

The Collaborative Development of a Curriculum Framework

Curriculum Framework for the Advanced Diploma in Technical and Vocational Teaching

Undertaken on behalf of the Department of Higher
Education and Training (DHET); and kindly funded by the
Education and Training Development Practices Sector
Education and Training Authority (ETDPSETA)

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ADVANCED DIPLOMA IN TECHNICAL AND VOCATIONAL TEACHING – Adv Dip (TVT)

NQF LEVEL 7

A QUALIFICATION ON THE HIGHER EDUCATION QUALIFICATIONS SUB-FRAMEWORK (HEQSF)

FIELD 005: EDUCATION, TRAINING AND DEVELOPMENT

MINIMUM TOTAL CREDITS: 126

MINIMUM TOTAL CREDITS AT LEVEL 7: 120

Introduction

Technical and Vocational Education and Training (TVET) has been a feature of the South African education and training system for a very long time, albeit in many different guises in the past. In recent years however, there has been much renewed interest in TVET. This is partly because TVET has fuelled phenomenal economic growth in some countries (McLean and Wilson, 2009: 1xxix). Not surprisingly, within the context of poor economic performance, South Africa has also taken notice of this phenomenon. The result is that in South Africa, the post-school, pre-university, TVET and skills development sectors are encouraged to expand rapidly, especially in response to the needs of those students who are not eligible for university education. In the South African public TVET sector for example, enrolments has increased from approximately 350 000 to 650 000 in just three years (2010 to 2013) (DHET, 2014: 12) and is set to further expand substantially (DHET, 2013: 7):

By 2030 the goal is to have head-count enrolments of 1.6 million in public universities, 2.5 million in TVET colleges, and 1.0 million in the community colleges... In addition, it is estimated that there will be approximately 0.5 million enrolments in private further and higher educational institutions.

The growth of the pre-university sector is an international trend. UNESCO's International Institute for Educational Planning (IIEP)¹, for example, says that 'non-university technical programmes are the fastest growing forms of post-secondary education' – this was evident from tracer studies in five countries (Azerbaijan, Chile, Malaysia, Nigeria and South Korea, undertaken in 2010). In the Republic of Korea, for example, as many as 40% of secondary students are enrolled in TVET (McLean and Wilson, 2009).

In South Africa, in addition to current TVET colleges, non-university students are to be housed in a variety of post-school institutions: community colleges (a reconfiguration of current public adult learning centres); non-Department of Higher Education and Training (DHET) public colleges such as agricultural, defence, police, forestry and other colleges associated with particular government departments; and provincial and municipal colleges. In addition, new public TVET institutions are

¹ <http://www.universityworldnews.com/article.php?story=20140417105022170>

planned to be introduced into the mix. Recently, in addition to the 50 public colleges already in existence, the DHET has proposed and started the building of twelve new campuses, and two new universities, to serve the burgeoning post-school population. There are also thousands of small, single purpose institutions in the private sector, serving both pre- and in-service student bodies (linked to Sector Education and Training Authorities), as well as a strong, emerging private TVET sector, the number of which is estimated to stand at approximately 12 000 such institutions² (Blom, 2011). Delivery of technical, vocational and occupational programmes is therefore substantial, and growing.

Furthermore, the Department of Basic Education's (DBE's) plans to reintroduce technical and vocational streams in basic education, necessitates the development of technology and vocational teachers for that sector. Likewise, the reconfigured Community colleges will also offer technical and vocational programmes and thus educators³ have to be developed to meet these needs.

However, much of TVET has been taking place in a definitional vacuum. Countries and regions define technical and vocational education and training in a variety of ways, depending on the context. In 1999, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the International Labour Organisation (ILO), together with their member states, adopted the term TVET, and it is now in widespread use. It refers to 'education and training that prepares persons for gainful employment (1xxviii)...'; and is offered in the 'post-secondary community and/or technical colleges, or informally by means of training at the workplace' (McLean and Wilson, 2009: 1xxvii). In many countries TVET encompasses 'apprenticeship training, vocational education, industrial arts, technical education, technical/vocational education (TVE), occupational education (OE), vocational education and training (VET), career and technical education (CTE)', to name a few (McLean and Wilson, 2009: 1xxvii).

Furthermore, a defining characteristic is the strong links with business and industry which reflect the development of occupational identities and outlooks through the 'socialization of the individual into the culture of a particular occupation' which tend to (McLean and Wilson, 2009: 1xxvii):

...remake its members in its own image—the longer the individual stays in the same occupation the deeper the transformation. Thus, an individual's occupation can be a good indication, in broad terms, of the individual's likely social construction of reality, since a wide variety of attitudes, values and behaviour are correlated with a person's occupation.

To encapsulate these dynamics, the following definition was adopted by UNESCO and the ILO, which is also the definition used to describe TVET in the *The Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training* (Government Gazette, 2013):

² The data management in respect of small, private institutions is notoriously unreliable – hence this figure is given as an approximation.

³ The terms 'teacher'; 'lecturer'; 'trainer', etc. are often used interchangeably in international and local discourses. In this framework, the generic term 'educator' has been used in order to encompass all these meanings. 'Lecturer' is only used in terms of official documents and/or verbatim quotes.

Technical and vocational education is used as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupants in various sectors of economic and social life (UNESCO, 1999).⁴

TVET is thus seen to be a form of education and training characterised by its close relationship with work, and the world of work, which is achieved by curricula that ‘faces both ways’ (Barnett, 2006), i.e. curricula that provide general, as well as occupational knowledge, through its linkages with business and industry. In this regard, it should also be noted that when ‘work’ is discussed, it refers to the possible non-formal, as well as formal nature of work. In many cases TVET lends itself to self-employment and informal employment, which are important contributors to the economy and to the social well-being of individuals.

Nevertheless, despite its perceived importance in relation to the economy, there has seldom been a concerted effort to develop the educators in the field (Blom, 2015):

In the TVET college sector, the shortage of professional lecturing staff in technological fields is considered debilitating. Yet, in the *White Paper on Post-school Education and Training*, the TVET sector is seen to be ‘the cornerstone of the country’s skills development system...to address the country’s acute skills shortages’ (DHET, 2013: 12). However, the same *White Paper* hints at the current shortcomings experienced in respect of staff: the current staff complement is inadequate for the growing student numbers; they are inadequately trained; or are not trained in the disciplines required. Consequently, the sector is very poorly prepared for the massive expansion drive mentioned in the *White Paper*.

Taylor, in his review of the priorities for education and training for the National Planning Commission (NPC) (2011: 47) confirms that until recently in South Africa ‘there was no training base for TVET college lecturers’ and further, there has never been an effort to develop a *new* pipeline of educators. The TVET sector therefore has had, in its recruitment practices, more often than not, being forced to appoint educators from the ranks of their own graduates because no other trained personnel are available. This state of affairs does not bode well for a sector that has to carry the burden of expectations, both in terms of the economic and social needs of the country.

This deficiency was examined in an Organisation of Economic Cooperation and Development (OECD) review of the South African TVET system (2014), where the research team noted that (2014: 97):

Effective and professional teachers and college leaders are the key to quality in vocational education and training. In South Africa, although many teachers and college leaders are of high calibre, some teachers lack the right mix of skills and there is little structured preparation for college leaders... [Intervention] measures need to ensure the right balance of both industry

⁴ http://www.unevoc.unesco.org/fileadmin/user_upload/pubs/Handbook_Introduction_RM_DW.pdf

experience and pedagogical skills in teachers, and include strengthened professional preparation for college leaders.

The suite of qualifications proposed by the DHET's *Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training* (Government Gazette, 2013), intends to address these shortcomings in the South African education and training system. The Advanced Diploma in Technical and Vocational Teaching (Adv Dip (TVT)) is one of the qualifications proposed to prepare TVET educators for the task.

These new TVET educator qualifications build on a number of previous initiatives to capacitate the TVET sector. Many of the previous qualifications were school-teacher programme variants offered in the college sector, for example the Post-graduate Certificate in Education: Further Education and Training and the National Professional Diploma in Education: Further Education and Training. The most recent initiative, the Vocational Education Orientation Programme (VEOP), was introduced in 2010, and is still offered by many higher education institutions. This programme was the first in recognising that TVET needs a particular approach and many current TVET educators benefitted. Hence, educators who have completed this programme may receive prior learning credits in relation to the Adv Dip TVT. The new qualification thus builds on previous capacitation efforts.

To incentivise public and private universities, the DHET, through the kind support of the Education and Training Development Practices Sector Education and Training Authority (ETDPSETA) funded the collaborative development of the Adv. Dip (TVT). Fourteen universities were involved in the collaboration of this curriculum framework⁵.

1. Rationale for the Qualification

In the light of the above discussion, the rationale for the qualification is:

- 1.1 An improved and efficient Technical and Vocational Education and Training (TVET) system is a priority identified by government, industry and learning institutions in respect of enhanced responsiveness to the needs of the economy, to the needs of current and prospective students and social transformation;
- 1.2 The Adv Dip (TVT) responds to the need to develop teaching competence in the technical and vocational education and training sector, particularly in the light of previous ad hoc development of educators at colleges and training centres, and in recognising that successful output (student graduation) is directly related to successful input (teaching expertise);
- 1.3 It therefore focuses on technical and vocational contexts in recognition that teaching and learning in the TVET sector requires specialised pedagogies cognisant of the diversity of the student body, and in response to the needs of the world of work;

⁵ See Annexure 1

- 1.4 Further, it aims to develop the capacity of current and prospective technical and vocational educators to build relationships with local, national and international business and industry in order to enhance their knowledge and insights into the most recent trends and technological advances, and to incorporate these insights into their teaching practice;
- 1.5 The qualification provides for career advancement in the sector as it articulates with a variety of cognate programmes on the Higher Education Qualifications Sub-Framework (HEQSF) and on the National Qualifications Framework (NQF);
- 1.6 The qualification can be offered as an initial professional teaching qualification to prospective TVET educators, or as an in-service professional teaching qualification to educators, who are in possession of at least an approved 360-credit level 6 National Diploma or relevant bachelor degree;
- 1.7 It also recognises previous educator experience in respect of teaching and professional practice in business and industry;
- 1.8 This curriculum framework for the qualification was developed through a collaborative effort of public and private higher education institutions. Within the context of institutional autonomy and academic freedom, the collaborative development is intended to serve as a common standard for the qualification while allowing for preferred institutional frameworks, approaches and theoretical frameworks.

