placement and incorporating this into human resources management processes and the academic function.

Since TPI activities occur subsequent to the pre-placement negotiations, the focus of this article is not on TPI activities per se, as shown in the unshaded circle in Figure 2. Rather, it is on the educational institution, through the lens of education managers of business studies. Their views on the value of TPI programmes should provide insights into the workplace environment in which TPI initiatives may be enabled or disabled.

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2   For further details on this diagram, see Bergami, R & Schuller, A. 2009. Perceptions on industry placements: A scoping study of academics in Australia. *The International Journal of Knowledge, Culture and Change Management*, 9(9):61–82.
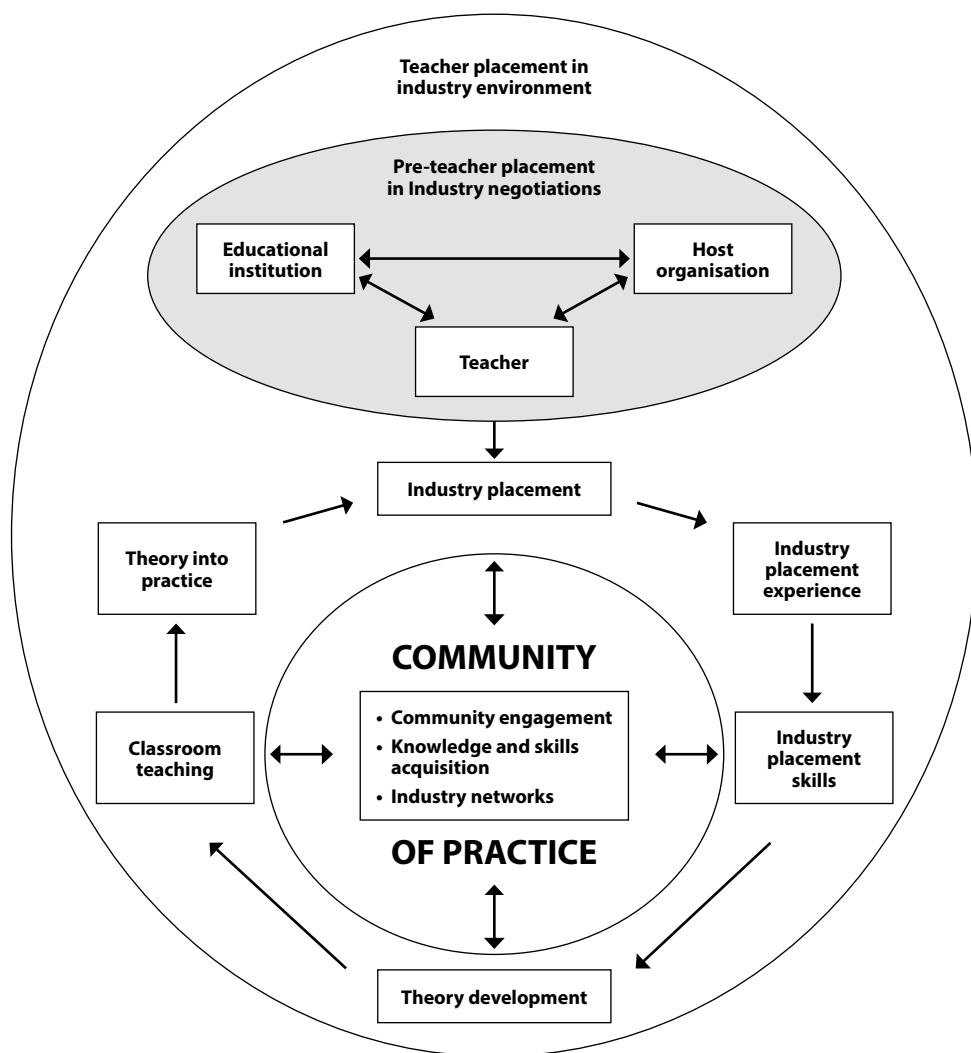
Figure 2: Teacher industry placement environment: A theoretical model (adapted from: Bergami & Schüller, 2009a:67)

The article first provides a brief literature review; this is followed by the methodology section, which precedes our discussion of the findings and the presentation of our conclusions.

Literature review

The main social theories in TPI are summarised in Figure 3. The theoretical model shown in Figure 2 is largely centred on the notion of a community of practice, but the complex nature of learning is such that other social learning theories are also relevant to TPI activities. The

main social theories of learning explored in this literature review are summarised in Figure 3 and discussed below. It is beyond the scope of this article to analyse in detail all the theories that fall under this umbrella heading; consequently, our comments are limited to those theories and authors shown in Figure 3.
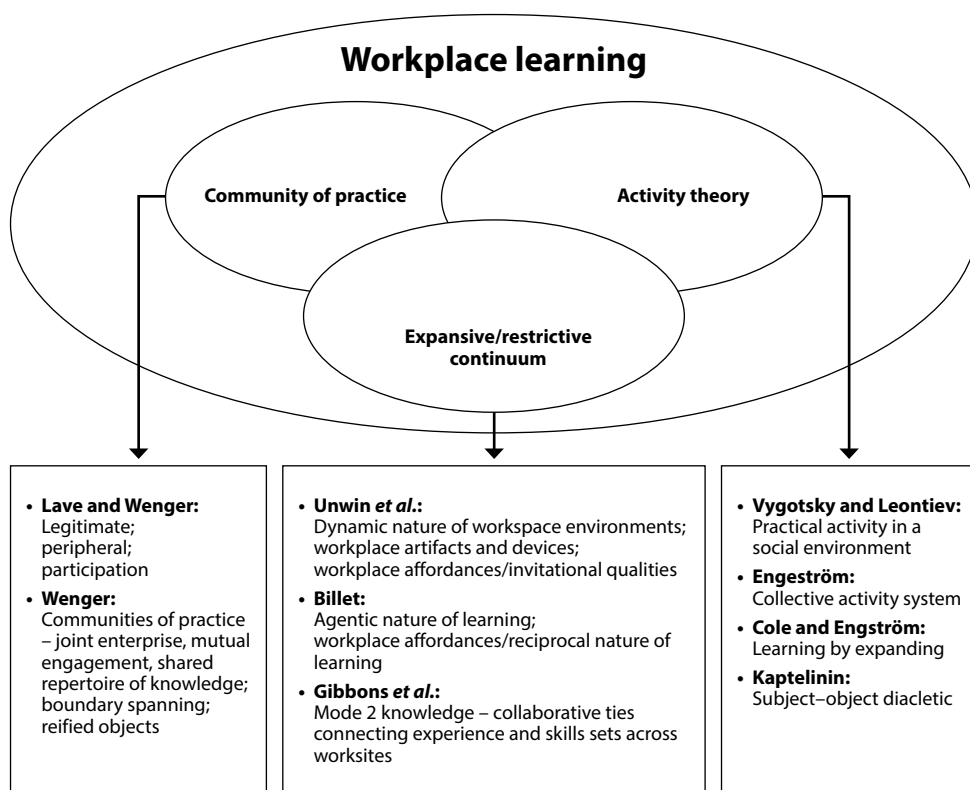
Figure 3: Main social theories of learning relevant to TPI (own elaboration)

Communities of practice

Lave and Wenger (1991) define a community of practice as a group of individuals with different interests, holding different points of view, and making a contribution to an activity at multiple levels, implying 'participation in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities' (Lave & Wenger, 1991:97–98).

According to Kelly (2003:499), Lave and Wenger's (1991) work has its roots in Vygotsky's (1978) theory on the situated nature of learning, remembering and understanding. Situated learning is an important aspect of TPI activities, because the teachers, although in situ, are limited to the negotiated tasks relevant to their secondment, as they are not full-time

employees of the host firms. The notion of legitimate peripheral participation is relevant to TPI settings; it

> … provides a way to speak about the relations between newcomers and old-timers, and about activities, identities, artefacts, and communities of knowledge and practice. A person's intention to learn [is] engaged and the meaning of learning is configured through the process of becoming a full participant in a socio-cultural practice. This social process includes, indeed it subsumes, the learning of knowledge and skills (Lave & Wenger, 1991:29).

'Workplace artefacts and devices' refers to organisational resources. However, these may be made available in a limited fashion to the teacher only on placement owing to a number of variables, including: commercial sensitivity, proprietary knowledge, privacy concerns, confidentiality, organisational culture, and control of worker autonomy.

A considerable body of literature supports the view that communities of practice make a contribution to organisational learning and social capital (Brown & Duguid, 2000; Henderson, 2007; Kelly, 2003; Lesser & Prusak, 2000; Liedtka, 2000; Mitchell & Young, 2002). Three dimensions of a community of practice support learning are (Wenger, 1998):

- Joint enterprise, which includes the process of negotiating and engaging with others across multiple sites of practice. These enterprises are reflected in the work practices of employees that 'are as complex as we are' (Wenger, 1998:78);
- Mutual engagement, which refers to its interdependence with a community of practice, as one cannot exist without the other; and
- Shared repertoire, which refers to the broad range of resources, knowledge, tools and other reified objects developed over time that 'reflect a history of engagement' (Wenger, 1998:83) with 'tacit and explicit aspects of the community's knowledge' (Wenger, McDermott & Snyder, 2002:38).

Activity theory

'Activity theory' is a broad term applied to a range of social theories of learning drawn mainly from psychological and educational research and organisation studies; it offers a useful framework for analysing human activity in a practice, and human beings' interactions with the environment. Influenced by Vygotsky (1978) and Leontiev's (1978) tools of mediation and zone of proximal development (Foot, 2001; Russell, 2009), activity theory attempts to understand the 'messy networks of human interactions by looking at people and their tools as they engage in particular activities' (Russell, 2009:19–20). Hasan and Kazlauskas (2014) define it as being 'all about who is doing what, why and how'. It encompasses concepts of 'mediated action' (Miettinen, Fredericks & Yanow, 2009:1317) and complements Engeström's (1987) theory of expansive learning. Building upon the earlier work of Vygotsky (1978) and Leontiev (1978), Engeström (1987) expands the unit of analysis in an activity system through

his conceptualisation of cultural–historical activity theory (CHAT). CHAT focuses on the sociocultural structures and contradictions within an activity system in order to understand how activity is mediated (DeVane & Squire, 2012). Kaptelinin (1996:55) highlights three components of an activity system as being

> … the motives, or objects that are impelling by themselves. Each motive is an object, material or ideal, that satisfies a need. Actions are the processes functionally subordinated to activities; they are directed at specific conscious goals. According to activity theory, the dissociation between objects that motivate human activity and the goals to which this activity is immediately directed is of fundamental significance. Actions are realised through operations that are determined by the actual conditions of activity.

There are overlaps between activity theory and the expansive–restrictive continuum, because, invariably, human activity is complex, varied and multidisciplinary in nature. This is evidenced by Cole and Engeström's (1993) and Engeström and Cole's (1997) analyses of the nature of socially situated and distributed contexts.

Expansive–restrictive continuum

Fuller and Unwin's (2004) conceptualisation of the expansive–restrictive continuum considers various workplace environments and organisational approaches to workforce development, as shown in Table 1. Many variables influence individual and organisational capacity-building, including the diverse nature of organisational cultures across different worksites. Some workplaces have inherent limitations in place, such as different management controls over employee autonomy according to what management deems to be 'appropriate' (Unwin, Fuller, Felstead & Jewson, 2009). There is also an interplay between individual roles, organisational structures, systems, procedures and hierarchies that may operate to promote or hinder workplace learning.

Table 1: Expansive–restrictive continuum (Fuller & Unwin, 2004:130)

APPROACHES TO WORKFORCE DEVELOPMENT	
EXPANSIVE	**RESTRICTIVE**
Participation in multiple communities of practice inside and outside the workspace	Restricted participation in multiple communities of practice
Primary community of practice has shared 'participative memory' and cultural inheritance of workforce development	Primary community of practice has little or no 'participative memory' and no or little tradition of apprenticeships
Breadth: access to learning fostered by cross-company experiences	Narrow: access to learning in terms of task, knowledge or location

← APPROACHES TO WORKFORCE DEVELOPMENT →	
Access to a range of qualifications, including knowledge-based VQ	Little or no access to qualifications
Planned time off the job, including for knowledge-based courses and for reflection	Virtually all-on-job: limited opportunities for reflection
Gradual transition to full, rounded participation	Fast: transition as quickly as possible
Vision of workplace learning: progression for career	Vision of workplace learning: static for job
Organisational recognition of, and support for, employees as learners	Lack of organisational recognition of, and support, for employees as learners
Workforce development fosters for aligning the goals of developing the individual and organisational capability	Workforce development is used to tailor individual capability to organisational need
Workforce development fosters opportunities to extend identity through boundary crossing	Workforce development limits opportunities to extend identity: little boundary crossing experienced
Reification of 'workplace curriculum' highly developed (e.g. through documents, symbols, language, tools) and accessible to apprentices	Limited reification of 'workplace curriculum'; patchy access to reificatory aspects of practice
Widely distributed skills	Polarised distribution of skills
Technical skills valued	Technical skills taken for granted
Knowledge and skill of whole workforce developed and valued	Knowledge and skill of whole workforce developed and valued
Team work valued	Rigid specialist roles
Cross-boundary communication encouraged	Bounded communication
Managers as facilitators of workforce and individual development	Managers as controllers of workforce and individual development
Changes to learn new skills of jobs	Barriers to learning new skills or jobs
Innovation important	Innovation not important
Multidimensional view of expertise	Uni-dimensional top-down view of expertise

These variables underscore the 'restrictive–expansive' (Unwin, Felstead, Fuller, Bishop, Lee, Jewson & Butler, 2007; Unwin et al., 2009) nature of workplace environments through the degree to which they facilitate:

access to knowledge and information; the opportunity it provides to practice and develop new skills, the provision of effective support for learning and the extent to which it rewards learning (Unwin et al., 2009:108).

These fundamental requisites are the building blocks for knowledge creation and capacity-building. Drawing on Fuller and Unwin (2003), and later research by Dismore (2014), Doroftei, Da Silva and Araujo (2018) note that expansive forms of workplace participation, including professional development, are likely to contribute to deeper learning and restrictive approaches to surface learning. Holbery and Mitchell (2019) claim that expansive workplaces encourage a 'supportive environment … to learn … [and develop] higher level skills such as dialogue, problem solving and reflexive forms of expertise'.

Mode 1 and 2 forms of knowledge production

Gibbons, Limoges, Nowotny, Schwartzamns, Scott and Traw (1994) draw particular attention to two distinct forms of knowledge: Mode 1 and Mode 2. Mode 1 is 'traditional knowledge' (Gibbons et al., 1994:1), a distinct kind of homogenous disciplinary knowledge governed, by and large, by the conventional norms of scientific research and drawn from universities. Mode 2 refers to applied, transdisciplinary knowledge drawn from, and evolving through, a dynamic process of continuous negotiation across transdisciplinary sites, linking individuals, skills and experience through informal and socially distributed networks of communication (Gibbons et al., 1994).

Workplaces use many different tools and artefacts. These provide a useful means of mediating the activities of the organisation, and they also bring insights into how knowledge is created, distributed and used (Engeström, 1987; Leontiev, 1978; Wenger, 1998). Billett (2001; 2004; 2008:209) highlights the socio-relational and agentic nature of workplace learning through workplace affordances, that is, the extent to which organisations 'afford opportunities for learning', whereas workplace learning is shaped by the invitational qualities provided by organisations; the way in which individuals choose to 'engage with workplace activities and guidance also shapes the quality of their learning' (Billett, 2001:211). Workplace affordances are not equally distributed, as the bases upon which they depend include variable factors such as perceptions of competence, ethnicity and gender; work status and demarcations; and personal work relationships and loyalties (Billett, 2001). Such is the contested nature of co-participation in work practices that they can be 'the bases of competition and exclusion between competing interests' (Billett, 2001:211).

Apart from the main social theories of workplace learning, other literature considers the benefits and challenges of TPI schemes. Their various benefits have been noted to include the following:

- Teachers are able to use their specialist disciplinary knowledge in a consulting role in order to support the development of industry processes and systems (Ireland, Golden & Spielhofer, 2002);

- They are able to create opportunities for mutually beneficial projects between the educational institution and the host organisation (Klein, 2001; Ireland et al., 2002);
- They are in a position to build the vocational currency of teachers, raise awareness of an industry's needs, and enable teachers to share this information with students (Schüller, 2013);
- They can develop the professional identities of teachers and strengthen teaching practice through the renewed confidence, knowledge and enthusiasm gained during their industry placement (Haigh, 1997; Ireland et al., 2002).

Meadon (1990) argues that TPI benefits far outweigh the difficulties of possible disruptions to teaching workflow because

> … knowledge of a company's management techniques, of marketing, financial management, the chance to develop curriculum materials and laying the foundation for a link with a local firm [are] just a few positive spin-offs.

Notwithstanding these benefits and the positive acknowledgment of TPI within broader policy frameworks (TAFE Development Centre, 2009), challenges remain with this form of CPD.

TPI challenges

Previous research by Schüller (2013) and that of other Australian researchers (Harris, Simons, Hill, Smith, Pearce, Blakeley, Choy & Snewin, 2001; Mitchell, Clayton, Hedberg & Paine, 2003; Williams 2009; Guthrie, 2010; Guthrie & Clayton, 2010; Schmidt, 2019) into the experiences of Australian VET teachers who had participated in an industry placement revealed tensions between policy and practice. This is not unique to Australia: it is known that policy and practice commonly differ across the world. The focus of the existing international literature (Andersson & Köpsén, 2015; Hoekstra, Kuntz & Newton, 2018) appears to be on teachers' experiences and developmental requirements, and not on the role that the education manager – one of the key decision-makers – has in TPI initiatives. A South African study by Van der Bijl and Taylor (2016) considered 'the nature, internal dynamics and management of lecturer LWE [lecturer workplace exposure]'; however, that study does not appear to provide details on the role of managers in influencing TPI activities.

In addition, TPI outcomes are often nebulous and ill-defined and therefore their effectiveness in building teacher industry currency is difficult to evaluate (Mitchell, 2003; Guthrie & Clayton, 2010; Clayton, Jonas, Harding, Harris & Toze, 2013; Guthrie & Clayton, 2013). Having briefly reviewed the literature most relevant to this study, the methodology we used in the study is described in the next section.

Methodology

A survey of Australian VET education managers in the area of business studies was conducted during the latter part of 2016. This study was exploratory in nature and largely one of qualitative analysis, its aim being to identify issues for further quantitative research with a larger sample.

No evidence has been found to suggest that a previous study of this nature has been conducted in Australia, as this study focuses on the role managers of business studies play in the decision-making process in TPI initiatives. Other Australian studies have focused primarily on the benefits and challenges of TPI from a teacher's point of view. For example, Perry and Ball's (1998) research was based on a teacher release to an industry programme for secondary school business teachers and its focus was on the benefits these teachers gained from TPI. Schüller's (2013) investigation focused on the TPI experiences of VET teachers of business studies. Whelan (2017) focused on graduate attributes and course learning outcomes. These studies are not relevant to the focus of this article.

Surveys

An electronic survey was developed for this study, the questions being informed by various sources, including: discourses on VET teacher professional development (Guthrie, 2010; Guthrie & Clayton, 2010; Clayton et al., 2013); earlier TPI studies (Bergami & Schüller, 2009a; Bergami & Schüller, 2009b; Schüller, 2013) on teacher participation in previous TPI initiatives (2005–2012); and academic experience in teaching business disciplines in the VET sector, both with technical and further education (TAFE) and registered training organisations (RTOs). This collective knowledge resulted in a raised awareness of the complex variables that influence situated learning in TPI activities.

Following ethics approval, the survey was distributed to VET business studies managers using a purposeful sampling approach because of its exploratory nature. The dataset, unfortunately, has too many cells lacking responses, which makes the data unsuitable for meaningful statistical analysis. Consequently, hypothesis testing would not be meaningful in this context.

For the purposes of this research, 'managers' are defined as a head of school or head of department, or equivalent, responsible for coordinating or managing the delivery of courses in business studies; they bear direct responsibility for teaching staff and supervise them directly. Included in the survey were managers in private RTOs who are responsible for the delivery of AQF-accredited VET business studies courses, because most of these are, at least in part, publicly funded.

The survey outlined its purpose, stating that participation was voluntary, and assured potential participants that their data would be treated confidentially and anonymously, in accordance with ethics approval.

It should be noted that there was not a high number of VET education manager responses, although the respondents are responsible on average for between 331 and 488+ teaching staff (details are discussed in the next section). Consequently, we argue that the low response rate does not necessarily render the data invalid. Nevertheless, care should be taken in interpreting the findings reported on in this article. Because a study of this nature has not been undertaken before, the results should help to achieve a greater understanding of TPI initiatives from a different perspective, in this way adding to the body of knowledge in this area.

In Australia, the VET sector is divided among TAFE institutions, which are government-funded public entities, and RTOs, which are private concerns that receive significant government funding. This funding has been forthcoming because governments have sought to semi-privatise the VET sector in order to introduce 'managed' competition through government policy and funding. It should be noted that a discussion of government policies in this area is beyond the scope of this article.

The objectives of this study are to explore the following questions:

1. How aware are TAFE and RTO education managers of TPI schemes, and how familiar are they with them?
2. Do TAFE and RTO education managers believe TPI activities are beneficial to their organisation or to the individual teacher?
3. Are TAFE and RTO education managers prepared to support such schemes, and, if so, how?

The survey data, together with commentary and discussion, is presented in the next section.

Data analysis and discussion

In total, 18 responses were received, of which 11 were from TAFE institutions and seven from RTOs. In Australia, a total of 59 TAFE institutions, as government-funded bodies, typically offer the full range of courses, ranging from certificate to associate degree. The number of RTOs in Australia offering business study programmes is virtually impossible to determine. According to the Department of Education, Skills and Employment (DESE), as at February 2020 there were 3 253 RTOs able to offer training packages in business services. But the DESE figure cannot be relied upon because of a significant number of anomalies in the reporting. TAFE institutes are included in the RTO listing, effectively leading to a double-counting of the numbers. Commercial organisations that conduct in-house training for their staff only are also included in the numbers. Furthermore, the number of RTOs includes entities either with suspended registration or with pending re-registration Registration is valid for seven years and an application for withdrawal takes six months to process. Finally, it is known that many RTOs have a specific focus on international students, using university articulation pathways as the main enrolment drawcard. Regarding TPI activities, these RTOs have little relevance to the VET environment in Australia.

Given the anomalies in the data, it is not possible to derive a credible number of bona fide RTOs currently offering education in business studies in Australia. As TAFE and the RTOs do not divulge the number of heads of department responsible for business studies courses, it is not possible to estimate these. We are not, however, claiming that our sample is representative.

In the discussion, the data are presented separately for TAFE and RTOs. This allows, wherever possible, a comparison to be drawn between the respondents in the two different sectors. It was expected, from personal experiences, that there would be differences between the two groups, as their primary purposes differ – TAFE is wholly government-funded, whereas RTOs are profit-making ventures.

Demographic profile

The gender composition of the respondents – 61% (n = 11) females and 39% (n = 7) males – is broadly representative of the total teaching population in Australia, as 'females represent 55.5% of TAFE staff in Australia and this trend is consistent across all states and territories' (National Centre for Vocational Education Research, 2004:15).

