Enablers of work-integrated learning in technical vocational education and training teacher education

PETRINA BATHOLMEUS[1]
CARVER POP
Cape Peninsula University of Technology, Cape Town, South Africa

The demand for relevant skills for the labor market constitutes one of the fundamental challenges facing the post-school system in South Africa. The South African government has therefore proposed a policy on professional development teacher education programs for Technical and Vocational Education and Training and the South African Department of Higher Education and Training lecturers to ensure that they understand the labor market demands and are able to produce graduates who meet these demands. This study examines factors that enable the successful integration of industry-based work-integrated learning (WIL) in professional development teacher education programs for TVET lecturers. The enabling factors were obtained from 28 academic staff in 14 South African universities responsible for developing WIL curricula in TVET teacher education programs. Some of the enabling factors that were considered when integrating WIL in TVET teacher education include higher education providers, students, industry, mentorship, the varied programs and learning outcomes as well as the community.

Keywords: Work-integrated learning, TVET teacher education, industry-based WIL, professional development, stakeholder needs

The workplace element, specifically industry-based work-integrated learning (WIL), is a component of technical and vocational education and training (TVET) teacher education which has recently become a subject of increased interest in South African universities. Industry-based WIL is described as learning in and from workplaces through industry visits, placements, and other interactions with industry (Republic of South Africa, 2013a; 2013b). Teacher education in South Africa is accustomed to using teaching practice as the component in the curriculum that integrates theory and practice. However, the South African Department of Higher Education and Training now requires faculties of education in South African universities to integrate industry-based WIL, in addition to teaching practice, in professional development TVET teacher education programs. The Department of Higher Education and Training has introduced these professional development programs through the "Policy on Professional Qualifications to train Technical Vocational Education and Training (TVET) lecturers" (Republic of South Africa, 2013b), who are not only required to be knowledgeable about industry demands, but also to be able to produce graduates who meet these demands. Schuller and Bergami (2012) point out the need for the implementation of WIL curriculum approaches that inform students about contemporary work practices, enabling graduates to be effective when entering the workforce. For students to be meticulously trained and educated on contemporary work processes, the educator needs to understand the teaching and learning practices first. Baldwin and Rosier (2017, p. 47) emphasize that the WIL aspect in the teacher training curriculum will prepare educators to be flexible and able to respond to unpredictable issues as they emerge.

The "Policy on Professional Qualifications for TVET Lecturers" (Republic of South Africa, 2013b) thus stipulates the duration of WIL in each program and explains that the industry-based WIL component across TVET lecturer qualifications needs to be structured, supervised, and assessed in appropriate teaching and specialized workplace settings. Yet, there are no specific guidelines on how to integrate

[1] Corresponding author: Petrina Batholmeus, Batholmeusp@cput.ac.za

industry-based WIL in the teacher education curriculum. Smyth, Dow, Hattam, Reid, and Shacklock, (2000) further corroborate that imperatives to address the workplace-learning component of teacher education are not often articulated. This may be because student teachers have always been sent to schools for WIL (teaching practice), an approach which does not cater for different types of industry and stakeholders in general, hence the need for industry-based WIL. Van der Bijl and Taylor (2018) confirm that the need for TVET lecturers to have industry knowledge and expertise is a primary distinguishing feature between schoolteachers and TVET lecturers and this feature influences the nature of the training that TVET lecturers should receive.

This article reports on a qualitative study which examined the integration of the industry-based WIL component in professional development teacher education programs for TVET lecturers. The purpose of the study was to identify the enabling factors for integrating industry-based WIL in TVET teacher education from the perspectives of academics in South African faculties of education. The participants of this study are responsible for curriculum development of teacher education professional development qualifications for TVET lecturers. The focus of this study is the practical component of these qualifications. The respondents are accustomed to using teaching practice as the WIL modality in teacher education. However, the industry-based WIL component distinguishes TVET qualifications from regular teacher education programs; hence the need to explore what factors, or key role players, need to be considered and in what way, to enable a successful integration of WIL in TVET teacher education.