2. Purpose of the Qualification

Evans (*et al*, 2011: 153) maintain that TVET is set apart from general schooling programmes in that TVET curricula:

...explore the intersection of work-based pedagogies that originate from research into how people learn in, for and through work, with the further and higher education pedagogies in which the subject-dominant starting point is applied to people at work.

The purpose of TVET programmes is thus the building of vocations and the linking of education and work. A TVET educator qualification consequently needs pedagogical practices that will prepare students for the world of work. Professional TVET educators are therefore seen to be competent in 'teaching for work'.

The purposes of TVET educator qualifications are:

- 2.1 The Adv Dip (TVT) is a professional teaching qualification for lecturing at institutions that offer technical and/or vocational education and training programmes;
- 2.2 It is a 'capping' qualification for graduates and/or diplomates already in possession of a general undergraduate bachelor degree or diploma, to become professionally qualified as a TVET educator;
- 2.3 The Adv Dip (TVT) offers entry-level professional teaching preparation of graduates/diplomates to develop expertise in teaching in a particular TVET field or subject.
- 2.4 Professionally qualified technical and vocational education and training educators will be able to:

- Teach their subject, and select, sequence and pace subject content in accordance with subject and student needs and the requirements of the curriculum;
- Manage their teaching environments effectively in order to enhance learning;
- Develop and administer assessment in varied and reliable ways, and use the results of assessment to improve their own practice and students' understanding;
- Equip themselves for incorporating work into teaching and for preparing their students for the demands of the workplaces;
- Engage with the TVET context, including the policy environment and contextual realities of the sector, in order to adjust their practice appropriately;
- Deal with diverse socio-economic contexts, ages, cultural backgrounds, life and work experience, learning styles and aspirations, and special education needs of their students, to ensure maximum student success;
- Communicate effectively through advanced speaking, reading and writing skills in the language of learning and teaching;
- Integrate information and communication technologies in an effective manner for their own and students' progress;
- Embody positive work ethic and values in a manner that honours and advances the vocational teaching and training profession;
- Reflect critically in, and with, the professional community of practitioners, on their own practice, in order to improve and adapt to changing environments.

3. Rules of Combination and Knowledge Mix

The qualification comprises five distinct, but inter-related and mutually supporting areas:

3.1 *Disciplinary learning*, which includes the study of education and its foundations; and, the study of specific and specialised subject matter relevant to subject specialisations.

32 credits are assigned to this area. Key themes include for example:

- Education Studies in TVET and its Foundations; and
- Being a reflective practitioner

3.2 *Pedagogical learning*, which include general pedagogical knowledge in terms of the principles, practices, methods of teaching and assessment, inclusive education and an understanding of the barriers to learning; and, specialised pedagogical content knowledge in respect of the concepts, methods, rules and practices of a subject specialisation.

48 credits are assigned to this area. Key learning outcomes encompass:

- Pedagogy; and
- Specialised pedagogical content knowledge in relation to subject matter that relates to materials, people or symbols.

3.3 *Practical learning and/or work-integrated learning*, which involves learning in, and from, practice. Learning to teach is central to practical learning; and, knowledgeability of the skills, techniques and practices as they are applied in business and industry in a specialised subject field makes up the remainder of practical learning.

32 credits are assigned to this area. Learning involves inter alia:

- Learning to teach, learning from work:
 - Teaching practice, including classroom teaching, workshop teaching, laboratory teaching; and
 - Workplace practice, including updating and upgrading TVET educators' knowledge of the field, and preparing students for the workplace.

3.4 *Situational learning*, which refers to the varied contexts and environments, including policy, political, organisational and economic environments that will influence teaching and learning in the TVET context. Challenges such as HIV and AIDS, unemployment, poverty, the economy, the effects of apartheid, diversity of the student body, including gender issues, inclusivity and environmental sustainability will be the main topics of this area.

8 credits are assigned to this area.

- The TVET Context

3.5 *Fundamental learning*, which refers to learning to converse in an official African language, the ability to use information and communication technologies (ICTs) and academic literacies (including language and numerical literacies) and basic life skills.

The qualification does not provide minimum credits for Fundamental Learning, thus additional credits (over and above the minimum 120 credits) will be assigned if educators are not yet competent in these areas. These credits include outcomes in respect of:

- Foundation Studies (for students who lack these skills)
 - Language of learning and teaching (LOLT);
 - Conversational language (African language);
 - Second additional language or SA sign language as LOLT;
 - Information and Communication Technology

4. Entry Requirements

Subject to institutional rules and regulations, the minimum admission requirement is an appropriate 360-credit qualification at exit level 6 of the National Qualifications Framework (NQF), e.g. undergraduate diploma (including college Diploma⁶); or Level 7 bachelor degree, namely one that includes adequate disciplinary learning in cognate academic fields at the exit level of the prior qualification. The prior qualification is linked to teaching specialisation relevant to the TVET context. Where disciplinary subject knowledge is insufficient, additional learning courses may be required before the qualification can be awarded.

4.1 Target group

The target group for this qualification is educators teaching in TVET or other vocational colleges such as educators teaching at non-DHET public colleges, for example agricultural, defence, police, forestry and other colleges associated with particular government departments; provincial and municipal colleges; and private colleges and training centres.

⁶ Also known as the NATED Diploma

The qualification is also appropriate preparation for university lecturers in a variety of fields; and technology and vocational teachers to be deployed in the reintroduced DBE technical and vocational streams in general schooling.

4.2 DHET requirements

The Adv Dip (TVT) will provide entry into the teaching profession as a professional teacher in accordance with the DHET norms and standards for employment as an educator in the sector.

5. Level Descriptors, Exit Level Outcomes and Associated Assessment Criteria

Below, the exit level outcomes of the Adv Dip (TVT) have been mapped against the Level Descriptors for NQF level 7 (a – j). This is followed by a list of exit level outcomes (1 – 7) and their associated assessment criteria.

Table 1: Exit Level Outcomes mapped against Level Descriptors (NQF Level 7)

	Level Descriptors for National Qualifications Framework Level 7	No	Exit Level Outcomes
a	Scope of knowledge , in respect of which a learner is able to demonstrate integrated knowledge of the central areas of one or more fields, disciplines or practices, including an understanding of and the ability to apply and evaluate the key terms, concepts, facts, principles, rules and theories of that field, discipline or practice; and detailed knowledge of an area or areas of specialisation and how that knowledge relates to other fields, disciplines or practices.	1.1 2.1 3.1 4.1 5.1 6.1	Demonstrate an understanding of the philosophy, psychology, politics, economics, sociology and history of TVET; Demonstrate an understanding of the principles, practices and methods of general teaching practice; Demonstrate an understanding of concepts, methods, rules and practices of a TVET subject or field in order to create appropriate learning opportunities for students; Demonstrate an understanding of teaching practices across a variety of technical and vocational education and training contexts, including classroom and workshop/laboratory practice; and in authentic workplaces and simulated environments; Demonstrate knowledge of the current application and relevance of specialised subject fields in associated workplaces; Demonstrate an understanding of relevant policy, political and organisational context important for the growth of technical and vocational education and training in South Africa
b	Knowledge literacy , in respect of which a learner is able to demonstrate an understanding of knowledge as contested and the ability to evaluate types of knowledge and explanations typical within the area of study or practice.	2.2 3.1 6.2	Demonstrate an understanding of students, vocational education and training, learning, curriculum and general instructional and assessment strategies; Demonstrate an understanding of concepts, methods, rules and practices of a TVET subject or field in order to create appropriate learning opportunities for students; Demonstrate an understanding of the diverse challenges faced by technical and vocational education and training students
c	Method and procedure , in respect of which a learner is able to demonstrate an understanding of a range of methods of enquiry in a field, discipline or practice, and their suitability to specific investigations; and the ability to select and apply a range of methods to resolve problems or introduce change within the practice.	2.1 3.1 3.2 5.2	Demonstrate an understanding of the principles, practices and methods of general teaching practice; Demonstrate an understanding of concepts, methods, rules and practices of a TVET subject or field in order to create appropriate learning opportunities for students; Apply appropriate assessment methods for the TVET subject or field to ensure progress in learning Reflect on the workplace knowledge and skills associated with the subject field or area to enhance teaching and learning

Table 1: Exit Level Outcomes mapped against Level Descriptors (NQF Level 7) (continued)