The respondents spoke on behalf of between 331 and 488+ teachers. In trying to determine their level of experience and expertise, we found that 10 of the 11 TAFE respondents had been employed with their organisation for between 10 and 20 or more years, whereas all of the RTO respondents had been with their organisation for fewer than 10 years. Shorter-term employment periods have implications for longer-term workforce development and may limit opportunities for TPI activities, especially where full-time employees represent only a minor proportion of staff (37% in the case of TAFE and 23% in the case of RTOs).

Knowledge of TPI schemes

Knowledge of TPI schemes was reported as 100% by TAFE respondents, whereas five out of seven RTO respondents (71.4%) were not familiar with the TPI schemes. Although the exact reason for the comparatively lower level of knowledge of TPI schemes in RTOs is not known, we may infer that one causative factor could be the considerably lower, full-time, direct-reporting staff numbers. It may be argued that part-time and casual employees are given less consideration for staff development compared with full-time staff. It may also be argued that there is an assumption that, because these staff are not employed full-time, they are likely to have other work, possibly in an industry related to their area of teaching; and, if this is the case, this fulfils their teacher currency requirements and TPI activities would not be necessary. Of course, the same comments would also apply to part-time and casual TAFE staff, but the greater number of full-time staff numbers may also tend towards more professional development in order to meet the requirements for industry currency of TAFE teachers.

Industry knowledge and skills required by teachers

The respondents were asked whether TPI policies existed in their organisation. Notwithstanding the AQF-mandated requirements for teacher currency, it appears that not all organisations have policies in place to facilitate TPI, as shown in Table 2.

Table 2: TPI policies

INSTITUTIONAL POLICY TO FACILITATE TPI	TAFE	RTO
No	1	4
Not sure	3	1
Yes	7	2
Total	*11*	*7*

The majority of TAFE institutions appear to have policies in place and this may be related to their larger full-time staff complement needing professional development and the institutions ensuring that their teacher currency requirements are met. There is still a certain amount of ignorance about the existence of these policies, but there is no evidence, one way or another, to suggest that the lack of awareness of these policies is a hindrance to the creation of TPI opportunities. However, it may be argued that such ignorance may result in missed opportunities.

The respondents were asked if they had previous experience in supporting past TPI activities. Two RTO and five TAFE respondents (with one respondent having been involved in two TPI activities) reported as follows:

- RTO
  - Work-placement support; and
  - Work-placement referral.

- TAFE
  - Full-time industry release for three months as a means of upgrading industry currency;
  - Limited encouragement in non-teaching time;
  - A) Placement provided the teacher with direct links with the business and to meet their workforce development requirements and customise training to meet the needs of the industry;
  - B) Supporting a teacher to work in a small business to mentor their staff in the financial aspects of their job and keep industry current in bookkeeping;
  - Return to industry placements; staff working in their own hours within their field; and

> – When I previously supported a teacher, she took a combination of extended leave and leave without pay and related duties offsite as she was going to a paid role two days per week in a bookkeeping capacity.

As expected, the range of support varied from basic to more generous opportunities for teachers. The variety of opportunities may be linked to the organisational or individual need for a teacher currency upgrade in order to meet AQF and National Training Packaging requirements – the yardstick used being that the teacher should have industry experience that is no more than five years old, setting up a five-year 'skill-upgrade' cycle. Importantly, however, there is no minimum standard for the depth or length that the 'upgrade' should be.

In this context, a series of questions was asked of education managers about the level of time support they would provide their staff with for TPI opportunities, and their responses are summarised in Table 3.

Table 3: TPI time-release opportunities

TIME-RELEASE OPPORTUNITIES	TAFE	RTO
A one-month release for full-time work during the teaching period	2	1
A one-week release for full-time work in industry during the non-teaching period	1	6
A fractional teaching semester release for working in industry one day per week	3	0
A full teaching semester release for full-time work in industry	2	0
A two-week release for full-time work in industry during the teaching or non-teaching period	1	0
This should be determined by the purpose and desired outcomes of the placement	1	0
No response	1	0

The range of time support correlates well with previous Australian and South African studies conducted among VET teachers (Bergami & Schüller, 2009b; Schüller & Bergami, 2011; Schüller, 2013; Van der Bijl & Taylor, 2016). As Meadon (1990) suggests, a longer period of time is likely to yield greater learning benefits for the teacher and the host organisations, as 'deep learning often proceeds slowly' (Gela, 2004:8). However, TPI opportunities are driven by factors that are not necessarily within the control or influence of the TAFE education manager – the most obvious factor being that of the expenditure involved in implementing TPI opportunities. This point is captured, in part, in the next section.

Challenges of implementing and supporting TPI

The influencing factors affecting TPI opportunities negatively were identified through a series of 10 Likert-scale five-point questions: 'Strongly agree'; 'Agree'; 'Neither agree nor disagree'; 'Disagree'; and 'Strongly disagree'. For analysis purposes, the 'Strongly agree' and 'Agree' responses were combined, as were the 'Strongly disagree' and 'Disagree' responses. They are summarised below.

The main findings arising from these questions were as follows:

- Unfamiliarity with TPI arrangements was reported in 27.3% of the TAFE responses and 71.4% of the RTO responses. If we combine the RTO responses about TPI unfamiliarity and lack of policies, we can argue that these are barriers to learning new skills and, according to Fuller and Unwin (2004), this would point to a restrictive workplace.
- TPI activities that provide no added value to teaching programmes or no benefit to the department were rejected by 54.5% of TAFE respondents, but by only 14.3% of RTO respondents, with 57.1% remaining neutral. These responses suggest an expansive lens (Fuller & Unwin, 2004), as they indicate recognition of learning fostered by cross-company experiences and they encourage cross-boundary communication.
- Among TAFE and RTO respondents, a lack of resources to support TPI activities scored 72.8% and 71.4%, respectively. These responses indicate that under-resourcing appears to be a universal problem, regardless of the type of educational institution. Without adequate support, TPI activities are obviously much harder to undertake, if at all. A lack of resources to support TPI opportunities gives rise to a more restrictive environment by creating organisational 'barriers to learning new skills/jobs' (Fuller & Unwin, 2004) and the extent to which management can afford opportunities for learning (Billett, 2008). This also highlights the contradictory juxtaposition of VET policy calling for greater collaboration between VET and industry to support workplace learning, on the one hand, and VET's unwillingness to fund it, on the other.
- The notion that TPI activities offer no value for the host organisation, the teacher, students or the educational institution was rejected by 72.8% of TAFE respondents and 42.9% of RTO respondents, with 28.6% remaining neutral. Viewed in the context of a community of practice, education managers recognise that TPI activities contribute to workplace learning and developing social capital (Wenger, 1998; Brown & Duguid, 2000; Lesser & Prusak, 2000; Liedtka, 2000; Mitchell & Young, 2002; Kelly, 2003; Henderson, 2007).

Identifying a suitable host organisation willing to support TPI activities was regarded as a hurdle by 45.5% of TAFE respondents and 57.2% of RTO respondents. These responses support the notion that TPI initiatives are complex, with multiparty negotiations being required, as these activities are experiences of participation mediated by the contribution of the workplace (Billett, 2008), through mutual engagement, and through the sharing of a repertoire of knowledge across joint enterprises (Wenger, 1998) .

Evaluation of TPI outcomes

The respondents were asked to identify, from a given list, the best approaches for evaluating the effectiveness of TPI arrangements. This was another five-point Likert-scale question similar to the one used in the previous section, and it was treated likewise.

The top three approaches to evaluating the effectiveness and outcome of TPI activities are summarised in Table 4.

Table 4: Evaluation approaches in respect of top three TPI activities

	TPI EVALUATION APPROACHES	TAFE	RTO
1	The host organisation meeting or exceeding the teacher's professional development expectations	90.9%	91.9%
2	The teacher having access to adequate resources to support the industry placement initiative (e.g. induction; working space; work equipment; staff mentors)	91%	93%
3	Effective participation demonstrated through various forms of engagement and collaboration between the teacher, the organisation and the educational institution	90.9%	93.9%

It can be observed from Table 4 that there are implied commitments in TPI arrangements, for, in order to be able to evaluate these experiences, prior agreement needs to be reached in a three-way negotiation involving the teacher, the host firm and the educational institution. Item 1 is underpinned by stated goals and objectives agreed to prior to the commencement of the TPI, and this correlates with the need for 'mutually negotiated meanings and understandings' (Ling & McKenzie, 2001:9) across joint enterprises through a shared repertoire of knowledge and expectations (Wenger, 1998).

Item 2 is meant to ensure that the TPI experience is meaningful, that there is legitimate participation, even if it is peripheral, depending on the duration of the placement, and that the host organisation can facilitate an expansive approach (Billett, 2001; Billett, 2004; Fuller & Unwin, 2004; Unwin et al., 2009) and provide opportunities for Mode 2 knowledge.

Item 3 requires the teacher to be able to demonstrate, post-TPI, that the activities undertaken have value for the key stakeholders. If so, we can imply from this that the formation and nurturing of longer-term communities of practice can be pursued (Lave & Wenger, 1991; Wenger, 1998).

Finally, the participants were asked whether more should be done to nurture mutually beneficial alliances between educators and industry, to support workplace learning, build organisational capacities, and prepare work-ready graduates.

Despite the challenges associated with the TPI schemes mentioned above, the overwhelming majority of respondents (10 out of 11) answered the questions positively. These responses correlate well with the notions of communities of practice (Lave & Wenger, 1991; Wenger, 1998; Wenger et al., 2002) and with discourses supporting education–industry links (Skills Australia, 2010).

This article reported on and discussed the findings of a study in Australia, seeking the views of VET education managers of business studies on the value they place on TPI activities. Three questions were posed for this study and the answers to each are given below.

1. How aware are TAFE and RTO education managers of TPI schemes, and how familiar are they with them?

    The data revealed a lack of policies to support TPI activities and the answers about the challenges of implementing and supporting TPI indicate there is some knowledge of TPI schemes, but that this was not as high as expected. We argue, here, that the lack of institutional policies regarding TPI schemes, coupled with the poor dissemination of information about them, may be a factor hindering their development to their full potential.

2. Do TAFE and RTO education managers believe that TPI activities are beneficial to their organisation or the individual teacher?

    Based on the answers about the challenges of implementing and supporting TPI activities, the vast majority of TAFE respondents (72.6%) believe this to be so. The situation with RTO respondents is less clear, as only 42.9% agreed that benefits could be reaped and 28.6% gave a neutral response. If the responses are considered in aggregate terms, then the majority agree that TPI activities are beneficial at the individual and organisation levels. A contributing factor to the more negative perceptions about TPI scheme benefits may be the answers to the previous question, that is, that if there is a lack of policies and knowledge about TPI schemes, it may be more likely that TPI is viewed less favourably as a result of ignorance about it. The responses to Question 2 may therefore have been influenced partly by the responses to Question 1.

3. Are TAFE and RTO managers prepared to support such schemes, and, if so, how?

    While there is overwhelming support for TPI activities, the level of support varies. Based on the data in Table 4 it appears that TAFE has a greater propensity for a more varied placement approach, but, as one respondent succinctly put it, 'and, of course, what is able to be negotiated at the educational institution level, with the host organisation, and the ability of the individual to pursue opportunities'. This highlights the complexities of mediating workplace learning and development alluded to by

Engeström (1987), Gibbons et al. (1994), Engeström and Cole (1997), and Billet (2001, 2004).

In Australia, currently, TPI arrangements are not mandatory, and are not incorporated into human resource planning either. Perhaps these should form part of future workforce planning through their incorporation in employee work plans, as suggested by Van der Bijl and Taylor (2016).

Conclusion

In conclusion, this study has pointed to the complex nature of TPI arrangements from the perspective of education managers, whose role influences TPI initiatives and continues to be central to their success. It is encouraging to see the high level of in-principle support reported by the respondents, despite the challenges associated with these initiatives. Education managers see value in TPI activities for their teaching programmes and their departments as well as for the teacher, the student and the host organisation. However, the challenges remain, because not all of the institutions have policies in place to support these initiatives; and even when such policies exist, they are not well formulated. Furthermore, TPI activities are generally under-resourced.

Accordingly, there is scope for more research in this area aimed at discovering the drivers behind support for educational institutions. Some of the questions that could form part of future research may include these: For the educational institution, is TPI merely about compliance with a five-year upskilling cycle to meet AQF requirements, or is there more to it? What are the incentives for private firms to facilitate TPI activities? How do stakeholders benefit in all of this? How could TPI outcomes be measured meaningfully and transparently? What reforms may be needed to correct the contradiction between policies encouraging TPI and the practice of providing little, if any, funding to have them implemented?

Further research on these aspects of TPI schemes and experiences is certainly warranted in order to learn whether there is the scope to influence governments to enhance TPI initiatives.

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Motivating styles in dual, initial vocational education and training

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ABSTRACT

In Switzerland, individuals who follow the typical dual form of an initial vocational education and training (VET) programme to learn a trade do so at two main learning sites: a training company and a vocational school. In this context, apprentices' motivations differ noticeably between the school and the training company. Based on the self-determination theory constructs of motivating styles, basic psychological needs, and autonomous versus controlled motivations, this study aims to understand how apprentices perceive their teachers' and trainers' motivating styles, control and autonomy support at the two learning sites. Three hundred and twenty apprentices provided written answers to open-ended questions. We coded the data using thematic analysis. While the exercise of control appeared to be rather similar at the two learning sites, autonomy support varied greatly. At the vocational school, autonomy support was expressed through teachers' listening skills and availability; at the training company, it was related to independence and equal recognition of apprentices and employees. The apprentices perceived teachers as having a more controlled motivating style and in-company trainers as having a more autonomy-supportive style. At the school, control was described primarily as organisational pressure and teachers' demands, whereas, at the training company, it was reflected in a lack of recognition and thankless tasks. We discuss the relationship between motivating styles and the satisfaction of basic psychological needs in the context of dual VET.

Introduction

Students' motivation to learn a certain topic is a product of both the person and the environment (Bandura, 1997): it is influenced by multiple factors that are both individual and contextual. Individual factors, such as an abiding interest in the topic and self-efficacy beliefs, relate to one's prior experience with this topic. Contextual factors relate primarily to the way in which teaching practices are perceived by the student (Ames, 1992; Ryan & Deci, 2017). Extensive research illustrating the relevance of these contextual factors has been conducted with learners/students from primary education through to university level (Volet & Järvelä, 2001). However, such research is still in its infancy in non-mainstream education, specifically in vocational education and training (VET), which aims to train apprentices in an occupation.

In Switzerland, adolescents and young adults following the typical dual form of an initial VET programme in order to learn a trade find themselves in a situation where they learn at two main learning sites: a training company and a vocational school.[1, 2] These sites have different organisations, expectations and actors. Furthermore, in the dual VET system, the training company plays a major role in preparing apprentices for their professional futures. There are fundamental differences between the two learning sites, most notably in the type of knowledge, in the way the learning takes place, and in the apprentices' sense of belonging, as summarised by Gurtner, Gulfi, Genoud, De Rocha Trindade and Schumacher (2012) and Tynjälä (2008; see 3.1). Owing to these differences, apprentices have strikingly different motivations to learn in the two environments (Krapp & Lewalter, 2001; Prenzel, Kramer, & Drechsel, 2002; Lewalter & Krapp, 2004; Gurtner et al., 2012).

While researchers have documented the differences in motivation, there is limited knowledge of the factors that can affect apprentices' motivation at the two learning sites. Such factors have been described and conceptualised by several motivational theories, most notably by the self-determination theory (SDT) (Deci & Ryan, 1985; Ryan & Deci, 2017). Therefore, based on the answers to a set of open-ended questions, this article examines the ways in which apprentices' motivation is influenced, from their own point of view, by the vocational school and the training company environment.

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1   The apprentices are hired by a company that offers to train them for a specific occupation. This training company decides on the selection procedure, which may include an aptitude test, an interview and a short internship. Several publications offer a thorough description of the system and its actors (Strahm, Geiger, Oertle, & Swars, 2014; Wettstein, Schmid, & Gonon, 2017).

2   There is a third learning site, the 'branch courses', where apprentices in an occupational field are taught in weekly workshops on topics not integrated in the school curriculum (e.g., the use of an innovative material). Much less time is spent at this third learning site than at the other two.

Motivation, motivating styles, and basic psychological needs

Learning is driven by various motivations that lead to specific outcomes and experiences. SDT, a theory of human motivation and behaviour, suggests several fundamental distinctions among motivation types, such as the basic dichotomy between autonomous and controlled motivations (Ryan & Deci, 2017). Autonomous motivation 'involves the regulation of behaviour with the experiences of volition, psychological freedom, and reflective self-endorsement', whereas controlled motivation 'involves the regulation of behaviour with the experiences of pressure and coercion to think, feel, or behave in particular ways' (Vansteenkiste, Niemiec & Soenens, 2010:118). Autonomous and controlled motivations comprise seven types of motivation (intrinsic motivation, multiple types of extrinsic motivation, and amotivation) that describe motivated behaviour and which have been studied for more than four decades (for definitions of these seven types of motivation, see Ryan & Deci, 2000). Both intrinsic motivation and integrated and identified regulations are considered to be examples of autonomous motivation; introjected and external regulations and also amotivation are considered to be examples of controlled motivation.

Research has shown persuasively that autonomous and controlled motivations involve different qualities. Autonomous motivation has beneficial effects on learning, such as higher valuing of school, less work avoidance and greater effort (Ryan & Deci, 2017). In contrast, controlled forms of motivation demonstrate detrimental effects on learning, for instance poor maintenance and transfer of knowledge and less effort, as the task is performed without any link to personal value (Ryan & Deci, 2017). Accordingly, the reasons why learners' motivation is more or less autonomous and how it can be influenced is of major interest for improving learning outcomes. As reported by SDT, the reasons for more autonomous or more controlled motivation can be found in the degree to which students' basic psychological needs are satisfied (Ryan, 1995). These needs can be either satisfied or frustrated by various factors in the student's environment.

One central factor in the environment is the teacher's motivating style, which refers to the interpersonal practices that the teacher relies on to foster students' motivation[3] (Aeltermanl, Vansteenkiste, Haerens, Soenens, Fontaine & Reeve, 2018; Deci & Ryan, 1987). The theory assumes that students' motivation (controlled vs autonomous), perceived competence and, more generally, well-being are dependent on features of the environment, which include the behaviours of teachers and trainers (Dysvik & Kuvaas, 2014; Deci, Olafson & Ryan, 2017). Specifically, the theory conjectures that students' motivation becomes more adaptive when the teacher's motivating style satisfies their basic

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3   According to SDT, a teacher's motivating style in respect of students can be conceptualised along a continuum that ranges from highly controlling to highly autonomy supportive. Teachers differ widely in their use of control versus autonomy support to motivate students (Ryan & Grolnick, 1986), and the style that a teacher uses will remain relatively stable throughout the academic year (Deci, Schwartz, Sheinman & Ryan, 1981). Increasingly, researchers have been studying a complementary continuum: structure as opposed to chaos (Aelterman et al., 2018; Reeve, Jang, Carrell, Jeon & Barch, 2004). The present study focused on the control–autonomy continuum as it was the one most present in the data.

psychological needs (Ryan & Deci, 2017). STD posits three fundamental needs common to all human beings: for autonomy, for competence and for relatedness. The need for autonomy refers to the feeling that one's actions emanate from oneself and are one's own. The opposite of autonomy is heteronomy, which means acting 'out of internal or external pressures that are experienced as controlling' (Ryan & Deci, 2017:86). Furthermore, autonomy is different from independence (Soenens, Vansteenkiste, Van Petegem, Beyers & Ryan, 2018b). Independence refers to the degree of dependence on others and to the question of who is regulating one's actions; therefore, this concept is interpersonal. Autonomy, reflected in volitional functioning, refers to 'within-person concordance'; that is, to 'the degree to which behaviours or goals are aligned with one's deeply held values, preferences, and interests' (Soenens et al., 2018b:6). The need for competence corresponds to a sense of effectiveness and efficiency in one's interactions with the environment (White, 1959). It requires the experience of opportunities to exercise, develop and express one's capacities (Ryan & Deci, 2017). This need can be satisfied by a motivating style called 'structure', which consists of transmitting information and direction to scaffold, support and enhance learners' competence development (Ryan & Deci, 2017). Conversely, the absence of structure tends to frustrate this need. The need for relatedness is expressed by the experience of having close and meaningful relationships. It is satisfied when one experiences caring and being cared for – in other words, when there is mutual concern between oneself and others. This need, which is also named the 'need to belong' (Baumeister & Leary, 1995), has been shown to have both emotional and cognitive implications. The satisfaction of all three needs is considered necessary for psychological growth.

Research has shown that the degree of need satisfaction is related to teachers' motivating styles (Ryan & Deci, 2017; Aelterman et al., 2018). The two most prominent and studied motivating styles are autonomy support, which is defined as 'the interpersonal sentiment and behaviour teachers provide to identify, nurture, and develop students' inner motivational resources' (Reeve, 2009:159), and control, which refers to the 'interpersonal sentiment and behaviour teachers provide during instruction to pressure students to think, feel, or behave in a specific way' (Reeve, 2009:160).

Autonomy-supportive practices are reflected in teachers' behaviour that exhibits consideration for students. Examples of such practices include listening to students even if they express negative emotions, offering them an opportunity to talk about themselves and their interests, and acknowledging their perspective and efforts. Whereas some researchers include behaviour that reflects structuring practices, such as offering hints when necessary, specifying how the material can be learnt or providing clear expectations, in autonomy-supportive practices the recent conceptualisation convincingly differentiates structure from autonomy support both conceptually and empirically (Reeve et al., 2004; Aelterman et al., 2018).

Controlling practices are visible in teachers' behaviours that neglect students' perspectives and focus strictly on their own agenda and concerns. Controlling practices include such behaviours as providing the right answer without leaving time for students to arrive at it

themselves, using language aimed at controlling students (demands and directives) rather than informing them, or using direct questions to control the flow of the conversation.

These motivating styles are assumed to satisfy, in the case of autonomy support, or to thwart, in the case of control, all the needs of students (Vansteenkiste et al., 2010; Ryan & Deci, 2017). Empirical research has supported this theoretical association, especially in the school environment (Patall, Steingut, Vasquez, Trimble, Pituch & Freeman, 2018). Accordingly, there are strong relationships between the three elements of the theory: teachers' motivating styles, the degree of need satisfaction, and students' motivation.

Following the seminal work of Deci et al. (1981), numerous studies undertaken in the school environment have investigated how teachers' and adults' motivating styles relate to and affect the satisfaction of students' needs. In their review of the studies on teachers' motivating styles in the school environment, Aelterman et al. (2018) concluded that the provision of autonomy support satisfies the three basic psychological needs. In turn, this fosters students' self-regulation of learning, well-being, interest and engagement. A controlling motivating style, in contrast, has been found to increase need frustration and to result in students' amotivation and disengagement.

Prior research on motivation in the dual VET context

While most research on the topic of motivating styles was conducted in school contexts (Deci, Spiegel, Ryan, Koestner & Kauffman, 1982; Garcia & Pintrich, 1996; Vansteenkiste et al., 2012), these styles are also relevant in the context of workplace learning. Indeed, research shows that both teachers and in-company trainers can have a considerable impact on apprentices' motivation and engagement (Lewalter & Krapp, 2004; Messman & Mulder, 2015; Lauermann & Berger, 2019). Furthermore, workplace training has recently become a subject of interest for SDT researchers (Dysvik & Kuvaas, 2014). However, few studies have investigated the motivational specificities of the dual VET system, that is, a combination of both school-based and company-based training (Prenzel et al., 2002; Gurtner et al., 2012; Gebhardt, Martinez Zaugg & Metzger, 2014). This setting offers heuristic potential for studying motivating styles and their variations, depending on the training environment. Such a study might provide new insights into apprentices' motivation and basic psychological need satisfaction. Given the dearth of knowledge on how these motivating styles operate in the context of dual VET, further research seems warranted.