It is argued that the first stage of developing and integrating industry-based WIL in the TVET teacher education curriculum is knowing what factors to consider for the success of WIL in TVET teacher education, who the key role players in the process are as well as their needs. This knowledge will enable the curriculum developer to understand the nature of the industry-based WIL component and to come up with programs that are responsive to all stakeholders needs.

LITERATURE REVIEW

The literature review focuses on industry-based WIL in TVET teacher education Firstly, WIL in TVET teacher education in various contexts is explored. Secondly, industry-based WIL is reviewed in terms of professional development qualifications for TVET lecturers as well as enabling factors that have been observed and documented to enable a successful integration of WIL in academic programs.

WIL IN TVET TEACHER EDUCATION

One of the main purposes of higher education institutions, including TVET colleges, is to prepare students for the world of work. TVET college lecturers thus need to get regular workplace experience to keep abreast of developments in industry. The Council of Higher Education (CHE, 2011, p. 4) defines WIL as an educational pedagogy comprising curricula, as well as pedagogic, and assessment practices across a range of academic disciplines that integrate formal learning and workplace concerns. Studies have indicated that many TVET lecturers in South Africa are not that confident in their abilities to pass on practical skills to their students and are in urgent need of a practical upskilling intervention (Duncan, 2017; Wedekind, 2016). Upskilling can be affected through professional development programs with a focus on the workplace-based element. Young (2006) proposes models to address this challenge, one of which promotes professional development through joint responsibility and partnership between TVET colleges and universities and addresses the issues of specialist vocational pedagogy and curriculum knowledge. The challenge of upskilling lecturers can also be addressed through different forms of adequate capacity building on WIL. Barends and

Nel (2017) stress that the implementation of the WIL aspect in teacher education and capacity building requires all stakeholders to rethink every aspect of WIL.

In the context of this study, the main purpose of industry-based WIL in TVET teacher education is the integration of classroom theory and learning with workplace learning. The curricula, as well as pedagogic and assessment practices, highlighted in the WIL definition support the integration of theory and practice in student learning, which is what the implementation of WIL approaches aims to achieve (Council on Higher Education, 2011). However, the integration of WIL in the teacher education curriculum, or any curriculum, requires consideration and proper planning. Policies on teacher education qualifications (Republic of South Africa, 2013b, 2015) emphasize that WIL or learning-in-practice should be structured, supervised, integrated into the learning program, and formally assessed. In support, Barends and Nel (2017) argue that for WIL in teacher education to be a success, universities need to implement innovative mechanisms to strengthen it, this firstly necessitates the identification of key role players, the nature of WIL required, and the resources needed, and secondly, incorporating it into curricula.

The Council of Higher Education in the "Higher Education Qualifications Sub-Framework" (Republic of South Africa, 2014) describes WIL as a characteristic of vocational and professionally oriented qualifications, which may be integrated in qualifications at all levels of the National Qualification Framework. In addition, the "Higher Education Qualifications Sub-Framework" explains that the nature and purpose of the qualification type, objectives and outcomes, as well as the National Qualification Framework level of the program should determine the different forms of WIL. The guidelines for industry-based WIL in professional development teacher education qualifications, as stipulated by the Department of Higher Education and Training in the "Policy on Professional Qualifications for Lecturers in Technical and Vocational Education and Training" (Republic of South Africa, 2013b) in different programs, are provided in Table 1.

Although guidelines and specifications on the period for industry-based WIL for both the classroom and workplace aspect are stipulated in the Policy to train TVET lecturers, there is groundwork to be done before these guidelines are implemented. For instance, information on an institution's ability to provide WIL opportunities and all facilities needed to support student learning is usually not stipulated in policies. Moreover, Abeysekera (2006) stresses that for any WIL program to be successful; it should adhere to the principles of best practice. The authors suggest that, where possible, regular evaluation by stakeholders involved in the program, such as students, faculty, and site supervisors should be considered.