	Level Descriptors for National Qualifications Framework Level 7	No	Exit Level Outcomes
d	Problem-solving , in respect of which a learner is able to demonstrate the ability to identify, analyse, evaluate, critically reflect on and address complex problems, applying evidence-based solutions and theory-driven arguments.	1.3 4.1 5.2	Reflect on own practice to support professional development; Demonstrate an understanding of teaching practices across a variety of technical and vocational education and training contexts, including classroom and workshop/laboratory practice; and in authentic workplaces and simulated environments; Reflect on the workplace knowledge and skills associated with the subject field or area to enhance teaching and learning
e	Ethics and professional practice , in respect of which a learner is able to demonstrate the ability to take decisions and act ethically and professionally, and the ability to justify those decisions and actions drawing on appropriate ethical values and approaches within a supported environment.	1.2 6.3	Demonstrate respect for professional ethics and issues related to knowledge of, and relationships between self and others in the life of a technical and vocational education and training educator; Engage with professional peers in a community of practice to enhance the development of the profession and professional identities
f	Accessing, processing and managing information , in respect of which a learner is able to demonstrate the ability to develop appropriate processes of information gathering for a given context or use; and the ability to independently validate the sources of information and evaluate and manage the information.	4.1 7.3	Demonstrate an understanding of teaching practices across a variety of technical and vocational education and training contexts, including classroom and workshop/laboratory practice; and in authentic workplaces and simulated environments; Demonstrate the ability to access and integrate ICT appropriately for own and student development
g	Producing and communicating information , in respect of which a learner is able to demonstrate the ability to develop and communicate his or her ideas or opinions in well-formed arguments, using appropriate academic, professional or occupational discourse.	7.1 7.2	Demonstrate academic literacies as appropriate to the level of the qualification (language and numerical literacies); Demonstrate the ability to hold a basic conversation in at least one official African language
h	Context and systems , in respect of which a learner is able to demonstrate the ability to manage processes in unfamiliar and variable contexts, recognising that problem-solving is context and system bound, and does not occur in isolation.	3.3 3.4 3.5 5.1 6.1	Develop an understanding of possible barriers to learning experienced by students; Apply the technical and workplace knowledge and skills associated with the subject field or area to enhance teaching and learning; Prepare students for learning and work in real-life workplace environments; Demonstrate knowledge of the current application and relevance of specialised subject fields in associated workplaces; Demonstrate an understanding of relevant policy, political and organisational context important for the growth of technical and vocational education and training in South Africa
i	Management of learning , in respect of which a learner is able to demonstrate the ability to identify, evaluate and address his or her learning needs in a self-directed manner, and to facilitate collaborative learning processes.	1.3 4.2 6.3 7.3	Reflect on own practice to support professional development; Manage classrooms/workshops/ laboratories/simulated work environments; Engage with professional peers in a community of practice to enhance the development of the profession and professional identities; Demonstrate the ability to access and integrate ICT appropriately for own and student development

Table 1: Exit Level Outcomes mapped against Level Descriptors (NQF Level 7) (continued)

	Level Descriptors for National Qualifications Framework Level 7	No	Exit Level Outcomes
j	Accountability , in respect of which a learner is able to demonstrate the ability to take full responsibility for his or her work, decision-making and use of resources, and limited accountability for the decisions and actions of others in varied or ill-defined contexts.	1.2	Demonstrate respect for professional ethics and issues related to knowledge of, and relationships between self and others in the life of a technical and vocational education and training educator;
		1.3	Reflect on own practice to support professional development
		2.3	Demonstrate the ability to work in teams, organisations and groups
		6.3	Engage with professional peers in a community of practice to enhance the development of the profession and professional identities

The table below (Table 2), maps Exit Level Outcomes with their Associated Assessment Criteria

Table 2: Exit Level Outcomes and Associated Assessment Criteria

	Exit Level Outcome	Assessment criteria	Credits
<i>Disciplinary learning</i>			
1	TVET studies and its foundations	<i>Persons credited with this outcome are able to...</i>	32
1.1	Demonstrate an understanding of the philosophy, psychology, politics, economics, sociology and history of TVET	<ul style="list-style-type: none"> i. Discuss, debate, critically assess and reflect on the principles of the philosophy of TVET; ii. Engage critically with discourses, concepts and theories relevant to TVET in a post-school context; iii. Apply sociological and psychological principles and practice in the TVET context; iv. Critically interact with, and analyse various theoretical positions in respect of the history, politics and economics as it relates to TVET 	
1.2	Demonstrate respect for professional ethics and issues related to knowledge of, and relationships between self and others in the life of a technical and vocational education and training educator	<ul style="list-style-type: none"> i. Reflect a critical, committed and ethical attitude; ii. Foster a sense of respect and responsibility towards others; iii. Act in ways that enhance the status of professional educators and ensure an accountable culture of teaching and learning iv. Consider issues related to sustainable development, the environment and the green economy 	
1.3	Reflect on own practice to support professional development	<ul style="list-style-type: none"> i. Apply appropriate research strategies to enhance teaching, learning and professional practice 	
	Exit Level Outcome	Assessment criteria	Credits
<i>Pedagogical learning</i>			
2	General pedagogy	<i>Persons credited with this outcome are able to...</i>	48
2.1	Demonstrate an understanding of the principles, practices and methods of general teaching practice	<ul style="list-style-type: none"> i. Engage with prevailing practices and methods of teaching; ii. Select and apply a variety of teaching practices in diverse settings; iii. Utilise blended learning approaches by integrating technology in teaching and learning as appropriate 	

Table 2: Exit Level Outcomes and Associated Assessment Criteria (continued)

	Exit Level Outcome	Assessment criteria	Credits
<i>Pedagogical learning</i>			
2	General pedagogy	Persons credited with this outcome are able to...	48
2.2	Demonstrate an understanding of students, vocational education and training, learning, curriculum and general instructional and assessment strategies	<ul style="list-style-type: none"> i. Adjust teaching and learning practices to the context of technical and vocational education and training students; ii. Interpret and enact curricular knowledge and practice in terms a broader understanding of relevant fields of knowledge; iii. Plan lessons and other learning experiences, including preparing students for workplace learning, by selecting appropriate teaching and learning strategies; iv. Design and apply appropriate assessment strategies 	
2.3	Demonstrate the ability to work in teams, organisations and groups	<ul style="list-style-type: none"> i. Model working in teams to the benefit of all participants; ii. Prepare students to engage with members of teams, organisations or groups 	
3	Specialised pedagogy		
3.1	Demonstrate an understanding of concepts, methods, rules and practices of a TVET subject or field in order to create appropriate learning opportunities for students	<ul style="list-style-type: none"> i. Apply concepts, methods, rules and practices in relevant fields of knowledge, which underpin the subject/learning fields of specialisation; ii. Use the characteristic language, terminology and concepts of own subject/s or learning fields appropriately; iii. Plan lessons and other learning experiences, including preparing students for workplace learning, by selecting appropriate teaching and learning strategies; iv. Adjust teaching and learning strategies to accommodate cultural, gender, ethnic, language and other differences among students in a range of contexts; v. Utilise blended learning approaches by integrating technology in teaching and learning as appropriate 	
3.2	Apply appropriate assessment methods for the TVET subject or field to ensure progress in learning	<ul style="list-style-type: none"> i. Select, adapt and/or design assessment tasks and strategies appropriate to the specialisation and a range of learning contexts; ii. Use a range of assessment strategies to accommodate differences in learning style, pace and context; iii. Use assessment feedback to enhance teaching and learning 	
3.3	Develop an understanding of possible barriers to learning experienced by students	<ul style="list-style-type: none"> i. Use inclusive education strategies and student support to overcome barriers to learning; ii. Apply teaching strategies to match the profile of the students; iii. Create and maintain learning environments which are safe and conducive to learning 	
3.4	Apply the technical and workplace knowledge and skills associated with the subject field or area to enhance teaching and learning	<ul style="list-style-type: none"> i. Engage with the world of work as related to a field of learning in relation to how students learn in, for and through work; ii. Incorporate relevant workplace knowledge and skills into teaching and learning; iii. Utilise blended learning approaches by integrating technology in teaching and learning as appropriate 	
3.5	Prepare students for learning and work in real-life workplace environments	<ul style="list-style-type: none"> i. Equip students for entry into workplace learning and participation in the world of work 	

Table 2: Exit Level Outcomes and Associated Assessment Criteria (continued)

	Exit Level Outcome	Assessment criteria	Credits
<i>Practical and/or work-integrated learning</i>			
4	Learning to teach	Persons credited with this outcome are able to...	32
4.1	Demonstrate an understanding of teaching practices across a variety of technical and vocational education and training contexts, including classroom and workshop/laboratory practice; and in authentic workplaces and simulated environments	<ul style="list-style-type: none"> ii. Apply teaching principles across a variety of contexts, including classrooms, workshops, laboratories and simulated environments; iii. Develop appropriate lesson plans, methods and media to enhance learning; iv. Design and conduct assessment v. Prepare and teach lessons that link the subject taught to current industry application, practices and technology through incorporating relevant industry examples and knowledge and skills 	
4.2	Manage classrooms/workshops/laboratories/simulated work environments	<ul style="list-style-type: none"> i. Apply appropriate management and administration procedures in respect of classrooms, workshops, laboratories and simulated work environments; ii. Use appropriate discipline and control of learning spaces 	
	Exit Level Outcome	Assessment criteria	
5	Learning from work	Persons credited with this outcome are able to...	
5.1	Demonstrate knowledge of the current application and relevance of specialised subject fields in associated workplaces	<ul style="list-style-type: none"> i. Show knowledge of current application of the subject fields' in workplaces; ii. Identify organisational and cultural aspects as they relate to particular workplaces, including employer expectations of employees in the field 	
5.2	Reflect on the workplace knowledge and skills associated with the subject field or area to enhance teaching and learning	<ul style="list-style-type: none"> i. Analyse and compare the curriculum with prevailing practices in the workplace to understand the implications for teaching and learning; ii. Incorporate such practices in teaching and learning 	
5.3	Reflect critically on experiences during industry-based exposure depicting lessons learnt with regards to own subject specialisation and the subject's teaching	<ul style="list-style-type: none"> i. Report on lessons learnt and their applicability to teaching the subject; ii. Apply work-based learning experiences in the preparation and teaching of lessons 	
	Exit Level Outcome	Assessment criteria	Credits
<i>Situational learning</i>			
6	The TVET context	Persons credited with this outcome are able to...	8
6.1	Demonstrate an understanding of relevant policy, political and organisational context important for the growth of technical and vocational education and training in South Africa	<ul style="list-style-type: none"> i. Engage critically with education and training and economic policies, procedures and systems impacting on institutions and classrooms, and on education and training and the economy 	
6.2	Demonstrate an understanding of the diverse challenges faced by technical and vocational education and training students	<ul style="list-style-type: none"> ii. Apply health and safety measures appropriate to classrooms, workshops, laboratories and simulated workplaces; iii. Promote healthy life choices and lifestyles in respect of HIV/AIDS; iv. Promote active citizenship and responsible participation in the broader society 	
6.3	Engage with professional peers in a community of practice to enhance the development of the profession and professional identities	<ul style="list-style-type: none"> i. Demonstrate the ability to work in teams, groups and organisations to the benefit of the TVET professions and professionals 	