Differences between the learning sites in dual VET

In Switzerland, VET is the most popular educational track after compulsory schooling. Roughly every two out of three young people pursue an apprenticeship (Swiss Federal Statistical Office, 2017), and the majority of them do so in a dual form, that is, by spending one or two days per week at a vocational school and the rest of the week at a training company. Initial VET is sanctioned by certificates and diplomas obtained in a two-, three-

or four-year programme, which provide good opportunities for professional integration (Swiss Federal Statistical Office, 2018). This dual training system – praised internationally and frequently proffered as an example of optimal VET – allows apprentices to learn a trade by focusing on the practical side of it while developing the necessary theoretical and general knowledge.

The two learning sites providing the initial VET have different ways of preparing apprentices for a trade: vocational schools focus on conceptual knowledge (vocational and general knowledge) (De Jong & Ferguson-Hessler, 1996), whereas training companies provide opportunities for developing procedural knowledge and practical skills. While vocational schools and training companies are formally connected and cooperate to a variable extent to train apprentices, specific logics exist in each learning site (Prenzel & Drechsel, 1996; Sappa, Choy & Aprea, 2016; Gurtner, Furlan & Cattaneo, 2018). Among the various logics specific to each learning site, at a vocational school apprentices evolve in a learning logic, whereas at a training company a production logic predominates. These two logics lead apprentices to experience their training differently at the two learning sites (Gurtner et al., 2012; Gurtner et al., 2018). First, the level of formality is significantly lower at a training company because the curriculum is less detailed, even if the aims are specified; thus, learning happens in a less intentional way. However, at a training company the problems are real, whereas they are artificial or created at a vocational school.

Regarding the knowledge produced, it is implicit, tacit and situation-specific at a training company, whereas, at a vocational school, knowledge is explicit and skills are generalised (Tynjälä, 2008). Also, the ways of demonstrating the acquired knowledge are different at the two learning sites: at the schools, vocational knowledge is assessed by tests or examinations, whereas procedural knowledge acquired at the training companies is demonstrated in action, in practical situations (Gurtner et al., 2018). Furthermore, apprentices, based on their previous school experience, attend vocational schools with a different attitude and view them with a more critical eye. It must also be taken into account that, as a result of organisational conditions, teaching at the vocational school cannot provide individualised feedback to the same extent that the training at a training company does (Prenzel & Drechsel, 1996). These differences lead to motivations that are specific to each learning site: apprentices attribute different values and expectations and, more generally, they are differently motivated at the two learning sites (Krapp & Lewalter, 2001; Gurtner et al., 2012).

Different learning sites, different motivations

In terms of autonomy support and control, apprentices are supposed to experience greater independence at a training company. Indeed, they are in a work environment and are part of the company's workforce, which implies that they might be treated as qualified employees rather than as apprentices (Billett, 2001). In contrast, at a vocational school, apprentices have student status and are under the supervision of a teacher. Such a difference in status could be the source of contrasting motivations for apprentices. More precisely, they are more

autonomously motivated in their in-company training because of their role and the fact that they can learn in a practically oriented way (Prenzel & Drechsel, 1996; Prenzel et al., 2002). At the training company, the material is displayed in a practically oriented manner, which better supports apprentices' interests compared with the more theory-based teaching offered at the vocational school (Lewalter & Krapp 2004). Accordingly, Krapp and Lewalter (2001:227) have explained that

> this context [the training company] seems to be more encouraging regarding the development of interest-related motivational dispositions by supporting the genesis of topic-specific individual interests respectively maintain a somewhat higher intensity of intrinsic (and extrinsic) motivational orientations.

In contrast, at school, apprentices are subjected to the education system and its rules; therefore, apprentices tend to have more controlled motivation (or even amotivation) and less autonomous motivation (Prenzel & Drechsel, 1996). Furthermore, studies have shown that apprentices feel a stronger sense of belonging to the training company compared with the vocational school (Gurtner et al., 2012). Together, these differences in apprentices' status, as well as the distinct logics between the learning sites, may explain why apprentices seem to have more autonomous motivation while undergoing the in-company training component than while learning at a vocational school (Prenzel et al., 2002).

In Switzerland, a study conducted by Gebhardt et al. (2014) showed that apprentices' motivations for learning at the training company were primarily autonomous (identified regulation and intrinsic motivation) and only to some extent controlled (external regulation, introjected regulation). Amotivation was found to be very low. According to Prenzel et al. (2002), the greater autonomous learning motivation at the training company compared with the school might be explained, in accordance with SDT, by the conditions of motivated learning at the two learning sites. In their study, the training company was perceived as more relevant in terms of content and as providing more relatedness, more support for competence, and more support for autonomy.

In sum, the most autonomously motivated apprentices in the workplace believed that their environment was strongly supportive of their motivation. The only conditions that were seen as more motivating for learning at the vocational school were related to the quality of instruction measured according to the structure and the adaptation to apprentices' prerequisites (Prenzel et al., 2002). Finally, a study by Messmann and Mulder (2015) confirmed that perceived autonomy is a supportive condition that is associated with the degree of engagement in learning at the training company.

Aims of the study

Based on the SDT constructs of motivating styles, basic psychological needs and autonomous versus controlled motivations, this study aimed to understand how apprentices perceive their

teachers' and trainers' motivating styles and how such perceptions differed between the two learning sites. This study was part of a project which aimed at describing what constitutes quality of training at vocational schools and at training companies in the context of dual VET in Switzerland (Berger, 2018–2022).

Method

Participants

A total of 320 apprentices enrolled in a Swiss dual, initial VET programme (Mage = 18.8; SD = 3.15) participated in the study. They attended two different dual programmes at two vocational schools: technical occupations (e.g. information technology (IT) technicians and electronic engineers; n = 188, 10.5% women) and retail occupation (n = 132, 64.1% women). They were spread across three training years for the retail occupation and across four years in the technical occupations. The company size, as reported by the apprentices, varied from small (fewer than 50 employees: 45%), to medium (50–249 employees: 15%), to large companies (more than 250 employees: 36%).

Data collection

During class time and under the supervision of a research team member, the participants were invited to answer open-ended questions as part of a questionnaire on the perceived quality of education and training at the school and at the training company (Sauli, Wenger, Gross & Berger, 2019). For each of the two learning sites separately, the apprentices were asked to answer the following questions:

(1)   'What do you like in your education at the school/the training company?'

(2)   'What are the positive aspects of your education at the school/the training company?'

(3)   'What could be improved in your education at the school/the training company?'

The written and oral instructions emphasised that at least three short answers were expected for each question. The questions did not directly target teachers' and trainers' motivating styles. This topic was revealed by the thematic analysis of the data.

Data analysis

The answers were transcribed and imported into NVivo software. We did not analyse the data separately for each open-ended question. However, the answers to the three questions about education at the school were analysed together and separately from the answers to the three questions about education at the training company, which were also analysed together.

First, the corpus of data was read inductively to extract one preliminary set of codes referring to the vocational school and another referring to the training company. The codes were then discussed by the research team in order to reduce interpretation bias and to establish links with theories in education and psychology. Secondly, the data were analysed both inductively, that is, keeping in mind the codes found in the previous step, and deductively by taking into account the theories discussed among the research team (Saldaña, 2013). The coding scheme was refined over several rounds and the overlaps between codes were reduced. A total of 3 713 meaning units were coded: 1 872 referred to quality at the school (using 17 codes) and 1 841 at the training company (using 18 codes). Inter-coder agreement, based on 5% of the statements, was satisfactory (school: Cohen's κ = .782, company: κ = .735).

Among the 35 codes, four, representing a total of 406 meaning units, were analysed in the present study:

(a)   Autonomy support at the school (89 meaning units);

(b)   Autonomy support at the training company (111 meaning units);

(c)   Control at the school (150 meaning units); and

(d)   Control at the training company (56 meaning units).

Specifically, autonomy support refers to practices that satisfy apprentices' basic psychological needs, such as when the apprentice is adequately supported by the teacher in the development of their motivation and self-regulation (at the school) or when they are given certain choices and flexibility in accomplishing tasks (at the training company). Typical meaning units that were coded as autonomy support included words such as 'availability', 'support', 'listening' or 'help' for the school, and words such as 'autonomy', 'responsibility' or 'trust' for the training company. The codes regarding control, both for the school and for the training company, referred to the pressure and the demands to meet the objectives fixed by the school or the training company. Moreover, misrecognition of status and inappropriate task assignments were also coded as control because of the neglect of students' perspective and the lack of reflective self-endorsement that they imply. At the school, some of the typical words used were 'homework', 'exams' and 'exercises'; at the training company, they were 'workload', 'overload', 'treatment' and 'tasks'.

Findings and discussion

First, this section presents the main findings. We briefly introduce the frequency and content differences between the learning sites. Then we analyse each category in more detail in four distinct subsections. Providing an overview of the apprentices' responses, Table 1 lists examples for each of the four codes: *school: autonomy support; school: control; company: autonomy support;* and *company: control.*

Table 1: Examples of autonomy support and control at the vocational school and training company

	EXAMPLE OF AUTONOMY SUPPORT	EXAMPLES OF CONTROL
Vocational school	The teachers are great because they listen to us. [F; 3rd year; Retail]	There is a lot to do at home, which gives me the impression that the teachers do not realize that we also work the rest of the week. [M; 2nd year; Technical]
	The teachers are available when you do not understand, you can always call on them or send them emails when something is not understood. [F; 1st year; Retail]	There must be trust and no need to fill out absence forms in order to be justified. [F; 1st year; Retail]
	Some teachers are not listening enough to our needs and opinions [F; 3rd year; Retail]	School should not treat people as if they were 'children' (having detention when you are 22 years old). [F; 1st year; Retail]
Training company	We learn to manage ourselves on our own. [F; 3rd year; Retail]	Apprentices are considered incompetent. [M; 2nd year; Technical]
	Very autonomous: my trainer trusts me and lets me handle tasks myself. My trainer considers me sufficiently qualified to undertake a large part of the work. [M; 3rd year; Technical]	As apprentices, we sometimes do not receive the right treatment. People think we are here to do the undesirable work, while we are actually here to be trained. [M; 2nd year; Technical]
	I have the freedom to work as an employee and not as an apprentice. They value the work we do. [F; 2nd year; Retail]	I am not a mover or a cleaner. [M; 3rd year; Technical]

Note: F = female   M = male

Overall, the apprentices showed different types of concern regarding the vocational school and the training company. Whereas the apprentices tended to consider autonomy support at the vocational school through their teachers' autonomy-supportive practices, they broached autonomy at the training company in a more direct and intra-individual manner by speaking of the autonomy and independence they might experience in their work. Concerning control, the analysis of the statements revealed fewer fundamental distinctions regarding autonomy support between the two learning sites. Both learning sites were described as exerting pressure, for example through 'exams' at the school and 'workload' at the training company. Moreover, the apprentices declared that they were

wrongly acknowledged at both learning sites because they were seen as 'children' rather than 'adults' at the school and treated as 'employees' rather than 'trainees' at the training company. Relative to the total number of statements referring to the vocational school, the apprentices mentioned control more often (35.3%) than autonomy support (20.6%). Moreover, autonomy support was presented in a less diverse manner than control. Indeed, autonomy support was largely referenced in relation to teaching practices, such as availability and eagerness to listen to the apprentices. In contrast, control was reflected as organisational workload, teaching practices, teachers' expectations and status recognition. In sum, the differences between autonomy support and control were present not only in the frequency of mentions but also in the diversity of the subjects brought up.

Concerning the training company, the apprentices spoke more about autonomy support (27.2%) than about control (15.6%), which immediately denotes a different tendency than the results for the school. When we focus on the content, we find that the main differences between the vocational school and the training company lay in the way the apprentices considered autonomy support. At the school, autonomy support consisted of supporting the apprentices' intrinsic motivation to learn, whereas, at the training company, the apprentices described their feeling of autonomy in a manner that approached the concept of independence. The feeling of autonomy entailed, for instance, performing tasks by themselves, without assistance from trainers or colleagues. In contrast, concerning control, while the frequency of mentions differed largely depending on the learning site, the apprentices' descriptions regarding the vocational school and the training company were fundamentally similar. The following sections present in more detail the way in which the apprentices described autonomy support and control for each of the two learning sites.

School: Autonomy support

By and large, the apprentices referred to the teachers' ability to listen and understand them. The teachers were either positively presented as understanding and available or negatively described as irritable and unsupportive when faced with the apprentices' requests:

> *Listening supports us in facing our difficulties.* [Female (F); 1st year of training; Retail]

> *Some teachers can get angry quickly and do not understand and could take more time.* [F; 1st year; Retail]

These statements revealed the importance that the apprentices attributed to availability, listening, and the dispositions of attentive teachers. Most of these comments were general in the sense that they did not focus on specific topics. Because of the school environment, it was possible to infer that the apprentices referred to teaching and learning processes. However, some more detailed statements suggested that these comments sometimes applied to the

training company too. Furthermore, the teachers' dispositions might have positive effects on relational and motivational aspects, as mentioned in some statements:

> *Teachers' understanding of students (not enough trust).* [Male (M); 1st year; Technical]

> *Having trusted teachers.* [F; 3rd year; Retail]

> *Teachers motivate us to learn.* [M; 3rd year; Technical]

Overall, these statements echoed what prior research on autonomy-supportive practices (Deci & Ryan, 1987; Reeve et al., 2004; Aelterman et al., 2018) observed in teachers' behaviour when demonstrating considerations for apprentices through availability, listening and trust. In that sense, autonomy support did not look any different in VET schools than in studies with younger learners and other educational tracks.

As stated before, the apprentices spoke less frequently about autonomy support than control at the school, and, moreover, demonstrated a more diverse picture of control, as shown in the next section.

School: Control

The amount of work assigned at the vocational school was one of the more central and frequent difficulties mentioned by the apprentices. More precisely, they reported a problematic gap between the work that they were expected to produce and the lack of time and energy they had left at the end of the day. In the dual system, apprentices must balance school duties, such as homework and examination preparation, with their work at the training company. Many of them declared that they lacked the time to accomplish these tasks because of work schedules during the rest of the week:

> *The problem with school is that sometimes there is too much homework while we all already work a lot for our company, and we are exhausted when we get home at the end of the day.* [M; 3rd year; Technical]

> *We do not always have time to study because of work schedules.* [F; 1st year; Retail]

> *To give less homework because, in our training, we go through long days and we do not always have time… . Also, when we come home in the evening, we are tired, we eat, we shower, and we go to bed.* [F; 1st year; Retail]

These pressures and other demands that the apprentices confessed to facing in their schooling were attributed to two main sources: the curricular organisation at large and the teachers in particular. Indeed, the gap between the workload and the time available, for example, could be considered as an organisational issue, but while some of the apprentices referred to the

amount of work in a general manner by broadly mentioning their training, others specifically held their teachers responsible. Through various statements, some subjects interchangeably appeared as organisational or teacher-related problems. Workload, homework or examinations, for example, were mentioned as excessive by those apprentices targeting their teachers directly or indirectly:

> *Less homework to do at home.* [M; 3rd year; Retail]

> *Rethink instruction because we have too much to do in a short time.* [M; 3rd year; Technical]

> *Better coordination between teachers so we do not have all exams [for] every class at once.* [M; 3rd year; Technical]

> *There is a lot of work to do at home, which gives me the impression that teachers do not realise that we also work the rest of the week.* [F; 3rd year; Retail]

Beyond a simple complaint about the training's high demand in terms of workload, statements focusing on teachers' responsibility in respect of this issue could reflect a widespread feeling that the teachers do not recognise the work that the apprentices accomplish outside of the vocational school. This interpretation stems from other issues raised by the apprentices regarding teachers' expectations and the lack of recognition that they sometimes perceived. Indeed, on the relational level with teachers, the apprentices referred to the lack of trust that they had to face and to a tendency to still be considered as 'children' instead of 'adults':

> *The school should not treat people like they are 'children' (having detention when you are 22 years old).* [F; 3rd year; Retail]

> *Some teachers should stop thinking we are children.* [F; 1st year; Retail]

> *There must be trust and no need to fill out absence forms in order to be justified.* [F; 1st year; Retail]

This lack of trust might be due to striking differences regarding what the apprentices experienced at the training company. Owing to the dual nature of the training, they discovered a new status in their training-company setting by bearing responsibilities and undertaking some tasks independently. This might highlight the contrast with controlling measures inherent in the school system. Indeed, various statements underlined the wish to be recognised as 'adults' and to experience more independence from teachers:

> *Be treated less like children but more like adults who will enter the labour market.* [F; 1st year; Retail]

> *More 'freedom'. They restrict us too much with the phone, for example. We are adults and we know very well that we must not use it during classes.* [F; 3rd year; Retail]

As Ryan and Deci (2017) assumed, a controlling environment might thwart apprentices' psychological needs and, therefore, undermine autonomous motivation. As a central component of the learning environment, teachers have a great amount of influence on apprentices' motivation to learn. Some of the apprentices' statements specifically illustrated their perceptions of the teachers' role in the negative aspects of their training and the way that the teachers exercised control by assigning an excessive workload. This perceived pressure through workload presumably obstructed the opportunity for the apprentices to develop autonomous motivation to learn because of the teachers' lack of consideration for their efforts, which were mostly produced at the training company. Furthermore, feeling submerged under an excessive amount of work might also lead to a feeling of incompetence and lower autonomous motivation (Dysvik & Kuvaas, 2014). Indeed, a match between job requirements and perceived competence is one of the conditions for experiencing autonomous motivation (Dysvik & Kuvaas, 2014). Some of the apprentices also declared that they perceived this workload as lack of consideration for their work outside of the school, which would translate to a lack of relatedness with teachers. Furthermore, the feeling of being infantilised presumably impeded the sentiments of competence and relatedness that the apprentices would need in order to be autonomously motivated (Lamamra & Masdonati, 2009).

Training company: Autonomy support

While in the school environment the apprentices mentioned teachers' availability, trust or listening skills – which are considered typical autonomy-supportive behaviours – they rarely discussed autonomy support explicitly in the training company environment. In the latter, the apprentices clearly acknowledged the 'autonomy' and 'independence' that they experienced. These two words seemed to be used synonymously. Interestingly, the apprentices expressed this 'autonomy' in a polysemous manner, either in relational or in personal terms. In relational terms, they referred to how they were expected to accomplish a task, that is, by themselves, without direct support. In personal terms, they referred to autonomy as a competency that they were developing. Indeed, some of the apprentices mentioned their 'autonomy' or 'freedom' without referring to a specific work task, which corroborates the idea of autonomy on a personal level, and beyond a relational characteristic with the trainer:

> *What I like is being free. My superior gives me a task for a day, and he lets me carry it out as I wish, as long as deadlines are respected. It is this autonomous aspect that I like in a company.* [M; 3rd year; Technical]

> *The boss gives me a lot of freedom.* [M; 1st year; Technical]

> *We learn to manage ourselves on our own.* [F; 3rd year; Retail]

> *Development of autonomy in a job.* [M; 3rd year; Technical]

This question of independence in the training company was also intertwined with the issue of recognition. Indeed, the apprentices praised being considered like 'employees' when undertaking a task, which denoted egalitarian considerations with colleagues:

> *I have the freedom to work as an employee and not as an apprentice. They value the work we do*. [F; 2nd year; Retail]

> *To be considered a normal employee when I have specific tasks to perform – to be free without always checking*. [M; 1st year; Technical]

Here, the apprentices demonstrated a will to be, and a satisfaction with being, considered as 'employees' rather than as 'apprentices'. This recognition implied receiving both autonomy support and acknowledgment and respect. Moreover, being considered as equals among colleagues certainly produced high confidence in one's own competence at work. Autonomy and equal status recognition presumably promote apprentices' autonomous motivation. Although what the apprentices called 'autonomy' at the training company differed from the observations made in the school environments (Reeve, 2009), it might still be an autonomy-supportive aspect of their work environment. Indeed, the apprentices valued the freedom that they received from their training to carry out their activities because it presumably allowed them to handle the tasks in their own manner. Moreover, autonomy might be perceived as evidence of trust from colleagues and in this way promote sentiments of both competence and relatedness (Ryan & Deci, 2017). As stated, autonomy varied greatly between learning sites. The next section focuses on control in the training company, which displayed characteristics similar to control in the vocational school.

Training company: Control

In the training company environment, the apprentices referred to the workload and the difficulties in getting the word done, using terms such as 'pressure' and 'stress' frequently and in a non-specific manner; for instance:

> *… too much stress*. [F; 1st year; Retail]

As observed in the school environment, although these comments were mainly brought up in a systemic manner, a few statements directly targeted trainers or managers:

> *The manager is very stressful for us*. [F; 2nd year; Retail]

Another observation that echoed the school environment, although less frequently so, was the gap between the amount of work and the time available, and even how this workload could eat into free time or other professional tasks:

> *I do not always have the time to meet my goals.* [F; 2nd year; Retail]

> *Less pressure, less work hours, because sometimes we do not have enough time to study.* [F; 2nd year; Retail]

However, the subject relating to the training in the company that was most frequently mentioned was status recognition. More precisely put, many statements focused on the misconceptions that trainers and colleagues held of the apprentices' status. Again, in parallel with the school, whereas the teachers were said to regard the apprentices as 'children' instead of 'adults', the trainers and colleagues were said to consider the apprentices 'employees' or 'workers' instead of 'trainees' or 'learners':

> *My trainer (manager) thinks of me as an employee and not as an apprentice.* [F; 2nd year; Retail]

> *Apprentices are treated as workers and not as learners.* [M; 2nd year; Technical]

Being recognised as an apprentice implied being treated in a specific and adapted way that would differ from the way in which an employee was treated. Indeed, the apprentices expected tasks oriented towards formative goals and with adequate consideration of their prior knowledge:

> *Sometimes we are not very well trained. We are seen as employees who already know the trade, so we do not get much information.* [M; 2nd year; Retail].

Furthermore, neglecting this formative dimension led trainers to assign tasks that the apprentices considered as inappropriate to their training:

> *As apprentices, we sometimes do not receive the right treatment. People think we are here to do the undesirable work, when we are actually here to be trained. I think this aspect should be improved so that the training is optimal.* [M; 3rd year; Technical]

> *I am not a mover or a cleaner.* [M; 3rd year; Technical]

> *Lack of very complicated tasks for me to improve.* [F; 1st year; Technical]

These misconceptions might have various deleterious consequences, such as an inappropriate distribution of work, which could frustrate the need to gain competence. Beyond such an implication, the apprentices seemed to suffer from this label at the broader level of status and personal recognition:

> *More respect for apprentices.* [M; 3rd year; Technical]

Equality among all. [F; 2nd year; Retail]

A lack of status recognition might thwart the apprentices' need to gain competence. Indeed, the apprentices' complaints about the negligence of the formative aspect of their activity at the training company may point to a feeling of incompetence that they might experience when asked to perform a task that they are not yet able to undertake. Furthermore, when asked to complete thankless tasks, apprentices might well find no interest in them and, therefore, have controlled motivation.