FACTORS ENABLING THE INTEGRATION OF WIL IN TVET TEACHER EDUCATION

WIL comes in many forms thus Jackson (2013) describes it as "it is a flexible creature which can be adapted to different disciplines and organizational contexts" (p. 99). These forms may include sandwich programs, apprenticeships, credit-bearing WIL programs, teaching practice, and industry-based WIL, amongst others. Industry-based WIL in the South African context has therefore come to be understood as a new form of workplace learning in TVET teacher education programs in which lecturers practice to teach and learn the skills, techniques and practices of a specific subject from industry placements. Schüller and Bergami (2011, p. 134) explain that a vocational education training teachers' industry placement entails the development of industry-based skills, which is an integral part of any industry-based WIL experience. They add that, TVET teachers learn theoretical

knowledge and apply it to their teaching, which lays the foundation for further implementation of theory into practice.

TABLE 1: WIL guidelines in TVET teacher education qualifications

QUALIFICATION	WIL PERIOD	SPECIFICATIONS
Diploma in Technical and Vocational Teaching (Dip TVT) NQF level 6	18-24 weeks of WIL in appropriate teaching settings and specialized workplace settings	A minimum of 9 weeks of the teaching settings component. A minimum of 9 weeks for lecturing specialization in technical/vocational in nature. A minimum of 2 weeks for lecturing specializations that are general/academic in nature.
Bachelor of Education in Technical and Vocational Teaching (B Ed TVT) NQF level 7	32-40 weeks of WIL in appropriate teaching settings and specialized workplace settings	Between 16 and 20 weeks of the teaching settings component. Between 16 and 20 weeks of specialized workplace settings component for lecturing specialization in technical/vocational in nature. A minimum of 4 weeks for lecturing specializations that are general/academic in nature.
Advanced Diploma in Technical and Vocational Teaching (Adv Dip TVT) NQF level 7	A minimum of 10 weeks and a maximum of 12 weeks of WIL	A minimum of 8 weeks of the teaching settings component, of which at least 4 should be consecutive. A minimum of 2 weeks for the specialized workplace settings component.

In the South African context to date, more effective partnerships between vocational training and the world of work are required to address the lack of technical skills as well as the gap between the world of work and TVET colleges (Republic of South Africa, 2013a). Field, Musset and Alvarez-Galvan (2014) assert that "a very wide range of evidence shows that effective vocational programs can be part of the answer by providing practical training linked to the prospect of a job, smoothing the transition from school to work". This also includes TVET teacher training. The International Labour Organisation (2010) and Grootings and Nielsen (2005) claim that the role of TVET teachers in WIL has considerably changed worldwide and that there is a need to address these roles through professional development, considering the various active TVET stakeholders and their needs.

Van de Bijl and Taylor (2018) reported on a project run by the Swiss-South African Cooperative Initiative on TVET and further education training colleges lecturers' industry-based WIL placements in which lecturers were placed in industry for different periods of time to develop skills and improve alignment between practices in education and industry. In their findings, they highlighted industry as an important factor in defining industry-based WIL for TVET college lecturers and it being a distinguishing factor in teacher education. In their earlier study, Van de Bijl and Taylor (2016)

explored the relationship between industry and education in the TVET teacher education sector and found that it was not straightforward. TVET lecturers' need from WIL is to improve their knowledge of practice, their theorization and teaching skills depending on the TVET program in which they are enrolled. The workplaces they get placement in hence need to be able to provide experiences that will enhance their training of students and the ability of vocational education to address the mismatch between the labor market and graduates' abilities (Van de Bijl & Taylor, 2016). According to Grollmann (2008), the work environment of vocational teachers constitutes an important factor influencing their professional performance.