Table 2: Exit Level Outcomes and Associated Assessment Criteria (continued)

	Exit Level Outcome	Assessment criteria	Credits
<i>Fundamental learning</i>			
7	Fundamental studies	Persons credited with this outcome are able to...	0 (according to institutional policy)
7.1	Demonstrate academic literacies as appropriate to the level of the qualification (language and numerical literacies)	ii. Use the main language of instruction to explain, describe, discuss and relate key concepts in area of specialisation; iii. Convey the content of own fields of specialisation in written, graphic and other forms which are appropriate to the developmental level/s and language ability of the students; iv. Interpret written and graphic materials relating to own fields of specialisation; v. Apply numerical and elementary statistical knowledge to educational issues, cross-curricular activities, and own learning	
7.2	Demonstrate the ability to hold a basic conversation in at least one official African language	i. Use basic social conversation to engage with students in at least one African language	
7.3	Demonstrate the ability to integrate ICT appropriately for own and student development	ii. Use information and communications technology to further own learning and facilitate the learning of others	

The next level of detail involves the subjects/modules that will make up the qualification. In accordance with institutional capacity and resources, the following Classification of Educational Subject Matter (CESM) categories are envisaged:

5.1 Subjects/modules for the Adv Dip (TVT)

Table 3: CESM Categories

NAME OF SUBJECT/COURSE	THIRD ORDER CESM	SAQA CREDIT	HEMIS CREDIT	NQF LEVEL	HEMIS LEVEL	MAJOR SUBJECT Y/N	CREDIT FOR EXPERIENTIAL TRAINING
Education Studies	70107	24	0.19	7	43	Y	
Management within Technical and Vocational Education and Training	71108	16	0.12	7	43	Y	
Technical and Vocational Education Studies	71411	34	0.27	7	43	Y	

Table 3: CESM Categories (continued)

NAME OF SUBJECT/COURSE	THIRD ORDER CESM	SAQA CREDIT	HEMIS CREDIT	NQF LEVEL	HEMIS LEVEL	MAJOR SUBJECT Y/N	CREDIT FOR EXPERIENTIAL TRAINING
Teaching Practice	70899	24	0.19	7	43	Y	
Lecturer Industry Experience	70899	8	0.06	7	43	Y	
Curriculum Studies: Elective A (CHOOSE ONE)		7	0.060	7	43	N	
Curriculum Studies: Business Studies	70899						
Curriculum Studies: Accounting	70899						
Curriculum Studies: Art, Design and Decor	70801						
Curriculum Studies: Civil Engineering and Building Construction	70802						
Curriculum Studies: Clothing and Textiles	70803						
Curriculum Studies: Cosmetology	70804						
Curriculum Studies: Drawing Office Practice	70805						
Curriculum Studies: Education and Development	70806						
Curriculum Studies: Electrical Infrastructure Construction	70807						
Curriculum Studies: Engineering and Related Design	70808						
Curriculum Studies: Finance, Economics and Accounting	70809						
Curriculum Studies: Hospitality	70810						
Curriculum Studies: Information Technology and Communication Science	70811						
Curriculum Studies: Languages	70812						
Curriculum Studies: Life Orientation	70813						

Table 3: CESM Categories (continued)

NAME OF SUBJECT/COURSE	THIRD ORDER CESM	SAQA CREDIT	HEMIS CREDIT	NQF LEVEL	HEMIS LEVEL	MAJOR SUBJECT Y/N	CREDIT FOR EXPERIENTIAL TRAINING
Curriculum Studies: Management	70814						
Curriculum Studies: Marketing	70815						
Curriculum Studies: Mathematics and Mathematical Literacy	70816						
Curriculum Studies: Mechatronics	70817						
Curriculum Studies: Office Administration	70818						
Curriculum Studies: Physical Sciences	70819						
Curriculum Studies: Primary Agriculture	70820						
Curriculum Studies: Primary Health	70821						
Curriculum Studies: Process Instrumentation	70822						
Curriculum Studies: Process Plant Operations	70823						
Curriculum Studies: Public Relations	70824						
Curriculum Studies: Safety in Society	70825						
Curriculum Studies: Tourism	70826						
Curriculum Studies: Transport and Logistics	70827						

Table 3: CESM Categories (continued)

NAME OF SUBJECT/COURSE	THIRD ORDER CESM	SAQA CREDIT	HEMIS CREDIT	NQF LEVEL	HEMIS LEVEL	MAJOR SUBJECT Y/N	CREDIT FOR EXPERIENTIAL TRAINING
Curriculum Studies: Elective B (COMPULSORY)		7	0.06	7	43	Y	
Teaching, Learning and Researching in Technical and Vocational Education and Training	70899						
Language of Teaching and Learning (LOLT)	714401	3	0.02	5	41		
Language of Conversational Competency (LoCC) (Xhosa)	714401	2	0.02	5	41		
ICT skills	714401	1	0.01	5	41		
Total credits		126	1.00				

5.2 Vocational pedagogy

Many contemporary commentators, interested in TVET as an education sector, have been noting the need for vocational education pedagogy, but without saying what vocational pedagogies are. It is much easier it seems, to note the deficiencies in TVET educators, or to attempt to bring business and industry needs on board in order to improve TVET's responsiveness to the world of work. Lucas, Spencer and Claxton, (2012) say this is because 'pedagogy...is undeniably complex, leading some agencies to focus on controllable factors such as qualifications, funding or the nebulous notion of "teacher quality"' (p. 14). However, a more relevant discussion emerging now is how to prepare TVET educators for their sector without immediately assuming the educators are 'deficient' in some or other way.

While this document does not claim to have undertaken a full review of the relevant literature, it is already possible to consider what the needs of the TVET educators are, and to link these with the elements that must inform the development of vocational pedagogies for this qualification.

Some of the 'golden threads' that run through the proposed curriculum, which differentiates subject content for the Adv Dip (TVT) from other professional teaching qualifications, relates to what it means to be a TVET educator: -

1. The TVET educator has a dual identity: that of professional educator, as well as that of a business or industry professional.
2. The curricula in the TVET sector integrate theory and practice and teaching therefore mirrors a curriculum that 'faces both ways' (Barnett, 2006) – the educator prepares students in terms of general, as well as workplace-based competencies.
3. The TVET educator fully integrates the teaching of the 'language' of the subject or field in all the component parts of the programmes undertaken by the students.
4. Vocational education and training is often taught through practical problem-solving in terms of real-world situations – which requires a blend of teaching methods involving hands-on, practical, experiential and application of theory strategies (Lucas, Spencer and Claxton, 2012).
5. TVET educators understand that 'work is the curriculum' (Boud, *et al*, 2001) and that they therefore prepare their students for work by engaging with business or industry to maintain their own professional knowledge of the field to offer more responsive programmes.
6. Understanding the TVET context is central to success in teaching, including understanding the student context. Learner-centredness is thus essential for meaningful learning, because TVET students tend to be 'at different stages of physical, mental and social development from school students' (Lucas, *et al*, 2012).
7. Vocational pedagogy focuses on 'striking a balance between the conceptual and practical'; which involves 'creativity, critical thinking, communication and collaboration' with the purpose to stimulate 'performance-related' and ethical character traits in students to ensure that they become 'active and responsible citizens' (Lucas, *et al*, 2012). In this regard, Gamble (2009: 3) notes that vocational pedagogy needs:

...a mix of different forms of knowledge, drawn from both non-empirical (conceptual) and empirical (situated in everyday life) domains, for the curriculum to enable both knowledge progression and occupational progression.

8. In this regard, no discussion of a vocational pedagogy would be complete unless reference is made to 'tacit knowledge' – namely the 'implicit knowledge that is not clearly expressed' in vocational knowledge, but which is central to pedagogical transmission practices in a vocational curriculum (Gamble, 2004: 1, 2). Crucially, for vocational pedagogical approaches, 'tacit knowledge' is a 'social practice-driven innovation' (Gamble, 2004: 3), where 'the tacit knowledge accrued by the long practice of craft and instrumental practice, of "doing the job", in itself can come to suggest new ways of doing things (Muller, 2000: 31 in Gamble, 2004: 3). No professional teaching curriculum, intending to enact a vocational curriculum, including its concomitant workplace-learning practices and the relationships formed through workplace-practice, can therefore ignore the tacit dimension of learning through work.