Conclusion

Motivation is a product of both the person and the person's environment. Accordingly, the aim of this study was to question the implications of a dual training programme at two different sites – and therefore in two different environments – for apprentices' motivation. More precisely, grounded in SDT (Ryan & Deci, 2017) and based on the construct of motivating styles (Deci & Ryan, 1987; Reeve, 2009; Aelterman et al., 2018), this study focused on the contextual factors that might influence apprentices' autonomous and controlled motivations. Since these two types of motivation are influenced by the degree of satisfaction of one's basic psychological needs, the study examined the apprentices' point of view in order to investigate the factors that might either satisfy or thwart their need for autonomy, competence and relatedness (Ryan & Deci, 2017).

The results of the study revealed major differences in those environmental features either meeting or frustrating these three psychological needs. Most differences were related to the training stakeholders at each learning site, namely the teachers at the vocational school and the trainers at the training company. At the school, the teachers were described by the apprentices as demonstrating more or less availability, understanding and listening skills. These behaviours mirror prior descriptions of teachers' motivating styles (Reeve, 2009) and correspond closely to the construct of autonomy support, which has been attested as satisfying basic psychological needs (Aelterman et al., 2018). At the training company, autonomy support was described in a different manner. Whereas, at the school, autonomy support was accommodated only through teachers and their practices, at the training company the apprentices referred to autonomy more directly and explicitly, confusing it with independence. Statements about the possibility of handling tasks one prefers or about the equal recognition that one receives from colleagues possibly indicate satisfaction of the three psychological needs. Indeed, prior studies investigating SDT relevance in work organisations demonstrated how organisational supports, including managerial styles, influenced employees' motivation by satisfying their basic psychological needs (Dysvik & Kuvaas, 2014; Spreitzer & Porath, 2014; Deci et al., 2017). They notably pointed out how trainers and managers can promote autonomous motivation by encouraging initiative, acknowledging the employee's perspective, and offering choices. Moreover, they asserted that, in addition to trainers and managers, autonomy support can stem from colleagues, consequently improving the feeling of relatedness. Such conclusions were also observed in the present study, suggesting that these conditions could extend to apprentices in training companies.

The opposite motivating style, control, was also present in the apprentices' statements about teachers at the school. According to the apprentices, teachers can be held responsible for the excessive amount of work demanded by the vocational school. This responsibility attributed to teachers might have an impact on students by causing them to feel neglected and having them comply irremediably with the teachers' agenda and demands. As supported by the literature (Reeve, 2009; Vansteenkiste et al., 2010), these controlling practices impede students' basic psychological needs and lead to controlled motivation. When comparing statements referring to the school with those referring to the training company, control was described in a relatively similar manner, with the apprentices blaming trainers for lacking consideration for the work they had to accomplish during the week.

Another similarity between the school and the training company emerged in respect of status recognition. When the apprentices felt as if they were regarded as 'children' instead of 'adults' at the school or as 'employees' instead of 'trainees' at the training company, the possibility of developing a sense of competence or of experiencing a close relationship with teachers and trainers was impeded (Spreitzer & Porath, 2014).

The differences between the vocational school and the training company concerning autonomy support confirm the results of prior studies on the specificities of each learning site in the dual system (Prenzel & Drechsel, 1996; Gurtner et al., 2012). Indeed, as teachers and trainers have very different backgrounds and roles, they demonstrate differences in their ways of providing autonomy or imposing control on apprentices. These variations in motivating styles are not only caused by the teachers and trainers but also by the specific logics at each learning site: teachers must supervise several students in class at the same time, whereas trainers may give individual feedback to a smaller number of apprentices or may easily delegate the care of apprentices to colleagues (Prenzel & Drechsel, 1996). In addition, the lower level of formality at a training company might more easily promote close relationships with trainers than in the case of teachers at a school (Gurtner et al., 2012).

In the context of the high interest in the dual VET systems (OECD, 2018), the challenges associated with implementing such types of system are numerous. One of them is supporting apprentices' motivation. The findings of this study indicate the specific ways in which apprentices' motivation can be sustained at the two learning sites. The study notably reveals the various ways in which autonomy support and control take place at the training company. Further description of the specificities associated with a dual VET system will increase the knowledge base necessary to understand the conditions of its implementation.

While many other differences may exist between learning sites, the results presented here were based on apprentices' perceptions. Therefore, explorations of other influences on motivation, such as institutional influences (e.g. regulations, curriculum content), were lacking. Furthermore, while the thematic-coding method provided a rich description of motivating styles, it could not support the hypothesis of a causal impact of these styles on

apprentices' motivation. Further studies based either on quantitative methods or on longer responses from apprentices – through individual and collective interviews, for instance – might be beneficial in finding answers to the questions that still remain.

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Factors that influence the employability of National Certificate (Vocational) graduates: The case of a rural TVET college in the Eastern Cape province, South Africa

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ABSTRACT

Enhancing the employability of National Certificate (Vocational) NC(V) graduates in South Africa is important. If NC(V) graduates are not employable, this has a negative impact on both the local economy and the future prospects of these young adults. Yet, national data show high youth unemployment rates which includes those with NC(V) qualifications. The factors that influence the employability of these graduates – particularly in the rural areas of South Africa – are not well documented. This study therefore explored the factors that influence NC(V) graduates' employability by means of a case study at a rural TVET college in the Eastern Cape province of South Africa. The case focused on recent NC(V) graduates' perceptions of their own employability and also on input from lecturers in selected NC(V) programmes and potential employers in the study area. Semi-structured interviews were conducted. The findings indicate that negative stakeholder perceptions exist about the employability of NC(V) graduates in the study context, which was a major factor in determining these graduates' employment prospects. Furthermore, there have been no attempts to strengthen relations between the particular vocational institution and the local employment industry included in the study. The TVET college was hampered by poor planning, while prospective employers had limited awareness of the NC(V) curriculum and its objectives. These factors underscore the dissatisfaction among rural stakeholders with the employability of NC(V) graduates in the study context.

KEYWORDS
Employability; NC(V) graduates; vocational education; TVET college

Introduction

Recent statistics indicate that, in the first quarter of 2019, approximately 6.2 million people in South Africa were recorded as being unemployed, while the statistics in the second quarter showed that the figure had risen to 6.7 million (StatsSA, 2019). Rogan and Reynolds (2016) contend that poor employment prospects (especially for black students) result from an inadequate schooling system in South Africa. Such a lack of educational preparation for employment has a knock-on effect on post-school skills acquisition and development, even though post-school education is often seen as a vehicle for gaining employment. The TVET colleges are not immune to this knock-on effect: obtaining a qualification from such a higher education institution does not necessarily translate into automatic employment for NC(V) graduates of their programmes. National data highlight the current high levels of youth unemployment (StatsSA, 2019), even for those with vocational qualifications (Pauw, Bhorat, Goga, Ncube & Van Der Westhuizen, 2006). Vocational education is meant to form a cornerstone of the national economy, as it is intended to provide the skilled artisans that should drive economic growth and sustainability in the production and service sectors (Mukora, 2008; Field, Musset & Álvarez-Galván, 2014). Problems related to the employability of vocational education graduates are even more acute in rural settings, where employment opportunities are limited and the scale of local economies is much smaller than in urban environments. Notional policy envisaged that the NC(V) would resolve these issues, at least in part.

The NC(V) programme was introduced in South African TVET colleges in 2007 and is listed as one of the 10 National Qualifications Framework (NQF) levels in South Africa.[1] In part, the aim of the NC(V) curriculum is to develop skills as outlined by the National Skills Development Strategy III (DHET, 2014:9). However, South Africa is challenged, on the one hand, by a shortage of skilled personnel, with nearly 829 000 vacant posts waiting to be filled (Sharp, 2014) and, on the other, by a high rate of unemployment prevalent among the youth (Needham & Papier, 2011).

The NC(V) curriculum was designed partly to deal with the skills shortages caused by the migration of skilled workers to other developed nations. McGrath, Badroodien, Kraak and Unwin (2004) suggest that there is a need for South Africa to attempt to retain skilled individuals within its borders while at the same time increasing workplace learnerships. Yet the programme does not seem to have attracted interest from school-leavers, businesses and the public at large owing to a lack of communication and of links to employability (Umalusi, 2009).

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1 NQF Levels 1 to 4 are equivalent to school Grades 9 to 12 and include vocational training. NQF Levels 5 to 7 are more relevant and are equivalent to diplomas and technical qualifications, whereas NQF Levels 8 to 10 are equivalent to university degrees (Republic of South Africa, 2008). The Level 4 certificate, which is basically equivalent to Grade 12, is rated as the lowest qualification for gaining access to jobs and industry, ranking below even diplomas and technical qualifications.

Taylor, Servage and Hamm (2014) highlight the trend that students choose to follow an academic rather than a vocational education as a result of factors that include the impossibility of being accredited for the National Senior Certificate (NSC) qualification, which then forces students to start at NC(V) level 2.[2] In addition, the low national throughput rate of 4% as recorded in 2009, and 34% in 2014 (a substantial improvement but not meeting the average national target of 57%), translates into a high failure rate, a low graduation rate and a high dropout rate (at around 6%) (DHET, 2015). These factors add to possible negative stakeholder perceptions about the NC(V) programme and contribute to the factors influencing graduate (non-)employability.

The alignment of the NC(V) curriculum to the NQF levels has, in addition, a limited bearing on the rural setting in which the study was situated. Although no single vocational subject or course accounts for the formation of employability skills, the integration of all the NC(V) subjects makes the acquisition of those skills possible.[3] The Eastern Cape rural town where the reported study was conducted is not immune to the triple challenges of inequality, poverty and unemployment that are being experienced nationwide. The local TVET college consists of four former colleges that were merged and has a total student population of 3 370. On the campus where the study was conducted, 840 students were registered, of whom 370 had enrolled for the NC(V) programme. These students were divided among the Generic Management (n = 120), Marketing Management (n = 152), and Information Technology (n = 98) subprogrammes.

The infrastructure of the town is rural and underdeveloped, with limited industry capacity to absorb NC(V) graduates. Livestock subsistence farming is common in the area, which relies mostly on this form of agriculture as its contribution to the local economy. It might be expected that this agricultural focus would feature in the programme

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2   The NC(V) comprises three levels (L2, 3 and 4 of the NQF), which is an alternative learning pathway to Grades 10, 11 and 12 of the academic schooling system (DHET, 2013). All the NQF Levels 2, 3 and 4 consist of three fundamental subjects, namely English First Additional Language, Life Orientation, and Mathematical Literacy or Mathematics, in addition to four vocational subjects. In order to be certificated at the exit L4, students must have satisfied the basic requirements of passing the seven subjects for each level and also the compulsory Integrated Summative Assessment Tasks (ISAT), which constitute the practical component of the vocational subjects. Since the NC(V) is equivalent to the further education and training (FET) phase in public schools (L2 = Grade 10; L3 = Grade 11 and L4 = Grade 12), it creates the false impression that NC(V) graduates are matriculants. NC(V) students enrol for the programmes when they have completed Grade 9 and are expected to complete the programme in three years. Most students who are recruited into NC(V) programmes are those who passed Grade 12 with a school-leaving certificate, who failed Grade 11 or 12, or who passed Grade 10 but wish to develop vocational career paths.

The qualification is positioned at the interface between basic (school) and higher education. Although it offers an alternative vocationally oriented pathway to completing secondary school, it is positioned in the technical and vocational education system, which nationally resorts under the higher education and training ministry.

3   For example, fundamental subjects such as English First Additional Language, Mathematical Literacy/ Mathematics and Life Orientation add employability skills and personal attributes to students' knowledge. Each of these fundamental subjects has a specific purpose: English Language was designed to enable graduates to apply language in practice, such as writing minutes of meetings, letters and summaries; Mathematics or Mathematical Literacy affords graduates the skills of handling the finances of institutions; while Life Orientation provides graduates with the personal development skills that emanate from understanding attitudes and values.

offering of the local TVET college, as it may facilitate a closer link between the college, the community and related industries as well as offer students opportunities for practical work experience and eventual employment; yet this was not the case at the time when the study was conducted.

The town and the surrounding district also offer very limited opportunities for internships to TVET students upon completing their theoretical component of the available NC(V) programmes. Statistics show that, in the 2013 and 2014 academic years, 73% of NC(V) graduates from the programmes included in this study (Business Studies (Marketing Management and Generic Management) and Engineering Studies (Information Technology)) had not been employed, neither were they participating in the work-based experience (WBE) programme or in internships. Therefore, only 27% of NC(V) graduates from that period were working. Of those graduates who could not find placements, 53% returned to various TVET colleges and private colleges to study further in order to obtain a diploma qualification. Our intention was to investigate whether the courses included in this study matched the economic conditions of the town and district in which the study is situated.

To achieve the objective of employability, what remains as a final step is the initial entry to employment opportunities, which may not be feasible without buy-in from employers, lecturers and the NC(V) graduates themselves.

Since little is known about the factors that influence the employability of the NC(V) graduates in the study setting, the following research question informed the study:

> What factors influence the employability of NC(V) graduates from a rural technical and vocational education and training college?

Even though the study took place in a particular context and the results are therefore not generalisable beyond the study setting, they do provide us with a rare insight into the factors influencing vocational-graduate employability in a rural locale – a phenomenon which is currently not well documented.

Factors influencing employability: Perspectives from the literature

Yorke (2006) defines 'employability' as a set of achievements that comprise skills, understanding and personal attributes which make individuals more likely to secure employment and be successful in their chosen occupation to the benefit of themselves, the workforce, the community and the economy. Employability therefore does not depend on the acquisition of a single skill and/or knowledge set, but is rather a multilayered concept influenced by a variety of stakeholders, including the individual candidate and prospective employers, as well as the educational content, context and opportunities. Employability is multifaceted in that it may be internal (it involves the academic performance, ambitions and confidence of students) (Hooley, 2017; Harry, Chinyamurindi & Mjoli, 2018) and/or

external (it involves institutional reputation, credibility and the demand in a field of study) (Paterson, 2017).

The factors that influence employability can be conceptualised as those that relate to (a) the individual graduate, (b) the educational policy, (c) curriculum design and implementation, and (d) the role employers and industry play in developing graduate employability – in addition to the complex interaction between these factors. This conceptualisation is in line with the findings of other studies on the factors that influence employability.In a Malaysian study, Dania, Bakar and Mohamed (2014) identified graduates' self-concept, participation in career-development opportunities, and industrial training as the most notable factors in the acquisition of employability skills. Munishi (2016) found that poor foundational education, ineffective curricula, incompetent lecturers, a lack of general knowledge and a lack of career guidance, coupled with unfavourable educational policies and reforms, were factors that contributed to vocational graduates not developing employability skills in the Tanzanian context.

Graduates have a responsibility to develop skills that will eventually enable them to find employment. Low, Botes, De La Rue and Allen (2016) list the individual employability skills that are required to enter the job market as:

- Communication;
- Problem-solving;
- Decision-making;
- Analytical and critical thinking;
- Synthesising information;
- Teamwork; and
- Interpersonal and continuous learning.

Hoyles, Wolf, Molyneux-Hodgson and Kent (2000) add to these necessary skills for employability:

- Basic literacy and numeracy skills;
- Management skills; and
- Work ethic.

With the advent of the so-called Fourth Industrial Revolution, such skills are becoming ever-more important in fast-changing workplaces that increasingly rely on mechanised (and digitised rather than human) interfaces and demand employee flexibility (World Economic Forum, 2017). Both employers and graduates expect that such skills will be developed during their education to enable the latter group to find suitable employment (Rosenberg, Heimler & Morote, 2012).

Despite the explicit introduction of skills-for-employment into vocational education programmes, studies have shown that graduates are not always able to operationalise such

skills in a workplace context (Roshan & Shrestha, 2016). Graduates' inability to do so limits their employability and may lead to an overall negative perception about the employability of such graduates.

Graduates' ability to operationalise and translate learnt knowledge and skills into the workplace is therefore a factor that is likely to influence their employability. Graduates may also create self-bias in their employability and employment by choosing specific kinds of job they would like to be offered, based on the expected salaries and their attitudes to work (Sirat & Shuib, 2012). This could mean that, if graduates are too selective in their job search, they may remain unemployed, with little or no prospect of employment because of their narrow skill set (Pauw et al., 2006).

Educational policy is a further factor that may influence graduate employability. In South Africa, measures to empower NC(V) graduates with employability skills should be considered as a national imperative towards social justice and concretising South Africa's democracy. Through the formulation and development of sound policy, the government is expected to establish and encourage a stronger and more cooperative relationship between education and training institutions and the workplace (DHET, 2013) so that employers can give direction regarding what is required by industry.

The TVET sector, for its part, must ensure that NC(V) graduates exit their study programmes as employable. Such an employability factor should be aligned to government policies that should be enacted to drive industries towards increasing employment opportunities (Berntson & Marklund, 2007) and subsequent inclusion for these graduates. Yet, employability skills development in vocational education still does not emphasise the development of creativity and innovation (Rampersad & Patel, 2014) as part of a holistic learner-centred pedagogical approach (Pegg, Waldorf, Hendy-Isaac & Lawton, 2012). According to Wittekind, Raeder and Grote (2010), the higher the qualifications graduates possess, the greater the employment opportunities they have. As the NC(V) qualification is at the NQF exit Level 4, it is only equivalent to a Grade 12 qualification, even though graduates may have obtained valuable vocational skills. This is clearly insufficient to enhance employability.

These persisting challenges are deeply rooted in a curriculum design that is considered to be obsolete and heavily reliant on theory without offering genuine practical activities (Tymon, 2013); instead, students simply participate in simulation exercises during their practical lessons. The NC(V) curriculum appears also not to have been designed to offer apprenticeship possibilities that would provide appropriate theoretical training, practical skills development and the work experience required by employers (Taylor, 2011). Often, job advertisements state that candidates should have a minimum of two years' experience in order to qualify for possible selection. For this reason, a lack of practical experience has become a hindrance to NC(V) graduates who are seeking to obtain initial employment. This situation may be exacerbated by the belief that the national curriculum produces vocational graduates of low quality, as was reported by McGrath and Akoojee (2009).

The needs and perceptions of prospective employers also have to be factored in when considering the employability of graduates, because employers put in place measures that aim to attract and assemble the most productive workforce, for which they require competent and experienced individuals. Internships and apprenticeships are often ways in which employers contribute to future graduate employability, and they often serve as a long-term recruitment mechanism. In systems where these mechanisms are not well developed, Weligamage (2014) argues, even though graduates may have the appropriate qualifications to enhance their employability, they may lack the practical work experience that has to supplement employability skills and would put them in a better position to seek and gain employment.

But negative perceptions make prospective employers reluctant to appoint inexperienced graduates either temporarily or permanently. The status quo of NC(V) graduates' lack of employability remains problematic because of employers' preferences for recruiting graduates who have gained workplace experience: they value experience more than formal credentials (Wolf, 2011). The reality is that employers prefer to offer employment to graduates with NQF Level 5 and higher; given this preference, NC(V) graduates who have only an NQF Level 4 qualification are perceived as being less qualified, which is supported by the negative perception that NC(V) graduates' qualifications are below the minimum requirements for employment.

Research methodology

This study focused on an exploration of the factors that may influence NC(V) graduate employability in a rural South African setting. A case study methodology was employed in this study, as it afforded us the opportunity to explore and describe a phenomenon using a variety of data sources (Baxter & Jack, 2008). A series of semi-structured interviews was conducted with a sample of six NC(V) graduate returnees to the college involved in the National Accredited Technical Diploma (NATED*)* programmes (n = 6), three NC(V) lecturers (n = 3), and four local employer representatives (n = 4). The interviews were conducted with the six NC(V) graduates, the three NC(V) lecturers and the four local employer representatives at a rural TVET college in the Eastern Cape province of South Africa. The participants included graduates of Business Studies (Marketing Management and Generic Management) and Engineering Studies (Information Technology). The rest of the participants were selected from the lecturer cohort and business employer representatives operating in the local municipality. Purposive sampling was used to select the participants for the interviews (n = 13). The interviews were recorded and transcribed, after which the coding of the data was done and themes and categories were developed by means of content analysis (Saldaña, 2013).

The use of interviews as a data-collection method was important because it allowed for deeper probing in order to obtain rich data. In order to get a broader sense of analysing data, content analysis is defined as a technique applied in making replicable and valid inferences

from texts to the functionality of its contexts (Krippendorff, 2004). In this study, the four stages of content analysis as described by Bengtsson (2016) were followed, including:

• Decontextualisation;
• Recontextualisation;
• Categorisation; and
• Compilation.

At the beginning or the first stage, the researchers need to familiarise themselves with the data, meaning that they have to read the transcribed text repeatedly to get a sense of the whole phenomenon. The researcher is then able to link the problem in the manner that it was observed through the participants' responses, which ultimately leads to findings and possible solutions. Bengtsson (2016) shows that further reading is undertaken together with the complete list of meaning units, and it has to be borne in mind that all aspects of the data are important, including unmarked texts. The researcher has to focus firmly on the information that aligns to the research aims and discard that which is of lesser value. At this stage, the categories are well created or formulated, while the meaning units have to be condensed (Bengtsson, 2016) without obscuring or eliminating the main or core message. It therefore becomes appropriate to group responses according to each question, which makes it possible for themes and categories to be identified accurately. The aim of the researcher should be to explore the manner in which the participants made sense of their experiences and to transform such experiences into consciousness (Bengtsson, 2016). In the process, the researcher has to reduce the levels of bias.

To strengthen the findings in this study, document analysis complemented the interviews. Bowen (2009) defines document analysis as a systematic procedure conducted with the aim of reviewing or evaluating documents that may have been produced in printed or electronic material form. O'Leary (2014) recommends an eight-step planning process for document analysis, a process that was followed in the present study. Such planning process includes:

• creating a list of relevant texts to explore;
• considering how texts will be accessed, with attention being given to linguistic or cultural barriers;
• acknowledging and addressing biases;
• developing appropriate analysis skills;
• considering strategies for ensuring credibility;
• knowing the data one is searching for;
• considering ethical issues, e.g. the confidentiality of documents; and
• having a back-up plan if documents are unavailable.

The reason for using document analysis is to evaluate documents in a manner that will ultimately produce and develop empirical knowledge (Bowen, 2009). The documents we

included were derived from the Business and Engineering Studies and Marketing, Generic Management and Information Technology NC(V) programmes. The inclusion of these documents confirmed whether all six NC(V) graduate respondents qualified for second admission to the NATED programmes. The last documents to be considered for document analysis were progression and/or promotional policies, because these addressed the issue of qualification for another grade.[4]

The participants' rights were protected, their informed consent was obtained, and institutional permission and ethical clearance were also obtained.

Results and discussion

Our initial conceptualisation of the factors that may influence vocational graduate employability – including (a) the individual graduate, (b) the educational policy context, (c) curriculum design and implementation, and (d) the role of employers and industry – was used to structure the results and discussion.

Factors related to the individual graduate

The data suggest that there is a continuing lack of available information on the potential contribution that NC(V) qualifications can make to the job market, as the following student response indicates:

> I think people are still uneducated about the NC(V) or the value of the NC(V) certificate..[5]

Graduates would appreciate acquiring knowledge and skills during their TVET college studies not only to help them survive, but also to give them the wherewithal to become astute business people, as indicated in the response below:

> My studies would assist me to open my own company, becoming my own boss and having people work for me. As an entrepreneur, I would be able to create and design business ideas, develop items that can be sold to the public or companies and make a profit.