The industry is, however, not the only stakeholder that should be considered as far as industry-based WIL is concerned. Studies identifying WIL stakeholders in WIL have highlighted that the various stakeholders' backgrounds, roles and responsibilities can influence the effectiveness of a WIL program and how it operates (McCurdy & Zegwaard, 2009; Thonglek, Howes & Kavanagh, 2011). These, as highlighted in research, are more prevalent in other fields of study other than in the TVET teacher education, especially, in the South African context. Schüller and Bergami (2011, pp. 135–136) argue that while industry placements are vital and should be considered as some of the key stakeholders in industry-based WIL, teacher, the educational institution, the host industry and students and the relationship between all should also be classified as vital in making WIL a success.

THEORETICAL FRAMEWORK

Activity Theory

Activity theory was used as the basis of theoretical framework in this study to collect data as well as analysis on factors that enable the integration of industry-based WIL in TVET teacher education. Originally introduced by Vygotsky (1978), later expanded by Yrjö Engeström (1987, 1999, 2001) activity theory is described as an activity or a system in which the researcher explores "who is doing what, why and how" (Hasan & Kazlauskas, 2014, p. 9). According to Engeström (1987, 2001), in activity theory, there should be a goal that a certain community wishes to reach. Hasan and Kazlauskas (2014) also explain activity theory as a lens that can be used in research where activities of a certain system are identified together with each activity's subject(s), object and purpose followed by the identification of the actions and mediating tools of the activity or tools; where tools can be primary, secondary or tertiary. The subject of an activity system is the person, or group of people whose perspective is the focus of the analysis. In this study these are the representatives of different faculties of education. The object is the goal or motive of the activity system. Both the subject and object are influenced by mediating tools or artefacts, the nature of the community to which the activity system belongs, the rules of normal behavior appropriate to the system and the division of labor within the system (Wilson, 2014, p. 22).

Activity theory has been developed in three generations over the years. The first generation of activity theory was an activity mediation approach by Vygotsky (1978) in which individuals' cultural artefacts are combined with their actions to reach a certain goal. In the second generation, Engeström (1999) argued that artefacts should be considered as part of the human actions and the mediation should be explored in its relationship with other components of the activity system. The elements of community, rules and division of labor was then added. In addition, Engeström (1999) expanded the system in the third generation and emphasized the importance of contradictions within activity systems and their ability to bring about change and development. In the third generation of activity theory, Engeström used joint activity systems to explain social transformations, change and

development through multiple perspectives and contradictions (Engeström, 1999). A single activity theory model by Engeström (Figure 1) is used in this study to explain the participants' focus group discussions on who and what enables the integration of industry-based WIL in TVET teacher education curriculum.

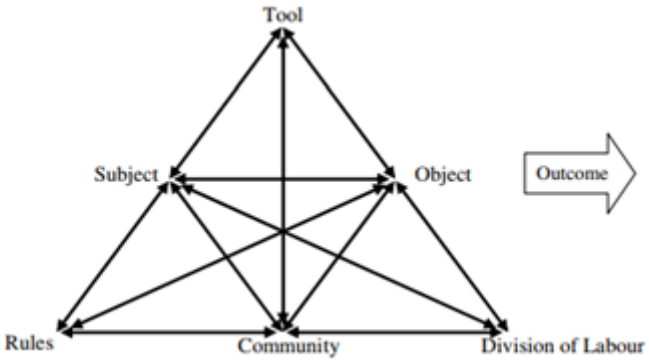

FIGURE 1: Engeström's Expanded Activity Theory Model (Engeström, 2001).

In the model above, activity theory illustrates the relationship between the subject (the doer) and the object forms the core of the activity. The object (the thing being done) of an activity encompasses the activity's focus and purpose while the subject incorporates the subjects' various motives. The object is central in this study as the activity used in the methodology aims to explain the factors that enable industry-based WIL to come up with some considerations for integrating industry-based WIL in the TVET teacher education curriculum (outcome).