However, these differentiating characteristics of TVET educators are framed by our understanding of technical and vocational education and training. In the introduction to this paper, a definition for TVET was provided, in an attempt to come to a common usage of the term. In this regard, Gamble (2012) reminds us 'that neither craft nor trade is a homogenous concept' (p. 9) and that these concepts are understood differently depending on the system within which one works. Furthermore, TVET has to do with knowledge production in the workplace – an area which is notoriously under-researched, and consequently, poorly codified. It appears therefore that this form of education and training is much more than just those teaching methods that utilise various forms of practice-based learning. In addition, 'work' (and workplaces) is not a static activity: - 'as work changes, so does the shape and form of its supporting pedagogy' (Gamble, 2012: 11). Vocational pedagogy therefore needs to be cognisant of the nature of work and how people learn in, from and through work.

Furthermore, 'work', as a concept needs some clarification: in modern society, 'work' is most often equated to 'employment'. However, as with many other concepts, our understanding of 'work' is constantly changing. Kelly (2000: 9), for example suggest that at least five conceptions of work have emerged over the ages – (1) work can be seen to have an instrumental/utilitarian purpose, namely a means to survive or subsist, and as a factor of production; (2) it may have a psychological incentive – as an expression of creativity and personal affirmation; (3) it can be considered a 'calling', linked to spiritual ideals; (4) it is also seen as a social obligation to maintain an identity, solidarity and cohesion; and, (5) a conventional mechanism of distribution. In the 21st century, and against the background of jobless-growth, however, new conceptions of work are evolving. Taylor, (2004: 29) points out that:

Traditional social theory has conceptualised work in terms of a dichotomy of public paid employment and private unpaid labour that oversimplifies the complexity of traditional and contemporary work practices...

In the context of this curriculum framework, we wish to, in keeping with current thinking and within the context of the South African society, acknowledge that 'work' firstly, does not necessarily equate to

‘employment’; and secondly, that other forms of work such as volunteering, etc. are also considered as part of our understanding of work.

Therefore, while it is easy to acknowledge that in TVET a different pedagogical approach is needed, the consequence is that TVET educators must draw on a wide range of approaches, as well as being ‘highly adaptable in order to keep pace with the changing nature of their subject matter, and importantly, the needs of their learners’ (Unwin, 2008: 508, in Rauner and Mclean, 2008) and the changing nature of work.

An area of particular difficulty is in gaining an understanding of how people learn through work, which is central to successful TVET. Workplace learning methodologies are still far from being fully understood, (or utilised, for that matter). This has been bedevilled by the different ‘traditions’ of workplace pedagogies, for example the ‘competence-based’ approach still prevalent in English-speaking countries (including South Africa), which is markedly different from the Germanic tradition of ‘Kompetenz’, or Lave and Wenger’s ‘situated learning’ (1991, in Unwin, 2008).

Lucas (2014) captures the situation as follows:

Despite many brave attempts, there is not yet an international consensus as to the essential aspects of vocational pedagogy. But what vocational pedagogy is, really matters. Thinking about pedagogy helps us to understand that vocational education is worthy of serious study. Once grasped more comprehensively, vocational pedagogy enables us to develop models and tools that can help TVET teachers more effectively to match teaching and learning methods to the needs of their students and their contexts.

Defining and developing vocational pedagogies is thus complicated in that TVET is not ‘one thing’. The sector is very diverse and sub-sectors will draw on different combinations of approaches. A helpful frame to think about these combinations is what Shulman (2005, in Lucas, 2014) called ‘signature pedagogies’, which ‘refers to types of teaching that best match the fundamental ways in which any one vocational group thinks and acts’ (Shulman, 2005 in UNESCO-UNEVOC, 2014: 9):

Signature pedagogies make a difference. They form habits of the mind, habits of the hand and habits of the heart...they prefigure the culture of professional work and provide the early socialisation into the practices and values of the field. Whether in a lecture hall or lab, in a design studio or a clinical setting, the way we teach will shape how professionals behave...

A key characteristic of such signature pedagogies as it relates to TVET, is the problem-based nature of teaching and learning, with the additional challenge of operating across two domains – work and learning – an issue which clearly differentiates it from general pedagogy (UNESCO-UNEVOC, 2014).

The primary purpose of the Adv Dip (TVT) is to develop TVET educators where educators must provide the ‘bridge’ between education and work. The qualification therefore focuses on appropriate

(‘signature’) pedagogies for vocational education and training teaching. ‘Learning to teach’ is the rationale for all the subjects/modules in the curriculum. The curriculum thus focuses on the emerging understanding of vocational pedagogy. While TVET has been around for a long time, vocational pedagogy is a ‘new’ field of practice. In this regard, Lucas (*et al*, 2012) provide a useful taxonomy for vocational pedagogies, based on the medium through which future work will be expressed, namely pedagogical approaches in relation to work with *physical materials* (e.g. bricklaying, plumbing, hairdressing); approaches for where work is with *people* (e.g. financial advice, nursing, hospitality, retail and care industries); and approaches to pedagogy where work is with *symbols* (e.g. accountancy, software development, graphic design). The skills and competencies that TVET educators will seek to inculcate in their students include (UNESCO-UNEVOC, 2014: 10 and 11):

1. Routine expertise (being skilful);
2. Resourcefulness (stopping to think to deal with non-routine);
3. Functional literacies (communication and the functional skills of literacy, numeracy and ICT);
4. Craftmanship (vocational sensibility, aspiration to do a good job, pride in a job well done);
5. Business-like attitudes (commercial or entrepreneurial – social or financial – sense);
6. Wider skills (for employability and lifelong learning).

These skills and competencies intend to encompass the notion of ‘*Beruf*’, which is usually translated as ‘occupation’, but as Rauner (2008) notes, it denotes a broader understanding than ‘occupation’ (p. 237):

Even though the term ‘occupation’ is normally used to translate the German term ‘*Beruf*’, it does not capture its real meaning. Whereas the word ‘occupation’ connotes a more utilitarian perspective on work – an occupation is a job one does to earn a living – the term ‘*Beruf*’ has the meaning of committing oneself to the mission of a group (community) to carry out special tasks in a societal and political context... one has a ‘calling’ to carry out certain social tasks to a high standard of excellence. Thus, the English word ‘vocation’ (calling) is perhaps a more accurate literal translation of ‘*Beruf*’. The term ‘profession’ in its classical meaning of publicly declaring one’s commitment to a mission is also perhaps a better translation of ‘*Beruf*’.

This understanding of ‘occupations’ have implications for vocational pedagogy. Vocational pedagogy therefore has to consider more than the technical tools for teaching. Wheelahan (2005) agrees and notes ‘a vocation links the person to the broader notion of an occupation in society, the values that underpin it and the knowledge and skills that are needed to engage in problem-solving’. Therefore, if the central differentiating element of vocational pedagogy is the linkages to, and preparation for the changing world of work, then TVET teaching needs to incorporate a focus on the following elements as part of an understanding of ‘*Beruf*’ when learning for and through work (based on Evans, (*et al*, 2011:155), namely:

- Enculturation – ‘learning how we do things here’;
- Building competence – ‘learning to achieve the occupational standard’;
- Improving practice, innovation and renewal – ‘learning to contribute to the organisation’;
- Fitting in – ‘learning about the ethics, professional practice and social context of workplaces’;

- Understanding the field – ‘learning about the professional and/or occupational field’ for career development;
- Shaping an identity – ‘learning about the identity of the vocation/profession’, and coming to identify with it.

Thus, TVET educators need to exemplify and model these characteristics which need a constant awareness of their dual roles in teaching TVET students. Embedded in these characteristics is the ability by TVET educators to foreground different forms of knowledge which would include ‘skills’ and ‘know-how’, each with their own ‘logics’. Evans (*et al*, 2011: 156) maintain that these processes are essentially processes of re-contextualisation of knowledge, which is ‘a multi-faceted, pedagogic practice’:

Understanding how different forms of knowledge are re-contextualised as people move between sites of learning and practice in universities, colleges and workplaces provides new ways into longstanding and seemingly intractable problems of relation between ‘theory’ and ‘practice’.

The re-contextualisation of knowledge is therefore central to an emerging pedagogy in relation to curricula that ‘faces both ways’. Re-contextualisation will impact programme design through ‘*content re-contextualisation*’ – the process whereby knowledge is codified and recast for the demands of the professional and vocational practice. *Pedagogic re-contextualisation* is achieved by a ‘combination of disciplinary knowledge with practice-based knowledge and local company knowledge’, (which is also the rationale for practice- and work-based learning of vocational educators and trainers). *Workplace re-contextualisation* then entails ‘putting knowledge to work in the workplace environment’, whereby new knowledge is generated. Finally, *learner/employee re-contextualisation* refers to the development of ‘a professional and/or vocational identity’, which supports the choice of the student’s chosen occupation. Evans (*et al*, 2011: 157) define ‘re-contextualisation’ as follows (definition shortened):

Re-contextualisation [is] putting different kinds of knowledge to work in different ways according to the context, [which] allows us to identify how knowledge changes as it is used differently in different social practices and contexts; [and helps to] identify how new knowledge changes people, social practices and contexts.

Consequently, ‘learning that is entirely based in the workplace or in education institution is inadequate – both are needed, and students need to be able to make connections between them’ (Wheelahan, 2005). Therefore Young argues (in Wheelahan, 2005) that vocational pedagogy must be based on a ‘relational model in which the *connections...matter*’ that will result in ‘an orientation to their vocation, to the knowledge, skills and practices of that vocation, and provide a basis for an emergent identity for the student within their vocation’.

With these few thoughts in mind, and drawing on the collective learning from the institutions contributing to this curriculum framework, a ‘signature module’ is suggested. The ‘signature module’ intends to deal with the key aspects as mentioned above. We have called it ‘Being a TVET Educator’. The following questions guided the module outcomes as outlined in Table 4:

What does vocational education mean?

What is the philosophy of TVET?