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4   Although the progression policies at the vocational institutions do not directly deal with employability, they do implicitly highlight the predicament NC(V) graduates are faced with, as these graduates do not qualify for many positions that require a vocational qualification. In order to qualify for such positions, they need to improve their qualifications, which necessitates their reregistering for the NATED programmes that, on completion, lead to a national diploma. In addition, NC(V) graduates are unable to gain access to workplaces for the purpose of on-the-job training, which is often viewed as a determinant of employability (Wolf, 2011). For these NC(V) graduates, it is considered quite important to register for NATED programmes that allow them workplace experience; and, to achieve this, they must have completed NC(V) L4 with all seven subjects passed, including three fundamental and four vocational subjects.

5   Note: English was not the first language of many of the interviewees. Their responses were captured and reported here verbatim, and may therefore not be linguistically correct.

The responses by graduate participants suggest that they feel they are doomed to failure. They pin their hopes on returning to the vocational institutions to register for the NATED programmes as the only means of survival. Graduates expressed anger towards the system and the curriculum, leading to the sentiments expressed below:

> For a person to go there it is a waste of time and you spend three years doing something that is not recognised by department and companies. Officials in the department say I'm not qualified to be employed by the department because I'm having Grade 12.

> I won't encourage anyone who passed Grade 12 to enrol for the NC(V).

> I didn't see any opportunities.

> I realised that there is not much job opportunities available for people who have completed NC(V) L4.

> I didn't see any opportunities; there are fewer adverts indicating L4 qualifications.

However, they still maintained that NC(V) programmes remained relevant and distinguished them from their counterparts who completed the National Senior Certificate (NSC) in public high schools. But they did advocate additional programmes to reduce the mismatch between the skills they acquired and those demanded by the local job market:

> NC(V) should not be dismissed. Instead, it should continue with more programmes being added, such as basic nursing, and this could allow students to have more options and be employable.

Akoobhai (2015) reported that 94% of the students concerned felt that workplace experience should be included as part of the NC(V) programme after their work-based learning experience. This idea was also present in the responses received from the interviewed graduates:

> We would rather choose the NATED because they qualified with N6 plus the experience spent preparing for the trade test certificate and the experience is that it happens in [the] real work environment, where companies want to see quality production.

This view of the graduate participant aligns with that of McQuaid (2006), who argues that graduates can enter the workplace with the wrong skills and too little spatial mobility, leading to a spatial–skills mismatch problem. For this reason, NC(V) graduates will either remain lingering around their communities or return to the TVET colleges. This, according to Burchardt (2005), leads to early adult life often being beset with frustration, disappointment and reduced confidence in the strength they would have brought into the labour market because their career aspirations have not translated into prospective employment opportunities.

Factors related to educational policy

Among the stakeholders interviewed, including the NC(V) students, the NC(V) lecturers and the employers' representatives, there are questions as to who is responsible for ensuring that NC(V) graduates possess the skills and knowledge necessary for employability. Proposals were put forward to suggest that the role of skills acquisition remain each country's responsibility to achieve through national policies that strengthen the ability of workers to adapt to changing market demands (ILO, 2010) and that this may not exclude NC(V) graduates as prospective seekers of employment.

The South African Department of Trade and Industry's growth strategy for the country includes a focus on broadening participation, equity, and access to redress for all economic citizens, particularly those who were previously marginalised (DTI, 2007). However, the findings of the present study suggest that these policy goals have not been met in the particular context where the study was conducted. In order to enhance NC(V) graduates' employability, it is suggested that the companies and businesses in the local district municipality that are interested in doing business with the government should at the very least have NC(V) graduates in their employ. This would ensure that NC(V) graduates find employment opportunities locally rather than having to relocate, as is suggested below:

> Every government institution should be forced to take a number of NC(V) graduates to actually employ some of them as part of their intake on a year-to-year basis; and also that government should be the first to identify capability of their students.

None of the government departments and private-sector employers indicated at any stage of the interviews that they create job opportunities for the NC(V) graduates. The intention of the DHET (2013) to create a stronger and more cooperative relationship between education and training institutions and the workplace appears to be a positive move, but the reality is that it is difficult to find workplaces for the NC(V) graduates. The benefits of a post-school education and training system that is responsive to the needs of individual citizens and of employers both in the public and the private sectors, and achieves broader societal and developmental objectives, appear to be no more than an ideal, a pipedream, at present.

Factors related to curriculum design and implementation

The lecturers interviewed indicated that neither the government nor potential employers understood what the NC(V) was about:

> … this means that government departments have no clue as to what is happening in the NC(V) programmes.

> … seemingly, some employers have no idea about NC(V); they don't understand what L4 is, unlike when you talk of Report 191 (NATED).

Employability skills were particularly hard to acquire in the studied context because – as the graduates themselves pointed out – the materials for practice and for assessment purposes were not timeously available, meaning that practice became a once-off event, as indicated below:

> The ISAT, which is the practical component to hone the skills required, is instead used for an examination component serving the progression purpose only.

Lecturers are bearing the burden of teaching students under these difficult conditions and it would seem there is not sufficient time to teach all the theoretical and practical components. While lecturers have to be commended for trying, that initial training for a single lifetime qualification may not be enough, because the education and training systems of the future require flexibility and should be preparing graduates for lifelong learning (ILO, 2018). This view is completely undermined as long as, during students' practical activities, simulation remains the only method of keeping students abreast of current industry practices and also accumulating marks. As a result, students feel short-changed because they cannot undertake real practical assignments on their own. This was evident from what a student respondent pointed out:

> We observe, with little chance for us to work on the computer, as to learn how to fix the computer.

Lecturers concede that it is practically impossible for NC(V) students to do the theory and practical components simultaneously, given the demands of the NC(V) curriculum. Low national NC(V) results (between a 5% and a 7% pass rate recorded between 2011 and 2013, according to the DHET, 2012) add to the problem of negative perceptions of the NC(V) curriculum, leaving graduates with limited future job prospects and the aspiration to re-enrol for NATED programmes instead, as stated by a student:

> We would rather choose the NATED because they qualified with N6 plus the experience spent preparing for the trade test certificate; and the experience is that it happens in a real work environment where companies want to see quality production.

King and McGrath (2004) asserted that the TVET sector is diverse in its character and has the potential to integrate young people into the world of work, but concluded that the lack of resources leads to cuts in the volume of training provided in public institutions. As a result, the inadequacies affect the quality of the training owing to insufficient teaching and learning methods that may be used for the practical teaching; these inadequacies also affect the skills needed for the world of work (Dasmani, 2011).

Factors related to the role of employers and industry

Employers are conscious of their business reputation, but also emphasise the need to minimise costs and ensure a profit. To establish good institutional relations regarding NC(V) graduates' employability, a work setting that enables learning must be devised to enable graduates to

meet the requirements and needs of the employers for a flexible and adaptive workforce (Singh & Singh, 2008). Prospective employees would also benefit from this arrangement in that they would network with relevant human resource officers, who could offer free services such as creating professional curricula vitae for candidates and also providing advice on how to answer interview questions (Dacre & Sewell, 2007). This, unfortunately, is not the case for the NC(V) graduates in this case study, as employers pointed out a disjuncture between the training background and the actual workplace learning environment when placing students. For example, one employer noted:

> We have students who passed [the] Human Resource (HR) programme [and] we end up letting them do [the] cashiering duties of cashier or [till] operator of our supermarket.

Such a disjuncture calls for the TVET college to consider making adjustments that would enable students to spend longer periods in workplaces gaining real practical experience rather than being put through simulated exercises in a classroom. Employer representatives revealed the weaknesses of the curriculum, and also the government's failure to communicate and articulate the objectives of the NC(V) programmes. Employers are core stakeholders in the employability setting and, in this regard, they may not wish to employ graduates from a programme they know little about – which is another aspect of the employability problem. According to Wyatt and Oswalt (2013), employers value professional maturity among undergraduate students. However, since the exit L4 of the NC(V) curriculum is equivalent to a Grade 12 qualification, employers may be reluctant to offer such graduates employment because of a suspicion of less professional maturity that could cloud any abilities, knowledge and skills that NC(V) graduates may possess.

Employers' lack of understanding of what NC(V) programmes entail poses a permanent barrier and places a stigma on the NC(V) graduates, which leads some of them to re-register for the higher-level NATED programmes instead. According to Hooley (2017), a better comprehension of employability presents graduates with a chance to acknowledge their potential and the skills, attitudes and knowledge required by society, including those required by prospective employment workstations. In response to this challenge, NC(V) graduates need to ensure that they possess knowledge of the employment sector and, as one lecturer put it, they must be able to understand what the roles are that employers need in the sector. Seemingly, contrary to this, there is a persistent preference by employers in the study for NATED qualifications, as noted below:

> The reason why I encourage those L4 students to register for NATED is that they should have the L4 and a diploma in order to improve their employment opportunities.

McGrath, Needham, Papier, Wedekind, Attwal, Calitz and Van der Merwe (2010) evaluated lecturers and suggested that they should act as brokers or facilitators of social-capital networks.

This implies that they must link their students to local employers and former graduates who are currently employed. The NC(V) graduate returnees to the college were extremely inspired to enhance their own employability status by registering for the NATED programmes which, in their view, are a notch above the NC(V) programmes. This accounts for their decision to return to the same campus to further their studies. This view was given credence because lecturers encouraged these NC(V) graduates to register for the NATED programmes after completing the L4.

Considering the interplay between the different factors

For employability skills to be maintained, the gap between employers and graduates, lecturers and graduates, and employers and lecturers' perceptions must be minimised through working together on projects and assignments, giving talks to graduates, and offering longer practical training (as suggested by Singh & Singh, 2008). That students master employability skills is important, but NC(V) graduates cannot achieve this piecemeal or as a once-off project. Another advantage of providing longer practical training (as described by Singh & Singh, 2008) is that it would educate prospective employers about the existence of the NC(V) programmes, which is important in view of employers' lack of knowledge about the NC(V).

Clarke (1997) also emphasises the importance of close cooperation and collaboration between educators, employers and government institutions so as to help with developing relevant teaching and training programmes that seek to serve the needs of communities. In addition, lecturers should be given considerable latitude in structuring their curricula, classroom design and instructional approaches, according to Stasz (1997) and Spill and Tracy (1982). However, this is not the case with the current NC(V) programmes offered by the TVET college that is the subject of this study: instead, it limits the lecturers' ability to create meaningful linkages between the classroom and the workplace. This may account – at least in part – for the current disjuncture between the demands of the centralised national vocational curriculum and the context-specific employer requirements. As a result, NC(V) graduates perceive NATED qualifications as a better option for gaining employment.

The objective of the vocational education system should be to produce capable employment-seekers, but the unavailability of jobs creates a negative perception among NC(V) graduates. Gewer (2009) argues that the TVET colleges are not the appropriate platform for granting graduates the placement opportunities that are considered necessary for the students to receive the required experiential training – the foremost component that leads to employment. Placement opportunities for NC(V) graduates would certainly serve as tangible or concrete proof that they have gained experience; but, currently, the industry in which they need to be placed has expressed its reservations about the NC(V) programme.

In this study, it was found that most government departments lack the knowledge and understanding of what NC(V) is about, and, consequently, stand in the way of graduates

because potential employers doubt that NC(V) graduates are employable. In the light of this, and with the support of their lecturers, NC(V) graduates should guard against underselling themselves to potential employers (Cryer, 1997).

NC(V) graduates, for their part, also need to acquire and develop skills in such areas as communication and interpersonal relations during their time at college. The current study has found that potential employers provided enough evidence which supports a preference for the NATED-programme graduates as opposed to the NC(V) graduates. As indicated above, although the NATED-programmes are theory-based, the practical component is completed in the workplace and is monitored by potential employers. The approach is different in the NC(V) programmes, where the practical component is carried out in the classroom or in the workshop of a TVET college and is monitored by lecturers – and all of this without the knowledge or scrutiny of potential employers or the industry at large. In these circumstances, the TVET colleges will have to do more to win the confidence of society and the public by building the capacity of graduates.

In this respect, lecturers and vocational institutions need to heed the call by the government, as stated in the DHET Research Agenda (DHET, 2014), which proposes that partnerships between government departments and other employment stakeholders be arranged, while the TVET colleges should assume the more active role of workplace learning environments. This would align well with what the South African Department of Trade and Industry's growth strategy for the country supports, including a focus on broadening participation, equity, and access to redressing poverty alleviation for all citizens (DTI, 2007). However, the findings of this study suggest that these policy goals, announced in 2007, are a long way off from having been met in the particular context where the study was conducted. Work-based learning may become a viable vehicle towards increasing the employability of NC(V) graduates. During the interviews, the representatives of potential employers suggested an array of separate training involving a combination of theoretical and practical components: first, theoretical input at public vocational institutions, after which the baton of training should be passed on to private or state-owned entities for the completion of the practical training component.

As indicated above, the current situation at the vocational institutions exposes certain weaknesses in practical experience. The DHET (2013) expressed the same view, indicating that the situation is unfortunate because graduates from TVET colleges locally and nationally, as well as graduates from universities, cannot easily be absorbed into workplaces because they lack practical workplace experience. The DHET's (2013) view is that workplace learning must be seen as an integral part of qualification and programme design and not a separate element. The DHET (2013) proposes that the government should make available opportunities for apprenticeships, learnerships and internships in the public service at the national, provincial and municipal levels, in state agencies such as the defence force and the police, in public educational institutions, and also in state-owned enterprises. In the broader context, this would afford all these institutions the space and time to observe and evaluate the skills that the NC(V) graduates have acquired during their time at the vocational institutions.

Conclusions

This study explored the factors that may influence the employability of NC(V) graduates from a rural TVET college in the Eastern Cape province, based on the interplay between the individual graduate, the educational policy context, curriculum design and implementation, and the role and attitudes of employers and industry. The results of the study affirm that different stakeholders (including students, lecturers and prospective employers) possess limited knowledge about and/or negative perceptions of the NC(V) programmes included in the study. This severely limits graduates' employability and subsequent career possibilities. A key aspect of the problem seems to be the lack of linkages between the college and the surrounding industries and prospective employers, which limits the opportunities for learning towards career development, the gaining of work experience, and the chances of applying subject knowledge and skills in the workplace.

Potential employers in the study confirmed what McQuaid and Lindsay (2005) stated about employer attitudes preventing the placement of NC(V) graduates. The rural context of the study adds to the graduates' already limited prospects, because inequality, poverty and unemployment are making it difficult for businesses to survive, let alone to offer employment opportunities. The essence of employability is that graduates are equipped with sufficient knowledge, skills and competence that lead to their personal, social and economic well-being as advocated by human capital theory (OECD, 2001).

While the successful completion of their studies is viewed as an achievement for these graduates, they nevertheless remained excluded, hamstrung as they are by inequality and deprivation (Wang, 2013). In turn, such inequality and deprivation create the danger of entrenching poverty. It seems that, in the context studied, the vocational education system is failing in its mandate to produce employable employment-seekers.

Moreover, there seems to be a complex interplay between the factors that may influence the employability of TVET graduates. These factors include the individual graduate, the educational policy context, curriculum design and implementation, and the role and attitudes of employers and industry. Our findings suggest that improving the employability of vocational graduates in a rural context demands the adoption of a holistic view of the factors that influence such graduates' job prospects, and that any possible intervention would need to be context-sensitive and involve multiple stakeholders rather than having a singular focus on only the individual graduate, the policy and/or curriculum designers and implementers, or any prospective employers.

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Experiences of women students in Engineering studies at a TVET college in South Africa

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ABSTRACT

This article explores the experiences of women students in an Engineering programme at a South African technical and vocational education and training (TVET) college. Drawing on the capabilities approach as the study's theoretical framework, the author interprets what women go through as they navigate college and transition into the labour market. While there is a growing literature on post-school education, particularly on TVET, few studies focus on the experiences of women students in traditionally male-dominated programmes such as Engineering. Furthermore, South African education and training policies since 1994 make reference to a commitment to resolving the inequalities under the previous apartheid government, specifically with regard to gender inequality. Through a case study approach, the research reported on in this article sought to understand how the democratic government's commitment to social justice was being implemented and experienced on the ground, and, more particularly, whether it is improving the position of women students. Qualitative data obtained through in-depth interviews were collected in two phases from 14 women in their final trimester of the National Accredited Technical Education Diploma (NATED) programme and about six months after that. The findings show that the students face various challenges while they persist with their education, and also in obtaining either internships or employment. By highlighting the experiences of women in TVET, it is hoped that this understanding will help to persuade the government to embrace social justice in the post-school sector so as to enhance the study and employment opportunities of women who enrol in Engineering.

Introduction and background

The development of technical and vocational education and training (TVET) in South Africa can be traced back to the apartheid era, when the growing mining industry required trained artisans and technical colleges were instituted to provide skills training (Badroodien, 2004). The training of mining engineers began at the South African College (now the University of Cape Town) and catered exclusively for whites (Barnes, 2004). It was not until the mid-1970s, however, that African black[1] students were admitted into skills training, but this training was offered at segregated institutions of a poorer quality and which were less well-resourced than the comparable institutions for white students. Badroodien (2004:21) notes that 'TVET has always been characterised by apartheid education, located within a salvation paradigm for the poor whites, Africans and coloured urban workers'. Although colleges were established in rural areas, these were meant to provide skills for rural black people and to prevent urban migration (Badroodien, 2004). Not only was technical and vocational education racially segregated; women could also not easily access training in courses such as Engineering until after the end of apartheid (McGrath, 2004).

The 150 technical colleges that existed in 1994 were merged into 50 institutions in terms of the Further Education and Training Act 98 of 1998. These institutions then became more diverse in their racial composition. TVET colleges have since been placed at the core of artisan development in South Africa and are projected to support industrial and economic growth (DHET, 2013). During the past 20 years, there have been extensive policy changes and financial investment in the sector in order to expand access to skills development irrespective of race or gender. Table 1 shows the enrolment of students in public TVET colleges in South Africa by gender and qualification type (explained below) in 2017.

Table 1: Enrolment cycle count of students in TVET colleges by qualification category and gender (DHET, 2019)

Qualification Category	Female	Male	Total	Female (%)	Male (%)
NC(V)	90 099	52 274	142 373	63.3	36.7
Report 191 (N1–N6)	282 609	227 544	510 153	55.4	44.6
Occupational qualifications	6 677	4 292	10 969	60.9	39.1
Other	13 116	11 417	24 533	53.5	46.5
Total	**392 501**	**295 527**	**688 028**	**57.0**	**43.0**

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1   This terminology is being used in its historical sense and it does not imply acceptance of such racial categorisation.

The South African government, through the Department of Higher Education and Training (DHET), has restated its commitment to promoting social justice in the post-school sector. In a White Paper (DHET, 2013), the government identifies the injustices in the education sector perpetrated by the apartheid government, the legacy of which will require some effort to overcome. Poor black people are still 'being served by [lower-quality] public services and institutions, than the well-off' (DHET, 2013:4). In addition, patriarchy affects young women's experiences even in the education sector (DHET, 2013:4). In the light of the TVET background described above and the country's social justice agenda, this article draws attention to the experiences of women students at a public technical and vocational college.

The next section outlines a working definition of social justice and some key concepts associated with the capabilities approach (CA) which has framed the research. Key tenets of the CA, such as capabilities, functionings, well-being, freedoms and agency, are briefly explained before the method that was employed in the study is described. The empirical findings are then presented, followed by a discussion and the conclusions drawn.

What is social justice?

Brennan and Naidoo (2008:287) argue that the term 'social justice' and other terms such as 'social equity' have no precise definition, although they commonly have a '[feel-good] flavour to them'. Zajda, Majhanovich and Rust (2006:13), on the other hand, suggest that the question ,'How can we contribute to the creation of a more equitable, respectful, and just society for everyone?' is, in effect, a definition of that term. The authors add that:

> Most conceptions of social justice refer to an egalitarian society based on principles of equality and solidarity, that understands and values human rights, and that recognises the dignity of every human being (Zajda et al., 2006:10).

It is reasonable to assume, therefore, that for a government to claim a commitment towards a socially just society, policies should reflect this and should 'ensure a more equitable and fair[er] access to resources, and socially valued commodities' (Zajda et al., 2006:10). Education is one such socially valued commodity, as it is also guaranteed in the Constitution of South Africa; and policy would need to aim at removing inequalities of gender, race and social class. Whereas the rhetoric about the value of TVET in South African policy has been pervasive, the low status that is accorded to TVET may disadvantage those who choose this route, even though a socially just education system should enable all learners to achieve their full potential regardless of their background.

Tikly (2011) argues that the social justice framework is based on three basic principles that can also be used to evaluate an education system. The first is that education should be inclusive and that, in order to achieve social justice, all learners should achieve specified learning outcomes. This goes beyond access to a resource such as education: it needs to

extend to 'overcoming economic, social, and cultural barriers that prevent individuals and groups from converting these resources into desired outcomes' (Tikly, 2011:91).

The second principle is the relevance of education: learning outcomes should be 'meaningful to all learners, valued by their communities and consistent with national development priorities in a changing global context' (Tickly, 2011). The third principle is that 'education should be democratic, in the sense that learning outcomes are determined through public debate and ensured through processes of accountability' (Tickly, 2011). Furthermore, socially just education needs to challenge undemocratic principles – for example, the perpetuation of sexist or racist norms and values (Tikly & Barrett, 2011:12). A socially just education can, in sum, be said to be inclusive while at the same time being relevant and supportive of democratic participation.

Having arrived at a working definition of social justice, I turn now to the tenets of the CA.

Capabilities approach

The CA seeks to promote social justice and encourages an education system that fosters not only skills development and work preparedness, but also the development of 'complete citizens who can think for themselves' (Nussbaum, 2010:2). Wilson-Strydom (2011:415) argues that the CA provides 'a conceptual framework for exploring the complex processes underlying education outcomes in a manner that exposes injustices that are otherwise masked'. Applying the capabilities lens to issues of social justice in the post-school sector could bring to light the unequal opportunities that perpetuate injustices. The CA draws our attention to issues beyond outcomes alone – if outcomes only are considered, the assumption would be that, by making resources such as funding and a place at a TVET college available, all students would be able to graduate and improve their well-being. As availing oneself of resources alone is not enough, it is important to understand how students enrol in and navigate through the educational environment.

In applying the CA to TVET, this article also criticises human capital theory, an approach that generally informs policy and research in TVET (Powell, 2014). According to the CA, economic growth is essential to development, but it is not all-encompassing (Powell, 2014). Adopting conventional approaches such as human capital theory may lead to the embracing of entrenched societal inequalities and the marginalisation of certain groups of people instead of their overcoming the effects of apartheid (Vally & Motala, 2014). Supporters of human capital theory argue that massive investments should be made in education in the hope of contributing to economic growth, which is its major focus. A human capital perspective might therefore not expose gender inequalities, given its prioritisation of economic growth. The World Bank (1995) established that there was a direct correlation between women's education and development, and several research studies conducted at the time supported this theory. The general findings then indicated that educating women and girls led to reduced poverty levels and lower fertility rates, and that educated women also tended to encourage their children to go to school. Recent studies continue to support this, as Psacharopoulos and Patrinos (2018:445) point out:

> Women continue to experience higher average rates of return to schooling, showing that girls' education remains a priority. Returns are higher in low-income countries.

Human capital theory then prioritised women's education in policies; however, the perceived benefits would not accrue to women themselves but to their families and to society more generally. Unterhalter (2007) criticises the policies emanating from human capital theory for not recognising that education should enhance the freedoms of women and expand their choices rather than overemphasising economic growth and societal development. Such policies would also not consider the quality of education that women receive, the presence or absence of sexism, or the level of expertise of the teachers (Unterhalter, 2007:42). The following sections briefly set out the key tenets of the CA, that is, capabilities, functionings, well-being, freedoms, and conversion factors.

Capabilities and functionings

Capabilities are the opportunities or freedoms that individuals and groups possess in order to achieve 'what they have reason to value' (Sen, 199:3). Capabilities are more than the attainment of skills – they are also opportunities for individuals to convert their resources into achievements, or 'functionings'. In addition to basic literacy and numeracy, there are other capabilities related to education; these include 'access to knowledge, critical thinking, problem-solving, emotional literacy and autonomy' (Tikly, 2011:91). From the perspective of capabilities, an education system could be labelled 'socially just' if it enables students to expand their capabilities to both economic productivity *and* individual well-being.

Well-being and freedoms

'Development' is defined as 'a process of expanding the real freedoms that people enjoy' (Sen, 1999:3). Simply put, development necessitates the eradication of 'unfreedoms' such as poverty, tyranny, poor economic prospects, systematic lack, inadequate public facilities and intolerance (Sen, 1999). In order to evaluate the well-being of individuals, we have to ask whether the freedoms that individuals have are indeed fostered. For instance, education can help women to enhance their freedoms from poverty, hunger and reliance on others (usually males) (Nussbaum, 2000). As framed in the CA, education should broaden individuals' choices in all areas of their lives. Zajda et al. (2006:11) summarise the link between social justice and individual freedoms as follows:

> One of the key factors in achieving social justice, is the emergence of a consensus that society is working in a fair way, where individuals are allowed as much freedom as possible given the role they have within the society.

Within the capabilities framework, women are seen as agents of change. Sen (1999:19) defines an agent as 'someone who acts and brings about change'. This conception is valuable,

especially for South African women whose agency may have been suppressed by both patriarchy and the apartheid system. TVET, and engineering education in particular, has historically been a predominantly male domain. Education as a development initiative, particularly for women, should therefore strive to remove the 'unfreedoms' women are subjected to in order for the system to be considered socially just.

Conversion factors

The choices that women students make may be conditioned by social, personal and environmental factors. Robeyns (2017:46) classifies conversion factors into three groups:

- Personal conversion factors, which are 'internal to the person, such as metabolism, physical condition, sex, reading skills, or intelligence' (Robeyns 2017:46);
- Social conversion factors, which stem from the society in which a person lives and may include cultural and social practices, public policies, and gender and power relations; and
- Finally, environmental factors, which are determined by the physical or built environment – for example, rural versus urban areas and the availability of roads.

By way of example, to explain the conversion factors, making funding available to students in TVET will not be enough to ensure a successful end result. Conversion factors require one to understand not only the end results, but also the process. The ways in which women have been socialised can be a significant conversion factor that influences the manner in which they convert resources into functionings. In most cases, girls are not exposed to 'tinkering' as they grow up; nor are they encouraged to fix gadgets in the home. This can be a disadvantage in the learning environment, especially in the case of learning technical subjects such as Engineering. Therefore, gender and socialisation are important conversion factors in women's learning experiences. Applying CA would compel one to pay attention to those personal, social and environmental conversion factors that may influence the conversion of capabilities into valuable functionings.

Having outlined the conceptual framing of this research, I proceed to explain the methodology that was adopted in the study.

Methodology

The research question sought to investigate the experiences of women students studying Engineering at a TVET college with a view to understanding the notion of social justice in TVET. Interviews were conducted with a sample of women students who were studying Engineering at a TVET college in South Africa during 2017 and 2018. The targeted sample comprised 14 women students in their final trimester of the N6 programme of the Engineering NATED. This programme is offered at TVET colleges in order to train artisans and it consists of 18 months of theoretical training at the college and 18 months of practical training in a workplace in order to qualify for a Diploma in Engineering studies.

The interviews were undertaken in two phases:

- Phase 1 occurred at the end of the 18 months of college study, and Phase 2 took place about five or six months after they had completed their theory examinations and had exited the college.
- The follow-up interviews, in Phase 2, were conducted to ascertain the nature of their transitions from college to work or apprenticeship and how the interviewees had navigated their way once they were in employment.

Of the 14 women students, only one student had a father who had had post-school training, in this instance as a police officer. The remainder of the students came from a background where none of the parents or guardians had had any post-school education. The majority of the students were first-generation students and had experienced poor schooling conditions in the townships and rural areas where they had originated and grown up. In-depth interviews with open-ended questions were used to probe their college experience as women in an Engineering programme.

Qualitative research entails asking questions about the why and how in order to understand the lived experiences of the studied individuals (Hesse-Biber & Levy, 2010). The research question required descriptive data to be gathered about the experiences of the women students in the NATED course; therefore, quantitative research was not suited to this purpose. In addition, although students may study at the same institution and receive the same education, various conversion factors may affect the experiences of each individual woman. These unique experiences are therefore best captured through face-to-face, in-depth interviews. Letherby (2003) adds that, unlike quantitative research methods, which rely on numbers to explain social realities, qualitative methods have the ability to place researchers in the world of the participants in order to understand their experiences. Therefore, qualitative research – in-depth interviews in particular – was the most appropriate method for this study, since, as a researcher, I was better placed to explore the experiences of the women students.

The required ethical procedures were upheld in the collection of the data, participation in the study was entirely voluntary, and pseudonyms have been used to protect the identity of the participants.

Findings

The data were open-coded to accommodate the views of the students, who drew on their personal experiences. The coding was intended to accommodate themes such as biographical information, teaching and learning experiences, valued opportunities as presented by TVET, the transformative role of TVET, and what women students wished they could change in order to enhance their learning experiences. Whereas the dataset was extensive, the extracts provided here are intended to support and illustrate the focus areas of this article.

Why women chose TVET and Engineering

For some of the women students interviewed, the choice to attend a TVET college was not an easy one. Almost half of the women students interviewed (six out of 14) could have enrolled at a university but said they had opted for TVET because they could not afford the cost of university education. TVET was therefore a practical choice for these women. Branson and Kahn (2018) argue that a student's socio-economic background is an important determinant in the choice of post-school education. The following extracts illustrate these women students' choice of Engineering at a TVET college:

> The main reason why I chose a TVET college is that, financially, as a family we were not very stable, so I had to come here because I could not opt for a university because you never know if you will qualify for a bursary; so since this was a cheaper option, I came here. Actually, my first option would have been studying Psychology at the university. Engineering was my second option and I saw that coming here to a TVET college would be cheaper. (Tumelo)

> I live with my grandmother outside the city. After I finished my matric, there was no money for me to go to university. Even now, I fend for myself by doing domestic work for others in my community. I clean windows, houses and clothes for people, so they give me money that I use for transport. (Palesa)

In the case of the following respondents, they were at a TVET college because they had not passed their matriculation examinations very well, as these extracts illustrate:

> I did not do very well in my matric final examinations; this left me with no choice but to come to a TVET college. (Noni)

> It was not easy for me to choose a course, because of my matric passes. I tried to go to the university, but my application was not successful. I really wanted to be a medical doctor. (Lesedi)

> I wanted to go to the nearest university to do Architecture but my results for maths and science were not very good. So, I came here. I thought I would get a job after N3, but I could not. That is why I proceeded to do N6. (Lebo)

> I wanted to go to the university of technology in our province. Because of my passes, they offered me teaching. I did not want to teach, so I came here instead and enrolled for Electrical Engineering. (Thato)

These responses and several others illustrate how the choice of post-school institution can be severely constrained due to poor academic performance at the exit level of high school. TVET colleges have tended to attract poorly performing black students, who are mainly from the

lower social class (Branson & Kahn, 2018). The literature on social justice comments on the perpetuation of inequality through the education system, where better-performing students who have attended well-resourced schools enter the universities and have better prospects of securing jobs and promoting their well-being. Typically, this applies in most cases to white and middle-class black students (Rogan, 2018).

Reay (2020:591), writing about the English education system, argues that, 'although choice has become a popular buzz word in education, the working classes predominantly constitute those people who are not able to exercise choice'. This is because they lack the resources needed, lack knowledge or are 'crowded out' (Reay, 2012:591). Reay (2012:592) concludes that, until it is understood that

> [c]hoices are powerfully determined by the amount and type of resources individuals can bring to the decision-making, moving towards socially just education will remain far-fetched.

The lack of parity of esteem between TVET colleges and universities has also long been an issue for TVET graduates. This is evident from the number of students in the study who aspired to go to university and considered TVET as a last resort. This could be a reflection of the disparities in the rates of return from the two institutions, in that a TVET graduate generally receives a lower income than a university graduate.

Drawing on the experiences of the women students in this study, one can conclude that they had limited opportunities and freedom to choose. Deprez and Wood (2013:146) argue that the lack of freedoms often leads to 'learning to desire what one is being socially constructed to want rather than what one has reason to value'. Since South Africa is a country that purports to be striving towards social justice, not only in the education sector but in all aspects of human life and well-being, one would expect there to be more freedom of choice. Sen (1999) refers to the 'real freedoms' that individuals have when they are able to choose from a range of options. The experiences of these women students point to their limited range of options and the choices they had to make in view of their social and economic circumstances.

Experiences of women students of Engineering at a TVET college

While many positive experiences at college were reported, for the purposes of this article the following were examples of the negative experiences that were shared by the women students in the study:

> Well, I had this lecturer once, who taught me from N1 to N4, then started acting weird and I had to stop going to him for help. He started asking me out and he did call me, and I was like … 'Where did you get my number?' So, he was like … 'When you registered you left your number, so I took it from there.' I can say that

in a way it affected my talking with the male lecturers. I don't know what they think about me and I end up not participating sometimes and not asking questions. (Thato)

I was doing Maths N2 by that time, and, unfortunately, I was taught by a male lecturer. So, he was young and was into that kind of a thing … like … 'Can I take you out?' And if you reject those kinds of things then they act like somehow … even when they mark your scripts, they just mark according to your attitude towards them. Somehow, they don't have that mercy. I ended up failing. I ended up failing N2 for the first time. Then I repeated it and I got to pass it while I was taught by a female lecturer, the same subject the following trimester. (Mabatso)

Some male lecturers were reported to have been making undesirable comments about women in Engineering classes, which had a detrimental effect on the way in which these women experienced their education. Other women students said they felt that their abilities were being questioned simply because they were women:

Well, the time we were doing diesel and motor mechanics in N2 and N3, our lecturer kind of thought we only chose Mechanical Engineering just because of the name but we don't understand anything about it. It's more like people stereotype, and they think that mechanical engineering is for males not females; that's what runs up in their mind. (Dineo)

There are some male lecturers who are not supportive at all. They would discourage us and say that even if we study Engineering, we are women. They even say that if you do Engineering as women, you will not get jobs! (Puleng)

I would feel offended by comments from some of the lecturers. They would say such comments if they do not like some girls. They would say you are not good because you are a woman and that Engineering is for men. (Mabatso)

These findings suggest that classroom practices can at times be alienating or intimidating to women students. This resonates with other findings, such as those of Makarova, Aeschlimann and Herzog (2016), where lecturers were reported to have contributed to the 'subtle bullying' of women students in Science and Engineering studies.

The stories of the women in these extracts help us to understand how classroom experiences can and do have a negative effect not only on the well-being of students, but also on their agency. When women's ability to participate effectively in the learning environment is constrained as a result of either sexual harassment or negative or demeaning comments, their sense of agency could also be affected. However, more research needs to be done into this in a TVET context; but this study offers us a window into what a 'socially just' system that expands the freedoms and agency of all students, including women, might entail.

Coping with academic pressure

Most of the women interviewed were finding it difficult to cope with their academic workload. Ten out of the 14 respondents expressed their concern about having too much work thrust upon them during the period of theoretical training at the institution. It was clear that these women students found the adjustment from high school to college difficult. They mentioned that Engineering was very 'difficult' for them, especially during the first few trimesters.

The following comments exemplify the ways in which some of the students struggled academically:

> I came here and have been studying since 2013. Engineering is very challenging. It needs a person who works very hard so that's why I took so long. Sometimes when you write exams, you write well, but when the results come, you see you failed. You ask yourself, what happened here? (Thato)

> I have been here since 2014. I started from N1, then N2, N3, N4 and at N5, I did it three times! I did it first, second, and then [the] third time I passed. Engineering is difficult and there is a lot of work to be done in one trimester! (Puleng)

> I started N1 here in 2013, and although this is a one-year, six-months course, I have been here since then. If you fail one subject, everything stops. You have to rewrite it until you pass. (Naledi)

The comments show that, in some cases, access to TVET does not mean instant success. Some of the women found it difficult to navigate through the system and took longer than expected to complete the courses and obtain the qualification. Since bursary funding does not cater for repeat enrolments, students would usually have to use their own resources to complete their studies if they had to repeat subjects they had failed. Whereas there has been a significant increase in the number of women studying Engineering at TVET colleges, the low pass rates and progression statistics show that many students are finding it difficult to cope with the academic pressure.

Poor performance in TVET colleges still persists in the country, with certification rates for the NATED programme at 61% and National Certificate (Vocational) at 39% (HRDC, 2014). Mawoyo and Hoadley (2007), in an earlier study, found that women students who were from low socio-economic backgrounds and studying Science at universities often struggled in their studies, especially during their first year. This was attributed to such students being underprepared for post-school study. Therefore, the type of schooling received by the women in the present study may have been an important conversion factor affecting their college performance and resulting in prolonged study periods.

Experiences of women students after they exit college

At the time of the follow-up interviews five to six months after the first round of interviews, most of the students in the study were still searching for internships and were facing various challenges. None of them had managed to secure an internship. Their feedback in the follow-up interviews pointed to an uncertain future and perceptions of discrimination against women by potential employers, as is evident from the following extracts from the data:

> I think men are the ones who get jobs first in Engineering. In many companies, you have to work harder as a woman to prove that you can still do the same job with the men. So, I don't think we stand equal chances with men. Men are the ones who dominate the industry and are the ones who recruit employees in most cases. So, they are likely to be biased against us women. In many cases, people look down on women. (Thato)

> I think those companies they prefer boys, let's say maybe there is a post for a diesel mechanic that is vacant – it's rare for a girl to get that job, because they look more into males, that's the challenge that we are faced with. They don't think women can be diesel mechanics. (Dineo)

> Umm, [sigh] … I think the thing is … I am not being negative but it's not going to be easy to get the training (apprenticeship), being a woman, they prefer men out there. (Naledi)

Studies that have been conducted to date in South Africa on the transition from college to the labour market reveal results that are not very encouraging (see Papier, 2017; Papier, Powell, McBride & Needham, 2018; Cosser, McGrath, Badroodien & Maja, 2003). Papier (2017) noted that a lack of practical training or exposure to the work environment has a great influence on a person's transition to the labour market. In their study, Papier et al. (2018) found that 48% of 2013 NATED graduates were not employed either full-time or part-time and they were not in internships or apprenticeships at the time of the research, and only about 52% of the respondents among the group of 2013 NATED graduates had managed to secure employment. More worrying was that there were significant gender differences in employment outcomes. Women were found to be employed on short-term contracts and in short-term internships, whereas men were on long-term contracts and in permanent jobs. The statistics point to the challenges that women students face when looking for and trying to secure appropriate jobs and internships, and such findings highlight how gender inequalities may affect women's freedom and their agency as they navigate the post-school system and beyond.

The information above also points to the need for an analysis of these women's conversion factors, since these factors determine the ability of an individual to achieve valued functionings. Robeyns (2008) argues that, in most cases, women have lower conversion rates in translating

resources into valued capabilities because of gender injustices in society. Therefore, norms and values may sometimes limit women's freedoms in different ways. In this vein, Walker (2005:109) asks: 'Do some people get more opportunities to convert resources into capabilities more than others?' Asking these questions is important when striving for social justice. Therefore, while women students have a range of aspirations as they leave college, their gender may be a significant conversion factor: if they face difficulties in getting the jobs that they really want, they fail to convert their capabilities into functionings or achievements.

The South African government has been making strides in moving towards a socially just post-school system by widening access, increasing funding, and trying to resolve the challenges faced in accessing the labour market. But the experiences of the women students in the current study reported on in this article indicate that the government's efforts will have to be intensified in an effort to prevent the disadvantaging of women and to move towards a socially just system.

Issues for discussion

Based on the findings set out above, a number of issues have been raised: attaining social justice, equitable funding that does not disadvantage women students, and the real barriers to entry to the marketplace that women experience. Each of these is discussed below.

Social justice is more than widening access

It was noted above that social justice should go beyond merely making equal opportunities available. More than this, socially just education should be committed to reducing inequalities and should help to ensure that all people, regardless of their backgrounds, are adequately prepared for meaningful participation as citizens.

Providing grants to students in the TVET sector could be regarded as being an effective means of removing the significant barrier of a lack of financial support. Through increased funding and an increase in enrolments of women students, TVET colleges are making substantial progress in the pursuit of a socially just education system by increasing opportunities to study. However, this funding model could unwittingly also become the basis for a binary post-school education by which young people from low socio-economic backgrounds (in most cases black) are enrolled in vocational colleges, whereas middle-class students are enrolled in universities. Such channelling of poor young people into one type of institution could continue only to serve to exacerbate existing inequalities.

Extrapolating from the number of enrolments of women in TVET (see Table 1), one could argue that women have benefited more than men in gaining access to training. On the face of it, this would appear to be the case. But this and other studies have highlighted the challenges that women students face during their studies and in, or on entering, the labour market after they have exited college. What emerges is that women in TVET are hindered by

several obstacles, including harassment, feelings of alienation, and the challenges they face in obtaining internships or employment. These impediments prevent them from achieving the success they had set out to attain when they commenced their college studies.

From the capabilities perspective, success in post-schooling is often marred by various conversion factors which a socially just approach would need to take into account and make an effort to deal with.

Funding

While the South African government provides extensive funding for university students, this occurs mainly through grants that result in accumulated debt. Tuition at TVET colleges is relatively cheaper than that at universities and, in addition, 80% of college tuition fees are paid by the government (in addition to which study bursaries are also made available). For these reasons, a TVET education has become a popular destination for students from low socio-economic backgrounds. But the danger exists that this funding model could become simply another tool that entrenches stratification in the post-school sector.

Universities in South Africa receive the bulk of state funding: from the fiscal allocation to post-schooling of R40.5 billion for the 2017/2018 financial year, 78% (R31.6 billion) was allocated to universities, whereas the TVET and community education and training (CET) sectors were allocated only 16.7% (R6.7 billion) and 5.3% (R2.1 billion), respectively (DHET, 2019:72). A commission of inquiry in 2017 concluded as follows:

> 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. (Heher Commission Report, DHET, 2017:542)

Barriers to women accessing the labour market

The findings in this and other studies such as Papier et al. (2018) suggest that TVET graduates, particularly women, face more challenges or barriers in accessing the labour market than either men who graduate from the same institutions or students at universities. While it should be noted that the career progression of graduates from the same institution may not be linear, it is a matter of social injustice when one group faces more or greater hurdles than others. The TVET college in this study is in a province of South Africa that does not have a strong industrial base; therefore, it is highly likely that students from this province will face more challenges than those from major cities in the country – in addition, that is, to the gender barrier that women already encounter in traditionally male-dominated careers. The perception of TVET institutions as generally being inferior to universities (Baatjes, 2014; HRDC, 2014) further complicates women's navigation into the labour market when those women choose to study Engineering at TVET colleges.

Conclusion

In recent years, priority has been given to increasing access to TVET, and, as a result, more women have been enrolled in predominantly male fields such as Engineering studies than before. It is therefore vital from a social justice perspective to analyse whether an Engineering education is able to enhance the opportunities and freedoms for these women. The use of the CA helps us to understand the facilitators and the constraints that present themselves to women students in the TVET sector. An examination of the experiences of a group of 14 women has revealed various challenges, such as sexist comments from lecturers, feelings of alienation, sexual harassment, a too-heavy workload, the inability of the women students to participate effectively in the learning environment, as well as challenges in accessing the labour market. All of these were noted to be the conversion factors that affect the conversion of resources into valued functionings. Such experiences also hinder the agency of women, which is an important aspect in social justice. This article has therefore described an example of the under-researched field of the experiences of women students in TVET colleges.

Evidence from this relatively small-scale study revealed that women tend to reap fewer benefits from the post-school system than men. Women students in TVET who start out from lower socio-economic backgrounds face even more and greater obstacles. Archer (2003:134) argues that social mobility will remain unattainable as long as students from lower social classes continue to attend less prestigious institutions, because they will continue to experience challenges in securing appropriate jobs that enable them to climb the social ladder. The assertion made by Archer (2003) about the system in the United Kingdom ironically also applies to the current South African context. The South African government's desire to strive towards social justice in the post-school sector is a step in the right direction. But policy and practice will have to extend beyond widening access, participation and funding to issues of retention, dropout rates and enhancing student experiences, particularly with regard to women students.

Acknowledgements

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Growing the TVET knowledge base in the south: South African postgraduate output, 2008–2018

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ABSTRACT

The Third International Conference on TVET (technical and vocational education and training), held by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Shanghai in 2012, resolved that growing research on TVET had to be an integral part of the overall strategy to strengthen the sector. Historically in South Africa, much of the targeted TVET research has been conducted by agencies outside of the university, but the last ten years have seen an increase in the number of TVET studies being undertaken by postgraduate students at universities, largely due to national policies that have encouraged higher education to take a greater interest in TVET research and development. Given the policy focus on TVET and the increased support for research in the field, this article reflects on the growth of postgraduate research on TVET in South Africa in the past ten years. Government targets for postgraduate outputs have prioritised doctoral studies, and, while TVET-related doctoral graduates are relatively few in number, there are signs of an emerging community of researchers and also of an expanding, though localised and highly contextual, knowledge base on TVET. The authors identify a number of aspects observed across the research outputs which could aid further reflection on the kind of contribution that postgraduate TVET research is making. Finally, attention is drawn to the nascent cadre of TVET intellectuals who can – indeed, must – provide much-needed supervisory capacity in this field.

KEYWORDS

Technical and vocational education and training (TVET); master's, doctoral, postgraduate research

Introduction[1]

Technical and vocational education and training (TVET) globally has found renewed significance in the past decade. After its marginalisation in the global education and development discourse under Education for All and the Millennium Development Goals, the arrival of the Sustainable Development Goals has seen TVET return to the international stage of development policy. This global acknowledgement of TVET's importance reflects a continuing focus on the area, with research driven by funding from regional development banks and many national governments (Powell & McGrath, 2019).

Historically in South Africa, much of this targeted research has been conducted by agencies outside of the university domain (Wedekind, 2008), but the last ten years have seen an increase in the number of TVET studies being undertaken by postgraduate students at universities. This is largely due to national policies that have opened up the TVET college sector to scrutiny (Papier, Sheppard, Needham & Cloete, 2016). By 1998, shortly after the first democratic elections in South Africa in 1994, new policies for education and training that included public TVET and industry-based skills development were established, as well as a national qualifications framework. In the two decades that have followed, expenditure on TVET, including that on new bursaries for public college students, has risen exponentially in tandem with increasing participation (DHET, 2019).

The Third International Conference on TVET, held by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Shanghai in 2012, resolved that growing research on TVET had to be an integral part of the overall strategy to strengthen the sector (UNESCO, 2012). Against this global background, there has been a parallel development in South Africa: the national strategy to increase postgraduate output, a trend that will be returned to below. Through the research initiatives of both the NRF's South African Research Chairs' Initiative (SARChi) and the sector education and training authorities (SETAs) funded by the national skills levy, new research chairs in the broader field of post-school studies, including TVET, have been established at universities in the past five years. These brought with them funding for postgraduate students in the under-researched domain of TVET.