What does it mean to be a TVET educator?

- Dual/multiple identities
- Integration of theory and practice
- The language of the vocation
- Engagement with work
- Learner-centredness
- Balance between conceptual and practical
- Bridge between learning and work

What differentiates a TVET educator?

- Learning to teach
- Learning from work

What are the professional ethics to be displayed?

- SACE or something similar
- Codes of conduct, e.g. teaching/lecturing and professional

What does it mean to be a professional?

- Being in the profession
- Being a reflective practitioner

What is the context of technical and vocational education and training?

However, having made a start on a set of meaningful outcomes for a 'signature module', this is clearly an area in need of in-depth research. The collaboration partners commit to undertake further work in this regard.

Table 4: The ‘Signature Module’ outcomes: Being a TVET Educator

	Exit Level Outcome	Assessment criteria	
Being a TVET Educator:			
1	TVET studies and its foundations	Persons credited with this outcome are able to...	
1.1	Demonstrate an understanding of the philosophy, psychology, politics, economics, sociology and history of TVET	<ul style="list-style-type: none"> i. Discuss, debate, critically assess and reflect on the principles of the philosophy of TVET; ii. Engage critically with discourses, concepts and theories relevant to TVET in a post-school context; iii. Apply sociological and psychological principles and practice in the TVET context; iv. Critically interact with, and analyse various theoretical positions in respect of the history, politics and economics as it relates to TVET 	Engage critically with discourses, concepts and theories relevant to TVET in a post-school context, e.g.: <ul style="list-style-type: none"> • Sociology of work • Political economy of work • Knowledge differentiation • Theory and practice and the integration thereof • Disparities of esteem – schooling and colleges
1.2	Demonstrate respect for professional ethics and issues related to knowledge of, and relationships between self and others in the life of a technical and vocational education and training educator	<ul style="list-style-type: none"> i. Reflect a critical, committed and ethical attitude; ii. Foster a sense of respect and responsibility towards others; iii. Act in ways that enhance the status of professional educators and ensure an accountable culture of teaching and learning 	<ul style="list-style-type: none"> • Education for work vs general education • Signature pedagogies Apply sociological and psychological principles and practice in the TVET context, e.g.: <ul style="list-style-type: none"> • Socio-economic context • Second-chance learning opportunities/school drop-outs
1.3	Reflect on own practice to support professional development	<ul style="list-style-type: none"> i. Apply appropriate research strategies to enhance teaching, learning and professional practice 	<ul style="list-style-type: none"> • Learning theories • Physical spaces (culture and infrastructure) • Foster a sense of respect and responsibility towards self and others • Understanding diversity • Inclusive education Critically interact with, and analyse various theoretical positions in respect of the history, politics and economics as it relates to TVET, e.g.: <ul style="list-style-type: none"> • Relationship between TVET and the economy • Challenging the notion of one relationship between curriculum and the needs of the workplace • Apply appropriate research strategies to enhance teaching, learning and professional practice

Table 4: The ‘Signature Module’ outcomes: Being a TVET Educator (continued)

	Exit Level Outcome	Assessment criteria	
<i>Practical and/or work-integrated learning</i>			
4	Learning to teach	<i>Persons credited with this outcome are able to...</i>	
4.1	Demonstrate an understanding of teaching practices across a variety of technical and vocational education and training contexts, including classroom and workshop/laboratory practice; and in authentic workplaces and simulated environments	<ul style="list-style-type: none"> vi. Apply teaching principles across a variety of contexts, including classrooms, workshops, laboratories and simulated environments; vii. Develop appropriate lesson plans, methods and media to enhance learning; viii. Design and conduct assessment ix. Prepare and teach lessons that link the subject taught to current industry application, practices and technology through incorporating relevant industry examples and knowledge and skills 	<p>Apply teaching principles across a variety of contexts, including classrooms, workshops, laboratories and simulated environments, e.g.</p> <ul style="list-style-type: none"> • Adjusting practices in context <p>Prepare and teach lessons that link the subject taught to current industry application, practices and technology through incorporating relevant industry examples and knowledge and skills, e.g.</p> <ul style="list-style-type: none"> • Bringing relevant workplace-based practices to bear in teaching
4.2	Manage classrooms/workshops/laboratories/simulated work environments	<ul style="list-style-type: none"> iii. Apply appropriate management and administration procedures in respect of classrooms, workshops, laboratories and simulated work environments; iv. Use appropriate discipline and control of learning spaces 	
	Exit Level Outcome	Assessment criteria	
5	Learning from work	<i>Persons credited with this outcome are able to...</i>	
5.1	Demonstrate knowledge of the current application and relevance of specialised subject fields in associated workplaces	<ul style="list-style-type: none"> iii. Show knowledge of current application of the subject fields’ in workplaces; iv. Identify organisational and cultural aspects as they relate to particular workplaces, including employer expectations of employees in the field 	<p>Show knowledge of current application of the subject fields’ in workplaces, e.g.</p> <ul style="list-style-type: none"> • An understanding of the recontextualisation of knowledge in workplaces; • The ability to transmit explicit and implicit knowledge (tacit knowledge) through a social engagement with work and work practices
5.2	Reflect on the workplace knowledge and skills associated with the subject field or area to enhance teaching and learning	<ul style="list-style-type: none"> iii. Analyse and compare the curriculum with prevailing practices in the workplace to understand the implications for teaching and learning; iv. Incorporate such practices in teaching and learning 	
5.3	Reflect critically on experiences during industry-based exposure depicting lessons learnt with regards to own subject specialisation and the subject’s teaching	<ul style="list-style-type: none"> iii. Report on lessons learnt and their applicability to teaching the subject; iv. Apply work-based learning experiences in the preparation and teaching of lessons 	

Table 4: The ‘Signature Module’ outcomes: Being a TVET Educator (continued)

<i>Being a TVET Educator (continued):</i>			
6	The TVET context	Persons credited with this outcome are able to...	
6.1	Demonstrate an understanding of relevant policy, political and organisational context important for the growth of technical and vocational education and training in South Africa	i.	Engage critically with education and training and economic policies, procedures and systems impacting on institutions and classrooms, and on education and training and the economy
6.2	Demonstrate an understanding of the diverse challenges faced by technical and vocational education and training students	i.	Apply health and safety measures appropriate to classrooms, workshops, laboratories and simulated workplace;
		ii.	Promote healthy life choices and lifestyles in respect of HIV/AIDS;
		iii.	Promote active citizenship and responsible participation in the broader society
6.3	Engage with professional peers in a community of practice to enhance the development of the profession and professional identities	i.	Demonstrate the ability to work in teams, groups and organisations to the benefit of the TVET professions and professionals

Engage critically with education and training and economic policies, procedures and systems impacting on institutions and classrooms, and on education and training and the economy, e.g.:

- Education and training policy
- Industrial policy
- Labour Relations Acts
- Work-based learning
 - Learnership and workplace-based agreements

Promote healthy life choices and lifestyles in respect of e.g.:

- HIV/AIDS
- First aid and the safety of others
- Health and Safety Act

Enhance communities of practice in occupations, vocations and professions

- Develop the profession and professional identities

5.3 Work-Integrated Learning⁷

A key element of the Adv Dip TVT is the need for Work-integrated Learning (WIL). In the *Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training* (DHET, 2013), WIL is placed within the category of ‘Practical Learning’, which encompasses (p. 10): ‘... learning to teach and learning the skills, techniques and practices – related to the subject they are teaching – that are applied in the workplace or industry’.

In terms of ‘learning to teach’, this curriculum framework addresses the need for general and specialised pedagogies relating to technical and vocational education and training through a number of outcomes geared towards developing a vocational education pedagogy (see outcomes 2, 3 and 4 and the discussion in 5.2). These discourses are translated into ‘learning in practice’, which involves (DHET, 2013: 10):

... teaching in authentic and simulated lecturing environments, [where] such practical learning is an important condition for the development of tacit knowledge, which is an essential component of learning to teach.

However, in keeping with a curriculum which ‘faces both ways’ and with TVET educators’ role as a ‘bridge’ between learning and work, there is a strong focus on learning from work: ‘therefore, exposure to and time spent in structured learning experience in workplace/industry settings are crucial components of vocational or technical subjects’. ‘WIL must [therefore] encompass learning the technical skills associated with the subject and how to teach them (DHET, 2013; 10).

The curriculum framework has made provision for this element in outcome 5 (see below, see also the Signature Module pp 25 – 27):

Table 5: Learning from Work

5	Learning from work	Persons credited with this outcome are able to...
5.1	Demonstrate knowledge of the current application and relevance of specialised subject fields in associated workplaces	<ul style="list-style-type: none"> i. Show knowledge of current application of the subject fields’ in workplaces; ii. Identify organisational and cultural aspects as they relate to particular workplaces, including employer expectations of employees in the field
5.2	Reflect on the workplace knowledge and skills associated with the subject field or area to enhance teaching and learning	<ul style="list-style-type: none"> i. Analyse and compare the curriculum with prevailing practices in the workplace to understand the implications for teaching and learning; ii. Incorporate such practices in teaching and learning
5.3	Reflect critically on experiences during industry-based exposure depicting lessons learnt with regards to own subject specialisation and the subject’s teaching	<ul style="list-style-type: none"> i. Report on lessons learnt and their applicability to teaching the subject; ii. Apply work-based learning experiences in the preparation and teaching of lessons

⁷ A draft Workplace-Based Learning policy framework, commissioned by the DHET in 2015, is currently under review and will be made available for public comment. In the WPBL policy framework, various definitions for WIL are being considered. However, this curriculum framework uses the descriptions as provided for in the *Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training* (DHET, 2013).