The appointment of SARChi chairs in post-schooling fields related to TVET is particularly significant, given the status and funding of these chairs that could be sustained over a period of between five and 15 years, subject to satisfactory progress reports being submitted. In addition, the University of the Western Cape in 2017 established the academic, peer-reviewed *Journal of Vocational, Adult and Continuing Education and Training* (JOVACET) with support from the national Department of Higher Education and Training (DHET) and

the European Union – a necessary step towards building the academic standing of TVET as a field worthy of research scrutiny.

Given the policy focus on TVET and the increased support for research in the field, we considered it an opportune moment to reflect on the growth of postgraduate research into TVET in South Africa, both to map the number of studies and to gauge the scope of the issues that are being studied. As will be detailed below, we used an accessible national digital library to collect data on South African master's dissertations and doctoral theses relevant to TVET that were completed between 2008 and 2018. We take the view that the master's dissertation, with its emphasis on getting to grips with research methodology, is important as a training ground for researchers, but that the doctoral thesis, with its emphasis on contributing to knowledge, is what ultimately expands knowledge of a particular field. The Higher Education Qualifications Framework (HEQF), within which the doctoral qualification is located, holds that the doctoral graduate has to 'demonstrate high-level research capability and make a significant and original academic contribution at the frontiers of a discipline or field' (DoE, 2007:29). Because we are particularly concerned with the growth of the TVET knowledge field in the south, we comment briefly on the master's research output but focus more specifically on TVET-related doctoral theses completed in the past ten years. Given the historical paucity of academic scrutiny and the lack of incentive to conduct research in this area, we take a closer look at the growth of the knowledge base in respect of TVET and the manner in which this is occurring.

First, however, we review the policy context of postgraduate research in South Africa that has given impetus to doctoral studies and within which the growth of TVET studies is located; then we devote the empirical part of this article to responding to the following questions:

• What is the size and shape of the TVET research field (according to the distribution of researchers across universities and to the topics, methods and scale, as revealed by the research questions)?
• Who or what is the research directed at (e.g. institutional leaders, policymakers, practitioners, and national, African or global scholarly communities)?
• What contribution is it making to the existing body of knowledge?

We turn now to a broader view of doctoral research in South Africa and the issues that are endemic to it.

The doctoral degree in South Africa

As stated earlier, our emphasis in this article is on research undertaken into TVET, and more so the doctoral degree, given this degree's potential to advance knowledge of TVET. While the doctorate might not produce 'new knowledge' per se, it is required to contribute fresh perspectives, albeit on questions that may already have been asked but not have been answered sufficiently or definitively.

It is therefore appropriate to sketch the state of postgraduate output in South Africa, more especially doctoral output,[2] since this forms the academic context in which TVET-specific research is situated. As stated earlier, we focus here on the doctorate as a contributor to the national and international knowledge base of whatever field such research is being undertaken in.

A policy focus on quantity and equity

The imperative to increase doctoral production can be traced back to the national Department of Education's White Paper on Higher Education (DoE, 1997) that set an imperative to increase enrolments (section 2.24):

> … at the master's and doctoral levels … for social and economic development and to provide for the needs of the academic labour market.

The National Plan for Higher Education (DoE, 2001), too, recommended increased numbers of master's and doctoral graduates and related research output. This was followed shortly by a new funding model for public universities that linked policy objectives to academic output. According to this model, grants to universities became based on enrolments in programmes, and institutions would be funded not only based on their output of research papers, but also on their output of master's and doctoral graduates. The doctoral degree immediately became a high-stakes achievement for universities owing to the high value of the funding attached to it (Mouton, 2011).

As a result of South Africa's racialised history, though, it also meant that historically advantaged and well-resourced universities would continue to turn out larger numbers of postgraduate students (Herman, 2011). With this in mind, national incentives were created to attempt to correct the imbalances. Thus, targeted bursary funding was made available to increase the numbers of African black[3] and women students in postgraduate studies, and especially in the sciences (Herman, 2011). For instance the Department of Science and Technology's Ten-Year Innovation Plan (2007) aimed to set up strategies to increase the number of doctoral graduates for a global knowledge economy. In addition, the National Research Foundation's PhD Project (NRF, 2007) stated its intention to increase the number of PhD graduates and to increase their diversity. The Ten-Year Innovation Plan set ambitious targets (relative to the numbers at the time) for PhD production to grow fivefold over a period of ten to 20 years.

This policy backdrop goes some way towards explaining the steadily increasing postgraduate enrolments since 2001, with the majority of students (44%) being in the humanities and a sizeable proportion in the education field (Mouton, 2011). The doctoral degree showed the

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2   We acknowledge here the extensive work done in this regard by Prof. Johan Mouton, Director of the Centre for Research on Evaluation, Science and Technology (CREST) at Stellenbosch University.

3   The term 'African black' refers to South African nomenclature in descriptive statistics for the purposes of equity targets.

greatest growth rate, and, in terms of output, there was an average of about 1 200 doctoral graduates annually between 2007 and 2009. This can be attributed to the revised university subsidy policy of 2005 that undertook to subsidise the output of master's and doctoral graduates – this resulted in universities acting quickly to ensure there would be graduates as soon as possible after the new funding policy came into effect (Mouton, 2016). The highest growth rate in doctoral intake and graduations occurred between 2008 and 2013: from 1 182 graduates in 2008 to 2 051 in 2013 – a growth rate higher than any other university degree level at the time (Mouton, 2016:53). But the steep growth rate was not without efficiency challenges, as a tracking study of three separated cohorts showed that, on average, 46% of doctoral candidates took seven years to complete their degree (Mouton, 2016:59).

In spite of the growth in doctoral output, in 2007 there were only 1 274 graduates, which translates into 26 doctorates for every 1 million of total population, a statistic which placed South Africa 33rd out of a list of 34 countries for which data are available. This should also be compared with Portugal's 569 doctorates for every 1 million of total population (Mouton, 2011). The upshot is that, even with a boost in numbers resulting from enrolments of students from other African countries, South Africa is far short of its 2024 target of 6 000 doctoral graduates.

Dilemmas of expanded doctoral enrolment

Generally, across the higher education system, whereas doctoral enrolments have grown steadily, this growth has not been accompanied by a comparable growth in the number of supervisors (Mckenna, 2019). A significant element in increasing student targets is therefore the necessary increase in the number of supervisors, a requirement which faces its own set of difficulties. Studies have highlighted the challenge of limited supervisory capacity in universities, a limitation caused by the number of academics without PhDs who cannot supervise doctoral students. This issue can also be traced back to South Africa's apartheid history – universities established for designated groups limited along racial lines the qualifications that could be offered by racially defined institutions; therefore, the historically white universities were privileged to offer higher-stakes research-based qualifications, whereas those universities designated for other racial groups were restricted to more taught qualifications – for example in education. Attempts to restructure and differentiate the offerings of universities in 2001 according to their historical character therefore met with resistance, particularly from those universities that were still experiencing the legacy of unequal development, because differentiation was viewed as potentially entrenching the apartheid dispensation.

Of the 23 universities in 2008, 12 were yielding over 93% of all doctoral graduates, a double-edged sword as staff were being overburdened with a heavy supervision load (Mouton, 2011). Not only that, in some instances, staff were supervising outside of their area of expertise, giving rise to concerns about the quality of a thesis: a startling statistic revealed in Mouton's survey (Fourie-Malherbe, Albertyn, Aitchison & Bitzer, 2016:71) was that 45% of supervisor

respondents said that they had at times supervised students outside their areas of expertise, an issue we will return to below. Post-apartheid, some universities – such as the University of the Western Cape, for instance – have worked extremely hard to rebrand themselves as 'research' universities while maintaining some of their traditional high-enrolment programmes. But, in doing so, they have also had to improve staff qualifications and to incentivise their staff to attain doctorates in order to boost the numbers of doctoral supervisors. On the other hand, historically advantaged institutions with larger numbers of supervisors have continued to produce the bulk of the doctoral graduates.

In addition, there is a substantial attrition rate in doctoral studies that has negatively affected the official output targets. According to Cloete, Mouton and Sheppard (2015:72), 'in South Africa, 48% of the 2006 doctoral cohort graduated after seven years'. In comparative studies, it has been determined that South African students do not take an uninterrupted pathway from undergraduate to doctoral studies (or even from master's to doctoral studies); moreover, the majority study part-time while in employment owing to financial constraints. This also accounts for attrition owing to the pressure of balancing study responsibilities with family time, work responsibilities and the like. Doctoral graduates in South Africa take around five years to complete their degree and are on average older than their international counterparts in the United States, the United Kingdom and some European countries, although, in the field of education, this also appears to be a characteristic of doctoral graduates internationally. These differences have been linked principally to the issue of insufficient funding for full-time studies. Mouton (2016:61) summarises the difficulties of the doctoral candidate succinctly as follows:

> … the larger proportions of students in the social sciences and humanities are enrolled part-time … take longer to complete, are older and often struggle with the demands of their studies.

As can be gleaned from this section, the pressures on higher education with regard to increased doctoral output are multifaceted. Mouton (2011:22), in an earlier paper, referred to four competing discourses that exert pressure on universities and cause doctoral education to be held in tension: the competing demands for growth, transformation, efficiency and quality in higher education. The overriding model of doctoral supervision in South Africa, too, has proved to be a constraint on efficiency, as is outlined below.

A conservative model of postgraduate supervision

The model of postgraduate training prevailing in most South African universities, particularly at the doctorate level, has also been identified as a constraining factor in growing new research capacity. Mouton (2011:26) distinguishes between what he calls the 'thin' model of doctoral training, where there is little structure and more hands-off, 'laissez-faire supervision', and the 'thick model' of supervision, which some universities in South Africa have been moving towards, where there is a level of structure and support in the programme, better screening

of candidates at enrolment, and some compulsory coursework components. However, the popular model of supervision still tends to be a conservative, one-on-one didactic model – which places the burden on individual academics – rather than the more innovative and shared models of supervision practice that can be seen in some institutions abroad. Many international universities include structured coursework, often non-credit-bearing, as part of the PhD process, but this is not the norm in South Africa and introducing this model would depend on individual academics' acquiring funding to implement and maintain it. In South Africa, as aptly summed up by McKenna (2019:np), 'the dominant approach to doctoral education in the humanities and social sciences remains the master–apprentice supervision of individual studies', a labour-intensive and limiting endeavour for the responsible supervisor.

With regard to models of provision, in the United States, the United Kingdom and Hong Kong, for instance, the dominant model among those in the education sector undertaking doctorates is through the Education Doctorate (EdD) route rather than the PhD, and a number of these graduates go on to become university lecturers in their career pathway. The EdD consists of two years' part-time taught classes and assignments and a half-length thesis, a model which appears to have numbers of successful graduates. As indicated above, most TVET practitioners in South Africa undertake part-time studies, but the prevailing part-time model for master's and doctoral degrees is that of the full thesis, which many practitioners find daunting. Few universities in South Africa favour coursework or structured or taught master's and doctoral degrees because the government subsidy funding tends to incentivise the full-thesis PhD route.

The quantity–quality debate

From time to time, concerns about the quality of the doctoral programme in South Africa have surfaced in the media and other forums, particularly regarding whether the national policy drive to increase postgraduate output is having a negative impact on quality. Gumede (2019), in a public media response to the doctoral review currently under way by the Council on Higher Education (CHE), argues that one should not hasten too readily to the inference that an increase in numbers is inversely proportional to quality of output. He highlights as mitigating factors the generally onerous internal quality assurance processes that PhD study entails: admission through approval of the research proposal, the various university committees that scrutinise the proposal and the ethical-clearance documentation, the requirement for external and international examiners of doctoral theses, and the reporting procedures required of supervisors. In addition, and in spite of constraints on their capacity, many universities have bolstered institutional structures and interventions to strengthen their doctoral programmes and support students in the successful conclusion of their research. Nonetheless, the national CHE review commenced in 2019 with institutional self-reviews, which will undergo national scrutiny by external panels. It is widely expected that this review of the doctoral degree will enable university introspection on the apex doctoral qualification in the interests of continuous improvement towards, among other criteria, meeting national policy imperatives.

Another perspective on quality is put forward by Jansen (2011) in an article that speaks to the significance of doctoral research, and which may be instructive to our survey of TVET research which we comment on below. Jansen (2011:141) holds (with regard to doctoral study) that

> … when you can relate a specific problem to a broader class of problems you can then locate your study in the relevant literature and signal departures from, and an advance on, the existing knowledge in the field.

He cautions, too, that doctoral scholars should make modest claims rather than grandiose ones, because 'the social and human worlds are a lot more complex than easy models can address … therefore the quest [should be] for understanding first, before the rush towards practical application' (Jansen, 2011:145). Finally, he concludes that significance of one's study 'rests principally on the foundations of prior research … and that having a firm grasp of that literature [knowledge] makes the difference between routine research and significance in research' (Jansen, 2011:146).

Given the sparseness of TVET research, and its early stage of development, it would be both short-sighted and foolish to be too critical of the quality and significance of the current state of such research in South Africa. In what follows, we refrain from detailed comment on specific studies and instead outline key issues across the output as a whole that may be of value in fostering the development of TVET doctoral research.

The state of TVET research in South Africa

The contextual realities of postgraduate research that precede this section were provided as a backdrop to understanding TVET research in South Africa. TVET-related research is a relative newcomer to the areas of interest in higher education research. This is largely because TVET provision and associated concerns have historically been outside the academic purview of universities. While we do not have previous work specifically examining postgraduate or doctoral research on TVET in South Africa, we do have existing knowledge about the state of TVET research in South Africa more broadly, through both national and continental surveys (cf Wedekind, 2008; McGrath, 2011; Powell, 2013; McGrath, Mulder, Papier & Suart, 2019). Overall, these reviews conclude that South African TVET research has been more concerned with the development and implementation of policy than with theorisation either nationally or internationally, although there are some important exceptions and there has been an increasing sense of criticality. Much of the work has been funded by external development organisations or national departments and agencies, and much has been conducted beyond the realm of universities. Most notably, it has been sponsored by semi-private organisations such as the Human Sciences Research Council, JET Education Services and the National Business Initiative, although the relative balance between think tank and university knowledge production on the subject of TVET has shifted towards the latter over time.

Of the writers on TVET research listed in the previous paragraph, Wedekind (2008) drew attention to postgraduate studies. He observed that most studies since 1994 were either narrow case studies of the institution in which the student was employed as a staff member or broad perception studies covering a wide range of topics and lacking a clear theoretical or implementation focus. He also noted that the concentration of South African TVET research produced outside of universities did not contribute to the development of TVET researchers in the academy, because much of the capacity to supervise resorted outside the universities and was difficult to draw upon. Related to this, much of what was supervised within the academy was done by non-TVET specialists, with resulting negative effects on the grounding of neophyte researchers in the debates of the field. However, Wedekind (2008) envisaged a strengthened university focus on TVET research that would support the development of a postgraduate research tradition in the field and encourage 'the development of an internal research capacity within the college system itself, so that knowledge about the sector is generated from within' (Wedekind, 2008:16). It is perhaps this vision that shows promise in the study of postgraduate TVET output that is outlined below.

A survey of postgraduate TVET research output, 2008–2018

The Higher Education Management Information System (HEMIS) is an established information management tool of the DHET. It is a unit record database that requires obligatory input from universities before it is submitted to the DHET. The HEMIS data are then used by the DHET for the purposes of funding and planning, and for steering and monitoring the higher education sector. The data gathered can ultimately also be used comparatively across institutions. The information about students that is collected pertains to university qualifications, courses, subject majors and the credit values for which students have enrolled, together with demographic data such as race, gender, nationality and age. Data on university staff are another major category of data collection.

With regard to postgraduate output, HEMIS can record the numbers of graduating students and their institutions in nationally defined, field-specific categories, but it is not a repository for the actual theses or dissertations produced or disaggregated within a particular domain such as TVET studies, for instance. For this information, one would have to search individual universities' websites in order to obtain electronic thesis copies that are open-access (for various reasons, some have embargoes on downloading the full text), a potentially tedious exercise. What we found helpful in this regard was a national portal developed to house theses specific to South Africa and to support South African universities to develop such programs. The data presented in this paper were therefore extracted from the National ETD Portal of South African Theses and Dissertations (see http://www.netd.ac.za), which houses a searchable database of publicly accessible master's dissertations and doctoral theses. This repository provided an excellent starting point as a centralised database of master's and doctoral artefacts.[4]

Given that Wedekind's (2008) survey of the TVET research literature ran to about the year 2007, we decided to bracket our study between the years 2008 and 2018 and to confine our review to university studies only. As is the case with many universities, candidates may attain their master's or doctoral qualification either by means of a 'full thesis', which constitutes the entire basis of examination, or by means of a combination of compulsory coursework and a 'mini thesis'. In the case of a doctorate, there is also the option of achieving the qualification by means of published articles according to a set of conditions laid down by the university. For the purposes of reviewing similarly weighted research artefacts, we decided to include in our study 'full-thesis' master's dissertations and doctoral theses which were identifiable by their titles as research conducted in or about TVET institutions, that is, research concerning systems, input, outcomes, staffing, pedagogy, and/or students. The full texts, where available, were downloaded and initial summaries of each output were made against the following headings: Degree; University; Author; Date; Title; Research questions; Methodology; Scope/ sample size; Theoretical framework; Summary of findings.

In all, 71 outputs were identified and summarised in this way; 70% of these were at the master's level, while 30% were at doctoral level. Doctorates were awarded by nine universities, with master's obtained from across 14 universities.

The national portal from which the data were gathered does not specifically mention the 'race' of the doctoral author and it would have been disingenuous to try to infer this from the available data on students and institutions. Our intention at the outset of this article was to shine a light on TVET-related postgraduate outputs, situated as these are within the broader picture of university output, and to attempt to describe the contributions to knowledge that are emerging. For this reason, this research is a first cut of the available data and there would need to be considerable cross-referencing with the HEMIS data on university graduates if one were to conduct a more fine-grained analysis of postgraduate demographics.

It is common in such survey-based research for the data to be left to speak for itself, with the authors remaining in the background. Yet, data never do just speak for themselves – they are inevitably interpreted and reinterpreted by their beholders. For this reason, we intentionally comment on the data and on the field of research they represent, justified by our 30 years (individually) of research, teaching, interaction and participation in the field of TVET.

The national portal was thoroughly trawled for dissertations and theses which could be identified as falling within the ambit of TVET, and there were no deliberate exclusions, except for those documents which, for one or other reason, could not be downloaded. The task of analysing approximately 100 000 pages of postgraduate writing is clearly an onerous one without the support of sophisticated software. Nevertheless, we compared the initial summaries made by our research assistant against a random sample of dissertations and theses which we read fully in order to check for accuracy. And while we can attest to the latter, it is possible that our methodological approach had limitations and that unintended omissions occurred, or that some dissertations and theses were not submitted

by institutions to the database for uploading. Nevertheless, we felt that the search had been sufficiently exhaustive for the purposes of providing a baseline of information that could be periodically updated.

Findings of the survey

In this section of this article, we present the main results of our survey of the postgraduate artefacts found on the dissertations and theses database. As noted above, we found 71 studies: 50 at master's and 21 at doctoral level, all of them completed between 2008 and 2018 (inclusive), approximately a ten-year period.

Master's dissertations

Taking a brief look at the master's level, the graduates were from 14 institutions. Of these graduates, 28% were in disciplines such as Business and Information Technology rather than Education/TVET per se. Taken together, the master's dissertations were mostly concerned with students' attitudes (45%), mirroring Wedekind's (2008) earlier overview. Research dealing with lecturers (23%), curricula/programmes (17%), and institutional policies and leadership (13%) made up the bulk of the rest of the topics, reflecting the very real local concerns of the largely practitioner community of master's students in the field.

Scope and methodology
Master's dissertations are necessarily limited in scope and ambition, their aim being to enable students to get to grips with research methodology. Of the master's studies, 67% focused on one public TVET college, with only one study looking at the provincial level and none concerned with the national level. Methodologically, semi-structured interviews dominated, being found in 65% of the studies, with the number of interviewees varying from 3 to 42 (the latter being a very high number for a master's study). In the minority of cases, this was combined with focus groups, documentary analysis or classroom observations. Within the qualitative paradigm, most noteworthy was one study each that used photo elicitation, life histories and narrative interviews. Quantitative work was less frequent (33% of studies), sometimes in combination with some interviews. Most of these quantitative studies focused on small samples (<100) and on descriptive statistics about attitudes. Four drew on existing psychological scales and sampled above 100 respondents, while one used a small pre-test–post-test survey.

Doctoral theses

Regarding the 21 doctoral theses, and in contrast to the master's dissertations, students' attitudes are almost entirely absent from the doctoral studies, with only one study exploring experiences of personal transformation. Lecturers, too, are a much-reduced focus, again being at the core of only one thesis. The doctoral studies appeared to have a major emphasis on curricula and programmes (10/21), equally distributed between college and workplace foci.

If this is added to three studies focused on teaching and learning, then instructional concerns are at the heart of the doctoral corpus. Another two studies investigated college management, two considered aspects of national policy (one in relation to private TVET colleges), and one dealt with management information systems.

Quantitative versus qualitative approach

At the doctoral level, there were slightly more quantitative approaches, with 8/21 studies using survey methods. However, the use of statistics was almost entirely descriptive and the scale of the surveys relatively modest (apart from one study, the range was 100–450 respondents). Although the language of factors and causality was invoked in some theses, the data showed limited power for causal claims. Interviewing remained a major data-gathering method, being used in 12/21 studies. In most cases, the sample sizes here, too, were modest, with only three studies interviewing more than 20 respondents. At one extreme, for instance, a PhD study was based on only 10 semi-structured interviews, a dataset several times smaller than some other studies, while another (from the same institution and faculty) combined the largest questionnaire response (450) with 10 qualitative studies, all based on multiple interviews and documentary analysis. Two studies used only analyses of texts without any supporting interviews. Most of the theses' data-gathering methods were concerned with interviews and questionnaires, with one reference to ethnography and another the use of the Delphi method standing out as unusual in sample terms, although not internationally. There appeared to be a wider range of methodological approaches in the master's dissertations than in the doctoral theses.

To return to our interest in how the knowledge base of TVET is advancing, which was the impetus for our survey, the fundamental assessment question for a doctoral thesis is whether it is making a significant 'contribution to knowledge'. In attempting to qualify that general question somewhat, we asked two further questions, namely: What aspect of knowledge is the thesis seeking to contribute to (e.g. academic, practitioner, policy) and What is the scale of the knowledge claim (e.g. local, national, continental, global)?

Research questions and key findings

A comparison of research questions and key findings revealed a very strong focus on practice in several of the theses. These included findings that were intended to improve the curriculum and its implementation, for instance in areas such as Plant Production, Civil Engineering and Office Management. Equally, the theses sought to investigate improving e-learning, management information systems and the language of instruction as features of college programmes. Some were more targeted at the level of national policy, contributing, for instance, to debates about the way that private TVET provision is treated; how TVET college leadership is conceptualised at a system level; and how workplace learning for college students can be improved.

A few posited more open, and perhaps too generalised, research questions, such as 'Which employability skills are important in the workplace?' and 'What is the nature of psychological

violence?'. They could be considered too open and generalised when one compares their key findings with their research questions:

- In the first case above, the findings showed that the study was focused on improving the vocational curriculum of Namibia, and,
- in the second case, the focus was on the work environment (college) of South African public TVET lecturers.

In sum, the principal knowledge contribution of almost all of the doctoral studies could be said to be directed at the local knowledge base of TVET research rather than broader learnings applicable further afield. A possible exception was a thesis on private TVET that offered a typology of institutional types that the student argued to be of relevance and significance across the African continent.

Scale-of-knowledge claim

Turning to the scale-of-knowledge claim, one study was as small as an individual who sought to 'develop … facilitation of transformative learning in leadership development in the TVET sector in South Africa', whereas others investigated a narrow curriculum area in an institution without seeking to apply the learnings of that focus to the vocational curricula in South African TVET more generally, or to vocational curricula in other parts of the world. Similarly, there were those that had a regional or a provincial focus (Gauteng, KwaZulu-Natal; Addis Ababa) but that did not use the findings to make wider claims about national or international systems. In spite of the implicit assumption that doctoral studies (should) seek to make a contribution to international debate and scholarship, few of the studies we perused made a claim about an impact on African or global TVET research debates, when there is certainly a need to engage empirically and theoretically with TVET knowledge emanating from the north. Part of the explanation for this may lie in the dearth of academic vehicles for such engagement from the south, for instance the relatively small TVET academic community and a historical absence in South Africa of credible journals for TVET research.

Our view is that this matter of wider significance, particularly for doctoral studies, is one that should be taken up robustly by institutions and academics who are supervising postgraduate research in TVET, and which the institutionalisation of the new journal (JOVACET) could work towards contributing to.

Conclusion

Our comments on the focus and methodology of the TVET studies that were surveyed should not be construed as negative judgement or criticism, because the graduates concerned all met the national criteria of their institutions for achieving their qualifications. Rather, our observations in this article are aimed at strengthening what is clearly an emerging body of TVET research and researchers and at stimulating institutions to direct a more critical gaze at what could potentially be groundbreaking contributions to the wider pool of TVET knowledge.

To summarise the findings of our survey, the key aspects we noted were these: In the main, the research questions were practically and locally focused rather than theoretically and internationally oriented. The methods were dominated by semi-structured interviews and questionnaire-based studies, with relatively modest sample sizes and an overemphasis on descriptive statistics. None of the dissertations/theses claimed to be contributing to methodological development or furthering the boundaries of established methodologies (even though, with some effort, they might indeed have claimed to do so). The intended audience was typically local, often limited to an immediate subject-lecturer cadre or to the national or regional public TVET college sector, with little evidence of talking to national or international academic communities. Finally, theory was applied conservatively, with the doctoral students making little attempt to engage in the discussion of education contexts as illustrative sites for answering wider social science questions.

The limitations that we perceived in the corpus of postgraduate work between 2008 and 2018 could perhaps serve usefully as areas to be considered as the field expands and matures. Principally, TVET research in South Africa will need to have a better balance of goals and audiences. Tackling practical and policy issues is enormously important, but there is a clear need for a greater focus on making a recognisable contribution to scholarship beyond TVET in South Africa which is of wider importance to African and international audiences, and, indeed, to the social sciences. Other elements of a growing maturity of the research field will include methodological innovation and greater theoretical risk-taking.

This said, it is heartening that the number of TVET-related outputs produced by South African universities since 2008 has been growing steadily. But the stark reality is that the national output over ten years in this field is still comparably less than the output of a typical, established TVET research centre in those nations where the TVET research output is considered major. Seen in the light of official attempts at the national level to increase doctoral graduates as outlined in this article, there is reason to be hopeful. What remains to be seen is whether the number of TVET specialist university academics who are able to supervise within their area of expertise will increase noticeably.

It is important to emphasise that these are early days in the development of TVET as a field in South Africa. And while there are some established research organisations that have conducted TVET research historically and which possibly comprise knowledgeable and experienced researchers, these researchers are not academic supervisors at universities where such capacity might be sorely needed, and they remain outside the formalised knowledge-production arena. In view of the relative immaturity of the field in South Africa, the creation of pockets of concentrated resources for building postgraduate teaching in TVET is vital, not just for the reproduction of the field in universities but because the wider ecosystem of think tanks and policy forums has very limited capacity at this time.

A factor that may contribute to research that pushes the boundaries of knowledge more aggressively is that of an active specialist community with recognisable champions or scholars

in the field. It would appear that several of the doctoral candidates included in our survey were not located in active TVET research communities with associated scholars, and that the candidate was or is the sole researcher (or one of very few) in a field which was or is not the major focus of the institution. It should be noted that the very recent investment by government in the national research chairs initiative is yet to feature in this data. But this investment does signal a potentially faster acceleration of TVET postgraduate research output in the country. The initial indications are that around 30 or so postgraduate students are engaged in TVET-related research currently, most of whom are funded students, across five or six universities. National funding has bolstered research in a number of cases, leading to the creation of new, secure academic posts and postdoctoral appointments that will further reinforce the field's development and support the development of a TVET research community.

Engagement as a community is crucial to building the TVET knowledge base. Examples are the communities fostered by the establishment in 2017 of JOVACET and also by the first national TVET research seminar for postgraduates held in Cape Town in late 2019. Both constitute important steps in this direction. Expanding upon and sustaining these spaces will be important for the health of the field in future, and so, too, is building the community to include supervisors and students across more institutions and wherever TVET research capacity needs bolstering. For instance, experts in the TVET domain outside of universities present a valuable resource and could perhaps be invited to be part of university supervisory teams. Furthermore, publications arising out of postgraduate studies could be encouraged to use JOVACET as a vehicle for emerging scholars, subject also to the rigours of the peer-review process.

While we would not wish to be prescriptive about a South African TVET research agenda, we will offer some thoughts on current research gaps, drawing both on our own reflection on these and the gaps as identified by the DHET in their ongoing large research investment in the sector. One priority is new research on TVET lecturers, focusing both on the *how* and the *what* of the curriculum and the pedagogy they deliver; and also on questions related to their work and lives that pertain to the health, improvement and sustainability of the workforce. Another priority is more and better research on students. The policy focus here is on access, retention, pass rates, and destinations, all of which are important. However, there also needs to be work that looks carefully at where learners come from, including the experiences of many of them of multidimensional poverty; why they enrol, which goes beyond simple economic calculations; and how they experience college and make decisions about whether to continue with their studies or leave.

Clearly, TVET research needs to focus much of its attention on preparation for the world of work, but there is room here for going further to consider what desirable work futures might look like and what TVET should be doing to support developments in those directions. This would include thinking about TVET responses to the 'Fourth Industrial Revolution' but also to the challenge of sustainable futures. There are also research gaps at the institutional

level. In addition to a focus on standard topics of leadership and management, there is a need to link such questions to the other research concerns listed here in order to ask what institutional forms, systems and cultures are required to make public TVET colleges better meet their mandate. Moreover, there is a need to build a stronger research culture about other aspects of the TVET system.

Our survey of ten years of postgraduate TVET research outputs, notwithstanding its limitations, illustrates that there is growing research interest in the field. It also reveals an emerging intellectual cadre that should surely be harnessed to boost the supervisory capacity among academics in higher education where a shortfall exists in this domain.

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Interview with Adrienne Bird

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Introduction and background

Adrienne Bird played a seminal role in skills development in South Africa, and she did so across a broad canvas. I was fortunate to capture an interview I conducted with her in August 2017, two years after she had been diagnosed with acute myeloid leukaemia. She was in remission at the time and working for the Department of Higher Education and Training (DHET).

Adrienne was a major architect in the design of South Africa's skills development strategy during the 1990s. Through her involvement in the trade union movement, she was instrumental in South Africa becoming one of the first countries to adopt a National Qualifications Framework (NQF). She also had a hand in the creation of sector education and training authorities (SETAs). Then, after the DHET was established in 2009, she played a role in the formation of the Quality Council for Trades and Occupations (QCTO) as its first chief executive officer (CEO). From then on, she played a lesser-known, but nonetheless critical, role in identifying the skills required by the multitude of infrastructure projects that the National Infrastructure Plan was formulating. In addition, she worked with industry to raise the quality of skills training at technical and vocational education and training (TVET) colleges through the Centres of Specialisation. She clarifies what all this entailed in the interview below.

Adrienne's involvement with worker education and training began in 1985, when she was appointed the Transvaal educator of the Metal and Allied Workers' Union (MAWU). In 1987, MAWU merged with other unions in the metal and motor industries to form the National Union of Metalworkers of South Africa (NUMSA). She was given the assignment to formulate

a skills development strategy for NUMSA. From 1988 to 1990, she underwent a mind-shift about industrial training and skills for workers when she was invited to the Metal Industry Training Board and saw how it trained workers. She then set up a Research Development Group with which she went on international learning missions. What they learned in Australia from its Metalworkers Union was most impressive. The group subsequently developed a strategy for education and training that eventually gave birth to the NQF.

In 1990, Adrienne became NUMSA's full-time national training coordinator. With the Research Development Group, she developed a strategy for black workers to receive industrial training in order for them to be appointed into more skilled occupations with higher earnings. The training was to be formalised so that workers would gain a certificate for every course they passed. The goal was that all forms of discrimination had to be removed. In 1991, COSATU adopted NUMSA'S strategy and made Adrienne its representative on the National Training Board that advised the Minister of Manpower on training.[1]

I was particularly interested in hearing directly from Adrienne whether the intention in establishing SETA learnerships was to, in time, do away with apprenticeship training. This was borne out by the decline in apprenticeship training and qualified artisans after the Skills Development Act was passed in 1998. Although there had been a decline in the number of apprentices qualifying as artisans over the preceding 10 years, the numbers declined further by almost 50%, from 4 950 to 2 550 from 1998 to 2004.[2]

Two years after the interview below was conducted, Adrienne Bird sadly succumbed to myeloid leukaemia, a life tragically cut short. Publishing this interview is a tribute to Adrienne and her strong commitment to advancing skills development in South Africa.

Adrienne in her own words

JOHANN: Adrienne, I want you to start right at the beginning …

ADRIENNE: Okay. I started with the unions close on 30 years ago. And the issue for the unions was: How do you get access for workers who have a poor education base? We learnt a lot from the Aussies, the Australian Metal Workers' Union, and they developed something called a national qualification framework for Australia, and what we liked about it is it gave a stepped approach to learning.

So, we built on that, saying that workers will then be able to incrementally improve their general education capability, but not in an academic fashion,

1   Kally Forrest. 2011. *Metal that will not bend: National Union of Metalworkers of South Africa 1980–1995.* Johannesburg: Wits University Press, 56, 216–218, 250–253.

2   Andre Kraak. 2008. Three pathways to intermediate skilling. In A Kraak & K Press (Eds). *Human resources development review 2008.* Cape Town: HSRC Press, 22(1):487.

in a work-related fashion. Many workers had learnt the skills on the job; they were doing the work, but they hadn't had the theory. They often had literacy problems. The idea was to have this aggressive thing. We developed the proposal for the NQF in South Africa and that came into being with the SAQA Act [South African Qualifications Authority Act] in 1995.

Then I, as a trade unionist in NUMSA, sat as a rep on five industry training boards. The main one was the metal board, which was initially called the Metal Engineering Industry's Artisan Trading Board. It was just artisans. Anyway, it changed to become the Metal Engineering Industry's Education and Training Board, which was broader, and we started to make inroads.

Then 1994 came and we said, 'Let's build on where we have got to. Let's take these industry training boards, but turn them into sector education training boards, SETAs, and let's put them right across the economy.' It was an unusually open period in our country and people allowed that to happen. I mean, today, I don't think you'd get away with it, or a national levy. The levy was negotiated, the sector bodies were set up, this time with a much broader mandate to look at all the work levels, and so on.

And then the question came, 'How do you hold this massive organisational energy together?' It was agreed that we would establish a national skills development strategy. And the aim of the strategy was to identify certain priority areas that all of these structures should address in their sectoral spaces.

But, remember, there was a big divide between the Department of Labour and the Department of Education at the time. It's only beginning to heal now, a big weakness. Our focus was initially on the number of employers that submitted workplace skills plans. They could get a mandatory grant back if they submitted these plans. Initially that grant back was 50%, so it was huge. It's since been cut back. Then there was a discretionary amount, which was the interpretation of these national priorities in the sector, things like the number of learnerships, the number of young people, and so on.

It started getting going. There was a sort of momentum. The learnerships started taking off and so on, but I left in 2005 and at that time they were negotiating the second NSDSII [National Skills Development Strategy II] with employers, which was a slightly broader exercise. I wasn't directly involved with NSDSII. Then there was NSDSIII [National Skills Development Strategy III] and that's the one that's currently being worked on. NSDSIII talks about the need for a skills-planning mechanism and

it talks about plugging lots of gaps, like giving university students and college students workplace learning opportunities, helping with lecturer development, and so on. It's got a whole lot of different pieces that it's looking at. So you can see the influence of the new department in the NSDSIII.

Now, your next question?

JOHANN: Learnerships, apprenticeships and artisans. I can appreciate why you lifted the others up, but was there ever an intention to phase out apprenticeships and artisans and to replace them with learnerships?

ADRIENNE: No.

JOHANN: Not?

ADRIENNE: Well, the idea was to give workers an opportunity to get to artisan level. Artisan was the kind of target. Because the workers that were in NUMSA, where I was at the time, were thinking much beyond artisan, you know, thinking technician or technologist or engineer. It was too far a jump. Our focus was here and now, how do we get to artisan?

JOHANN: Artisan, okay.

ADRIENNE: But when we looked at legislative issues, we never repealed the Manpower Training Act sections that dealt with artisans.

It wasn't ever our intention to do away with it. It was to offer another route: you could either do the traditional apprenticeship or you could do a learnership which would take you to the same place.

It's been misunderstood generally, because people said, 'Oh, you tried to do away with artisans.' It was never the case. And as evidence, we never changed the Manpower Training Act, which had all the apprenticeship stuff in it, the traditional apprenticeship. We merely complemented it with learnership stuff.

That has been misunderstood. And the NQF that came up was very novel at that stage, because now NQF exists everywhere you look. We were one of the first countries, not the first, because the Aussies were ahead of us.

And it was quite interesting: we negotiated the new National Skills Development Strategy under what was then called the National Training Board. In 1992 I was a rep on the National Training Board

and at that board we were negotiating the new skills dispensation. It was just another of those negotiation sites that were happening all over the place at that time. And it turned into the NQF we'd woken up to in 1989, all because of our partnership with the Metal Workers' Union in Australia and their trainers. Then we pulled them back and said, 'Come and help us.'

When we were doing all this work, it turned out that the employers were doing similar work. So there was resonance with the employers. We got agreement and that was what triggered the work into the department. The new Minister of Labour accepted the results of those negotiations as the basis for his policy.

JOHANN: And did he have very different plans or were they in line with what you were thinking?

ADRIENNE: What did happen is that we set out the SETAs in order to open up the pathways for workers with the learnership idea coming from the NQF debates. But what we inadvertently did – and we never intended to do it, but it was a consequence of what we did – we created these silos, economic sectoral silos. The consequence was that we started to get qualifications being developed that were unique to the sector, but often having the same title: you'd have an electrician for the mining industry, an electrician for local government, an electrician for …, and so on. I think there was something like (I don't remember exactly), like 15 different electrician qualifications. Whereas historically there had been one electrician, now we had 15 electrician qualifications. This sectoral character of the qualifications became a problem because there wasn't nice mobility across the sectors.

JOHANN: Just to pursue this a little bit. Each sector does have, could have, different sets of skills that are required, that are not transferable but are unique to that sector?

ADRIENNE: Ja, there are some, but we needed both. For the big artisans we needed national qualifications, and it was the push for national qualifications that led to the development of the Quality Council for Trades and Occupations (QCTO) in 2010.

JOHANN: One of the problems I've heard about the QCTO is that there are more than 1 000 occupations, but only about a 100 of them have been properly spelled out. There is this enormous backlog that is going to take years to fill. That's the kind of criticism I'm hearing. Is that valid?

ADRIENNE: The question is really: 'What's the aim?' And I must tell you there is a debate going on. What I say to you might not be the view that everyone shares, but the thing that we started working on in Labour is the development of something called the Organising Framework for Occupations, the OFO. It's a classification system of occupations. StatsSA has always had one. It was based on the International Labour Organization (ILO). They called it SASCO, South African Standard Classification of Occupations. We played with that and we started learning again from the Aussies and the New Zealanders as well as the ILO, which was working with them at the time. The aim was to come up with a new classification system that was more aligned to skill profiles.

The original SASCO was just a description of occupational titles and their relationship to one another. The new one was to give some sense of the skill that was embedded in each of those occupations. And in that occupation profile a classification system was developed in which there are 1 500 occupations. If you look at this through the lens from where I'm located now – the public education and training providers such as the colleges or the universities – that's probably way too many.

Then we looked at the German system. That makes it easier because the Germans have got somewhere around 300 what they call professions, which we call occupations. And that's it. What they do is they go for broad occupations that give excellent mobility. They have this very strong social dialogue, a social partnership with arrangements at every level. They reach agreement on these very general occupational qualifications which are then published in their *Government Gazette*.

There is quite a push now to reduce the number of occupations down from the 1 500 to something that's more manageable. So, the distinction between job and occupation becomes an important one. At the moment we're trying to address the sectoral character of what was developed under Labour, the SETA story, and at the same time trying to get these more generic occupations.

What happened is, there was such a divide between the Departments of Labour and Education that they didn't talk to each other , hey.

JOHANN: Sad.

ADRIENNE: Part of it was institutional and part of it goes to the fundamentals of what some people think of as education and what other people think of as useful training. Those on the education side thought you must be a problem-

solver and you must be a citizen of the world and you must question this and that. And then those of us sitting in Labour said, 'Yes, but who is going to fix the geyser when it breaks?'

What they called the NATED, National Accredited Technical Education Diploma courses, N-courses, were to be phased out completely by Education and replaced by something called the NC(V), the National Certificate (Vocational). And that was designed to have no workplace learning at all and to give people the sort of general introduction to a field of learning. But then they found out what happens to the learners: the universities didn't want them because they didn't have enough theory, and industry didn't want them because they didn't have enough practical.

So this NC(V) sits like a pudding in the middle, you know?

JOHANN: Now there is a muddle?

ADRIENNE: Ja, there is a muddle. When 2009 came along and skills were transferred to – were combined with – Education, that section of Labour was moved across to Education. At that time the director-general pulled me back in.

JOHANN: When did you come back into DHET?

ADRIENNE: 2009, when it was established. In 2012 the president announced the National Infrastructure Plan. It was the big infrastructure programmes which were intended to lay the foundation for economic growth, crowd and private-sector investment, all that good stuff.

The minister of higher education was given the job of ensuring that the skills required for that were provided. He set up a Special Projects Unit. I had been acting CEO for QCTO from 2010 to 2012, then somebody else got the job and I went to the Special Projects Unit. Basically, what we've been doing is we've been spending a fairly long time, till September 2014, developing a tool to understand what skills are required for these infrastructure projects.

We really did considerable work. We developed an electronic tool where one can go from the projects and the skills required for each project to elevating them and getting a picture across all of the projects. There are something like 2 000 infrastructure projects, a dam here, Medupi there, roads here and there, new schools and new universities, and all that.

We analysed the skills that are needed for each project type and we produced a typical skills set for a project type. Then we established the number of

projects in each project type. With some technical expertise we came up with a National Skills List, that is, a list of priority skills. We came up with about 94 of them, but then we struggled because at the time there was no way of translating the National Skills List that we had into the planning functions of the universities and the colleges.

Universities are quite protective of how they do things, and the branch that oversees them was nervous about being prescriptive. We circulated to the universities what skills were needed and there were some responses.

But in the college space at the Intermediate Level, what we did was we said we wanted to train more artisans and we extracted from the list that we had 13 priority ones. Then it was a case of how do we develop them? It was a case of either we dealt with traditional sectoral-based learnerships, and so on, or we used the new QCTO qualifications and tried to do it that way. We developed a very big project focusing on these 13 trades, but aiming to build the capacity of the colleges together with industry to build these skills. That's what I'm doing now. I'm driving this project and we're working closely with industry.

JOHANN: Is this going to take another three years? How long is it going to take, because it sounds excellent to me?

ADRIENNE: Well, I can put in timelines. We hope all the evaluations will be done by the end of August and that the DG [director-general] will approve them by the end of September and we'll issue awards on 3 October 2017.

JOHANN: Fantastic!

ADRIENNE: We're working with these industry groups now. They are effectively leading the new evaluations.

JOHANN: I was recently invited by a college to go to three campuses and the uniform cry in the motor trade and in fitting and turning is, 'Look here, we sit with this old technology. And we know we're training our students on obsolete machinery no longer used by industry.'

ADRIENNE: Look, there are two solutions to that. One is to buy, try and buy, but it's immensely expensive and they can only be equipped with basic stuff. It's the partnership with industry that's so important. What they've done in Germany is they create shared centres where a number of colleges would send apprentices because it's just too expensive to do it at every college. In Germany it's led by industry. It's this link that's so important.

JOHANN: Yes. Is industry coming to the party?

ADRIENNE: Well, I can't give you a real answer yet. What I can say is that we've got one of the major employer associations on board. It is a major player in what we're doing ...

                What was interesting is that many of these associations have never tendered for anything before. Some of them just haven't applied. So we've also had to make some compromises.

                That's what I spend most of my time on. And in the other part of my time we have entered into what we call 'protocol agreements' which specify intergovernmental relations. If a national department is partnering with a provincial department, for instance, it's called a protocol.

                And the methodology that we developed we call the 21-step process of determining what projects there are, what skills are required, how you hand over information about what's required to the colleges and universities, and so on. That methodology we've made the foundation of this agreement between ourselves and the offices of the premiers in the provinces. What they're doing is looking at their own provincial growth and development plans, which is infrastructure but often also other kinds of strategic project.

                We've done a lot of work with KwaZulu-Natal. And they're looking at their SIP (Strategic Integrated Project). They're applying our methodology to all of those projects to derive skills lists and to put agreements in place with the universities and the colleges. It looks like we're about to start with Limpopo. Others have expressed interest. Western Cape does its own thing, more or less, which is fine. North West has shown interest. We've got five agreements with five different offices of the premiers.

                But I think, you know, from your interest about the link between skills and work, this was an example of how we've tried to take it to scale. We tried to say, 'Look at your total strategy,' because I'm a strong believer in the notion that occupation takes precedence over sector wherever possible. It gives the youngsters the best possible employment opportunities if you make them flexible. Remember what those employers do: they advertise for qualified people in the main. If they need an electrician, they'll advertise for an electrician and they'll expect that person to demonstrate they've passed a trade test. It's the state's job, I think, to ensure there is generic training that enables people to enter that kind of occupation. I mean, the private sector, if they want an engineer, they recruit an engineer who is qualified so that the employers can trust the skill when they buy it.

JOHANN: One of the complaints at the college [I visited] was that industry has all the latest equipment for training, but they're training only a small handful.

ADRIENNE: Well, what we're exploring is what we call Centres of Specialisation Projects in 13 trades. We're looking both at building the capacity of the colleges, but in certain cases entering into partnerships with private training centres to provide the practical training because we'll never be able to afford that kind of equipment to scale. But then we've got to look for a financing model, which makes it attractive to the partnering company and to the college.

And just by the way, I spent four years researching the history of the apprenticeship system in South Africa.

JOHANN: Wow!

ADRIENNE: Because of the leukaemia I'm planning to retire and I thought I wanted to write this history. I'm sitting with a draft and I want to do something with it because I've done extensive work. I did it through interviews with people, in the main. Truly, I've gone back a hundred years. So maybe there is a way in which I can publish it.

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

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