As in the case of vocational education pedagogies, much still must be learnt about how people ‘learn through work’, specifically, within the context of this curriculum framework. While many scholars have long supported the notion that exposure to and engagement with work enhances the learning experiences of students⁸, to ensure that the potential of workplace-based learning is realised, we should (Evans *et al*, 2011: 153):

...explore the intersection of work-based pedagogies that originate from research into how people learn in, for and through work with the further and higher education pedagogies in which the subject-dominant starting point is applied to people at work.

While teaching practice, in the general sense, is a common feature of educator development, workplace experience is not a common element of TVET educator preparation (SSACI, 2015). Internationally, TVET educators are expected to gain work experience *prior* to their training as educators, suggesting that they are assumed to already have the skills, knowledge and attributes of the technical and vocational profession that they are to teach. We know that this is not necessarily the case in the South African TVET system (see earlier discussion).

Therefore, the minimum level of workplace competence required in order to teach confidently, needs to be determined for subject field specialisations. If educators have not acquired the minimum requirements, they clearly need to undertake additional work. However, this curriculum framework has been developed on the assumption that educators do meet these requirements and that additional content knowledge will be acquired over and above the professional teaching competence.

In this regard, Schuller & Bergami (2006), quoting Gela (2004), (in SSACI, 2015) note that:

The length of placement in industry is an important consideration because “ true learning often proceeds slowly” and it takes some time to fully understand and appreciate a particular industry’s ‘culture’.

Lucas *et al* (2012), quoting Ericsson *et al* (1993) (in SSACI, 2015), agree and suggest that it takes 10 000 hours of practice to become an expert [works out to about 5 years].

Short placements, as is required for the Adv Dip TVT is thus more about application and enhancement of existing skills than development of new skills (SSACI, 2015), and to translate their exposure to their teaching.

With this in mind, this curriculum framework proposes the following key elements of WIL in relation to the pedagogic practice, which is supported by time spent in the workplace (SSACI, 2015 – presentation):

- Industry-based WIL involves **exposure** to work/workplaces through **structured learning in workplace/industry settings** (e.g. factories, worksites, offices, etc.);

⁸ See for example Evans (*et al*, 2011).

- **Real workplaces** become the primary site of learning and the **medium of work**, the primary learning strategy;
- The **overarching purpose** of industry-based WIL for educators in TVET is to **achieve currency of knowledge and skills**, i.e. update these in line with developments in their field; in order to...
- **Improve the relevance** of what they are teaching and its links to actual industry practice, technology and systems; and
- To **prepare their students** for the demands of the workplaces within which they will find themselves.

The following diagram depicts the differences in purpose for TVET educator workplace exposure and TVET students work experience (Van der Bijl, A. and Taylor, V. (forthcoming) in SSACI, 2015):

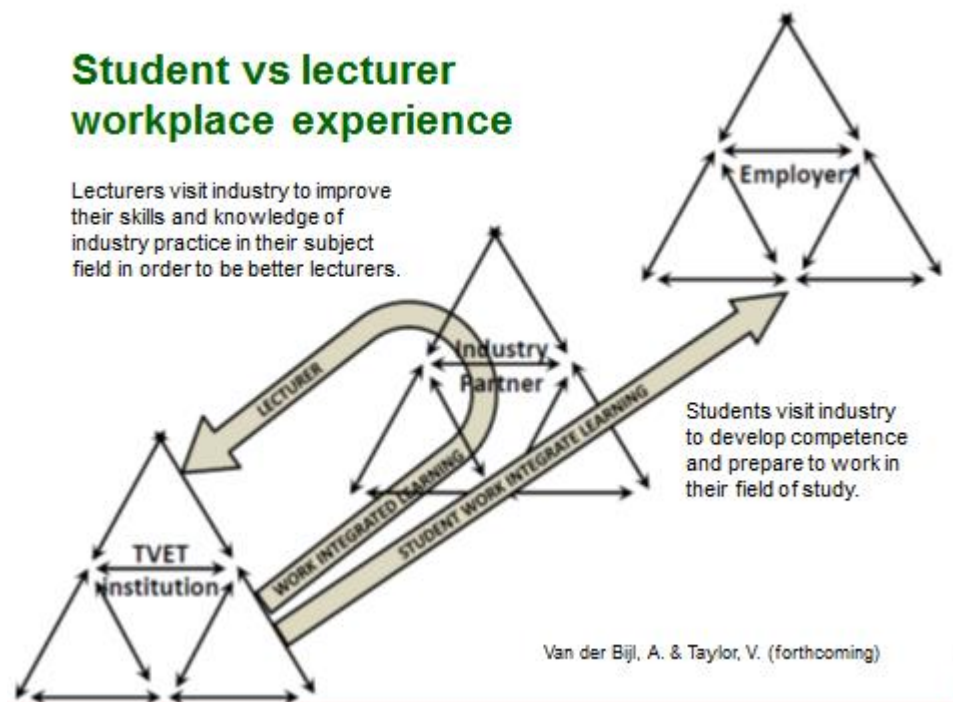


Figure 1: The difference between TVET educator work exposure and student work experience

For the purposes of the Adv Dip TVT, work exposure is a minimum requirement in preparing competent TVET educators (2 weeks; 8 credits). Such exposure should therefore ideally be followed up by cycles of Continuing Professional Development (CPD).

Nevertheless, work exposure must minimally result in (SSACI, 2015):

- The identification and critical analysis of the similarities and differences between the curriculum taught and the practices, technology and systems of workplaces visited.

- A critical reflection on and evaluation of own WIL experience in terms of its relevance to personal needs, value with regard to the development of required knowledge and skills and how it can be used in teaching.
- The ability to prepare and teach lessons that link the subject taught to current industry application, practices and technology through incorporating relevant industry examples and knowledge and skills.

6. Critical Cross-Field Outcomes

Critical cross-field outcomes are addressed as follows:

Table 6: Critical Cross-Field Outcomes mapped against the Exit Level Outcomes of the Adv Dip (TVT)

Critical cross-field outcome		Exit Level Outcomes
Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.	1.3 4.1 5.2	Reflect on own practice to support professional development; Demonstrate an understanding of teaching practices across a variety of technical and vocational education and training contexts, including classroom and workshop/laboratory practice; and in authentic workplaces and simulated environments; Reflect on the workplace knowledge and skills associated with the subject field or area to enhance teaching and learning
Work effectively with others as a member of a team, group, organisation, community.	2.1 3.1 6.3	Demonstrate an understanding of the principles, practices and methods of general teaching practice; Demonstrate an understanding of concepts, methods, rules and practices of a TVET subject or field in order to create appropriate learning opportunities for students; Engage with professional peers in a community of practice to enhance the development of the profession and professional identities
Organise and manage oneself and one's activities responsibly and effectively.	1.3 4.2	Reflect on own practice to support professional development; Manage classrooms/workshops/ laboratories/simulated work environments
Collect, analyse, organise and critically evaluate information.	4.1 5.2 7.3	Demonstrate an understanding of teaching practices across a variety of technical and vocational education and training contexts, including classroom and workshop/laboratory practice; and in authentic workplaces and simulated environments; Reflect on the workplace knowledge and skills associated with the subject field or area to enhance teaching and learning; Demonstrate the ability to integrate ICT appropriately for own and student development
Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation.	7.1 7.2	Demonstrate academic literacies as appropriate to the level of the qualification (language and numerical literacies); Demonstrate the ability to hold a basic conversation in at least one official African language

Table 6: Critical Cross-Field Outcomes mapped against the Exit Level Outcomes of the Adv Dip (TVT) (continued)

Critical cross-field outcome		Exit Level Outcomes
Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.	1.1	Demonstrate an understanding of the philosophy, psychology, politics, economics, sociology and history of TVET;
	2.1	Demonstrate an understanding of the principles, practices and methods of general teaching practice;
	2.2	Demonstrate an understanding of students, vocational education and training, learning, curriculum and general instructional and assessment strategies;
	3.1	Demonstrate an understanding of concepts, methods, rules and practices of a TVET subject or field in order to create appropriate learning opportunities for students;
	4.1	Demonstrate an understanding of teaching practices across a variety of technical and vocational education and training contexts, including classroom and workshop/laboratory practice; and in authentic workplaces and simulated environments;
	5.1	Demonstrate knowledge of the current application and relevance of specialised subject fields in associated workplaces;
	6.1	Demonstrate an understanding of relevant policy, political and organisational context important for the growth of technical and vocational education and training in South Africa;
	6.2	Demonstrate an understanding of the diverse challenges faced by technical and vocational education and training students (WIL)
Use science and technology effectively and critically, showing responsibility to the environment and health of others	6.2	Demonstrate an understanding of the diverse challenges faced by technical and vocational education and training students;
	7.3	Demonstrate the ability to integrate ICT appropriately for own and student development

7. International Comparability

Internationally, a similar qualification is offered in Scotland, known as the Teaching Qualification in Further Education (TQFE). The Teaching Qualification in Further Education (TQFE) is the core teaching qualification available to college educators in Scotland. It is also one of the three national teaching qualifications defined in Scottish legislation, the other two being the Teaching Qualification in Secondary Education (TQSE) and the Teaching Qualification in Primary Education (TQPE). As such the TQFE is subject to a full approval and accreditation exercise every six years, conducted by the Scottish Government and the General Teaching Council Scotland. Currently, the TQFE is delivered by three Teacher Education Institutes (TEIs): the University of Aberdeen, University of Dundee and University of Stirling. Their programmes are delivered at undergraduate (SCQF Level 9) and / or at postgraduate (SCQF Level 11) level. The SCQF Level 9 appears to be equivalent to the South African NQF level 7 as the exit point for under-graduate degrees. This is the same level at which the Adv Dip (TVT) is offered. All programmes are delivered to candidates who are already college educators, although Stirling additionally offers a 'pre-service' TQFE programme for full-time students, which includes teaching placements. Programmes include both academic study and practical learning, including assessed teaching practice. All the programmes also embed, throughout, the core 2006 Professional Standards for Lecturers in Scotland's Colleges. The Scottish Government expectation is that all new full-time educators should be working towards or already undertaking a TQFE, if they do not already hold an equivalent

qualification. In South Africa it is also the expectation that all eligible college educators obtain the Adv Dip (TVT). (See for example <http://www.gov.scot/Publications/2010/04/19113746/2>).

The Advanced Diploma for TVET teachers and trainers offered under the Australian Qualifications Framework (AQF) of 2013 is also comparable to the proposed Adv Dip (TVT). The details of the knowledge and skills levels for the Advanced Diploma of AQF can be found at: <http://www.aqf.edu.au/wp-content/uploads/2013/05/AQF-2nd-Edition-January-2013.pdf>.

A third comparable qualification is the Advanced Diploma in Vocational Education and Training offered by the University of Newcastle, England. (See for example <http://www.unc.ac/index/php>).

8. Integrated Assessment

Integrated assessment for the Adv Dip (TVT) may be formative and/or summative assessment, to determine the students' applied competence in relation to the core outcomes of the qualification (SAQA, 2013: 8). The assessment will model the approach taught, namely the integration of theory and practice and the relationship with, and preparation for work.

The assessment instruments used may consist of a written assessment of theory, together with a practical demonstration of competence, where a students' conceptual understanding of something is evaluated through the approach she/he takes in applying it in practice. The intention is to assess students in the modes in which they are expected to display particular competencies (SAQA, 2014: 18).

A key component to be assessed is the link between theory and practice. It is foreseen that these 'bridges' will be assessed through work-integrated learning, especially during teaching practice.

In general however, institutions will make decisions about the most appropriate forms of integrated assessment, which may make use of the following assessment instruments/approaches:

- Teaching practice in simulated and actual environments, e.g. Self-reflection in relation to teaching
- Portfolios of evidence
- Written examinations or examination equivalents
- Oral presentations
- Problem-solving assignments, e.g. Research tasks
- Case studies
- Self- and/or peer assessment

As a collective, institutions will collaborate on the development of appropriate integrated assessment instruments. The assessment will be mutually externally moderated by other partner institutions.

9. Recognition of Prior Learning

Subject to institutional rules and regulations, and with due consideration to the SAQA Recognition of Prior Learning (RPL) policy, RPL is not to be used for the purpose of alternative access to the qualification.

A maximum of 30 credits may be recognised for prior learning, utilising the following mechanisms:

- Educators who have completed the VEOP may present the 30 credits gained through the VEOP for advanced credit standing against complementary learning in the Advanced Diploma in Technical and Vocational Teaching.
- Educators/aspirant educators who have undergone appropriate, relevant workplace-based learning, either in teaching contexts or in industry contexts, may also present these for APL and, if successful, receive credit recognition for their prior learning.

In addition, and subject to institutional policies, other education and training-related qualifications may be considered for credits where those credits reflect cognate fields of learning.

Developing RPL tools for assessment is an area for further collaborative research.

10. Articulation

This qualification provides access to candidates who have completed an appropriate undergraduate diploma (360 credits) at NQF Level 6 or bachelor degree (360 credits) at NQF Level 7, namely one that includes sufficient disciplinary learning in cognate academic fields relevant to TVET teaching; and, it articulates vertically with a 120 credit NQF Level 8 Postgraduate Diploma in Technical and Vocational Education and Training and/or a 120 credit NQF Level 8 Bachelor of Education Honours degree. Horizontally, it articulates with the NQF Level 7 Advanced Diploma in Education: TVET.

11. Moderation

Internal moderation will be conducted by senior academics in the subject area; subject to institutional requirements, external moderation will be conducted by senior academics of other universities.

12. Criteria for the registration of assessors (where applicable)

Not applicable.

13. References

Barnett, W. (2006). In Hordern, J. (2014). How is vocational knowledge recontextualised? *Journal of Vocational Education and Training*. Vol. 66, No 1, 22 – 38. Routledge. Taylor and Francis Group.

Blom, R. (2011). *The Size and Shape of Private Post-School Education and Training in South Africa. A Study for the Department of Higher Education and Training*. Johannesburg: Centre for Education Policy Development.

Blom, R. (2015). *Towards a Hub for Technology Education: The Introduction of Teaching Qualifications in the Technical and Vocational Education and Training Sector as part of the Wits School of Education's Programme and Qualification Mix*. Discussion document.

Boud, D. (2001). *Knowledge at Work: Issues of Learning, in Work-based Learning. A New Higher Education?*, 2001. Boud, D., Solomon, N. (Eds). The Society for Research into Higher Education. Open University Press.

Department of Higher Education and Training, 2013. *Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training*. Government Gazette, 11 June 2013, No 36554. Pretoria: Government Printers.

Department of Higher Education and Training, 2013. *White Paper for Post-school Education and Training. Building an expanded, effective and integrated post-school system*. Government Printers: Pretoria.

Education International. (2009). *Literature Review Vocational Education and Training*. Retrieved from <http://www.ei-ie.org/>, January 2014.

Evans, K. (2011). in *The SAGE Handbook of Workplace Learning*, 2011. Malloch, M., Cairns, L., Evans, K. and O'Connor, B.N. (Eds). SAGE, London.

Gamble, J. (2004). *Tacit Knowledge in Craft Pedagogy: A Sociological Analysis*. Unpublished PhD thesis. University of Cape Town.

Gamble, J. (2009). *The Relationship between Knowledge and Practice in the Curriculum and Assessment*. Concept Paper commissioned by Umalusi.

Gamble, J. (2012). *Models and pathways to institutionalise apprenticeships*. Labour Market Intelligence Partnership. Working paper. Human Sciences Research Council. Pretoria.

Kelly, G. M. (2000). *Employment and Concepts of Work in the New Global Economy*. *International Labour Review*; 2000; 138, 1; ABI/Inform Global.

Lucas, B., Spencer, E. and Claxton, G. (2012). *How to teach vocational education: a theory of vocational pedagogy*. Centre for Real-World Learning. City and Guilds, Centre for Skills Development.

Lucas, B. (2014). Vocational pedagogy. What it is, why it matters and how to put it into practice. Report of the UNESCO-UNEVOC online conference, 12 – 26 May 2014. UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, Bonn.

McLean, R. and Wilson, D. (2009). International Handbook of Education for the Changing World of Work. Bridging Academic and Vocational Learning. UNEVOC, International Centre for Technical and Vocational Education and Training. Springer.

Organisation of Economic Cooperation and Development, (2014). A Skills beyond School Review of South Africa. OECD Reviews of Vocational Education and Training.

Rauner, F. and McLean, R. (2008). Handbook of Technical and Vocational Education Research. Springer.

Swiss South Africa Cooperation Initiative (SSACI), (2015). Industry-based WIL for TVET lecturers in the Adv Dip TVT and the SSACI programme as a model for this. Presentation by Taylor, V. at the Wits School of Education, 27 November 2015.

Shulman, (2005). In Lucas, B. (2014). Vocational pedagogy. What it is, why it matters and how to put it into practice. Report of the UNESCO-UNEVOC online conference, 12 – 26 May 2014. UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, Bonn.

Taylor, R. F. (2004). Extending Conceptual Boundaries: Work, Voluntary Work and Employment. Work, Employment & Society, 2004 18: 29.

Taylor, N. (2011). Priorities for Addressing South Africa's Education and Training Crisis. A Review Commissioned by the National Planning Commission. Retrieved from <http://www.jet.org.za/>, March 2014.

United Nations Educational, Scientific and Cultural Organisation. (2012). Strengthening TVET teacher education. Report of the UNESCO-UNEVOC online conference, 25 June to 6 July 2012. Retrieved from <http://www.unevoc.unesco.org/go.php>, January 2014.

Unwin, L. (2008). In Handbook of Technical and Vocational Education Research. Springer.

Wheelahan, L. (2005). What kind of curriculum, pedagogy and qualifications do we need for an uncertain future? In What a difference pedagogy makes: researching lifelong learning and teaching conference. Proceeding of 3rd International Conference, University of Stirling, United Kingdom.

Young, in Wheelahan, L. (2005). What kind of curriculum, pedagogy and qualifications do we need for an uncertain future? In What a difference pedagogy makes: researching lifelong learning and teaching conference. Proceeding of 3rd International Conference, University of Stirling, United Kingdom.

Annexure 1: Collaboration partners (Technical Working Group and Reference Group)

Name	Institution	Name	Institution	Name	Institution
A van der Bijl	CPUT	F van As	UJ	S Ramos	CUT
K dos Reis	CPUT	A Combrinck	NWU	D Coetzee	UFS
J Papier	UWC	L van Niekerk	UNISA	P Munna	Damelin
G Alexander	CUT	S Mokoena	UNISA	M Makgato	TUT
L Mathlo	CUT	P Lolwana	WITS	V Candiotes	UP
L Kalobo	CUT	M Madileng	WITS		
P Mollo	CUT	S Khoza	WITS		
P Plekker	UFS	V Naiker	WITS		
A Hiralaal	DUT	R Blom	WITS		
L Maluleke	NMMU	V Wedekind	WITS		
N Rudman	NMMU	V Taylor	SSACI		
C Thomas	UFH	E Odendaal	UFS		
D Gumbi	WSU	N Teis	UFS		
M Braun	UP	C Chitumwa	VUT		
W Rauscher	UP	E Mutekwe	VUT		