METHODOLOGY

A qualitative approach was used in this study to identify the factors that enable WIL in TVET teacher education. Quality in qualitative research is described by Lune and Berg (2017, p. 12) as the exploration of the "what, how, when, where, and why" of a phenomenon. The essence and ambience of the phenomena are therefore described in qualitative research.

Purposive sampling was used to select two lecturer representatives from each of the 14 South African universities as participants in the study. Richie, Lewis, and Elam (2003) describe purposive sampling as an action in which members of a sample are chosen with the purpose of representing a location or type in relation to key criteria. The chosen sample "ensures that all key constituencies are relevant to the subject and that within each of the key criteria, some diversity is included so that the impact of the characteristic concerned can be explored" (Richie, Lewis, & Elam, 2003, p. 79). Two lecturers from each of the 14 universities (n=28) were purposively selected in this study on the basis that they represented their different faculties of education. They are skilled personnel in curriculum design in teacher education and would be responsible for the curriculum development of the professional development qualifications for TVET lecturers at their respective universities. In addition, lecturers from the faculties of education, who were selected as participants in this study, were part of capacity building workshops organized by the South African Department of Higher Education and Training and facilitated by one university in the Eastern Cape. The workshops aimed to capacitate faculties of education on industry-based WIL as well as the practices that make up industry-based WIL.

Data were collected at four focus group discussions held at a capacity-building workshop for developing curriculum for industry-based WIL in TVET teacher education qualifications. Each focus group consisted of seven participants. Representatives from 14 South African universities were the respondents in the focus groups, who provided their personal and institutional viewpoints on what enables industry-based WIL component in TVET teacher education. The focus group discussions method was selected to collect data because the aim of the study was to collectively understand the role players of industry-based WIL in TVET teacher education from education faculties in all South African provinces. The participants were thus not divided according to their respective institutions but treated as faculties of education from South African universities, who needed to have a collective understanding of industry-based WIL and what can make it a success in TVET teacher education. The researchers used a focus group discussion as an activity, in which all university representatives were requested to come up with posters indicating what and who they think enables or should be considered and in what way when integrating industry-based WIL stakeholders in TVET teacher education. The reasoning behind these enablers was explained in the discussions and presentations.

The relationship between participants from all 14 faculties of education and the object (enabling factors for industry-based WIL) formed the core of this activity. Identifying the points of consideration for integrating WIL in TVET teacher education curriculum was the purpose of this activity to which the subject (all participants) contributed with their diverse backgrounds and experiences. All participants followed the instructions stipulated by the researchers, which were to create a metaphorical representation of WIL enablers in a picture form, including only the main concepts and key words necessary to describe the picture. All participants engaged in the group discussions and presentations, explaining the enabling factors represented in their pictures and how they enable the integration of industry-based WIL in TVET teacher education qualifications. Figure 2, displays the method used to collect data using Engeström's activity system model. The model shows the relationship between all elements in the activity as well as their purpose towards achieving the objective of the study.

Since the results were presented metaphorically, the findings are presented according to the pictorial metaphors produced by each group. The discussion of the findings is thus deduced from the findings. The focus of this study is the 'object' element in the activity system in Figure 2, to determine enabling factors for the integration of industry-based WIL in TVET teacher education. From the findings and discussion, the reader can deduce what to consider when integrating WIL in various TVET teacher education qualifications, depended on their various contexts. Ethical approval, (reference number EFEC 1-10/2018), to collect data from the national capacity building workshops for TVET lecturers' professional development qualifications was granted by the coordinating institution of higher education. The limitations of the study are that the views expressed on what may be required for a successful integration of industry-based WIL in curricula are only from faculties of education staff and not other stakeholders. The faculties of education have, however, been given the responsibility by the Department of Higher Education and Training to come up with curriculum for TVET teacher qualifications, including WIL curriculum. Their views are thus vital.

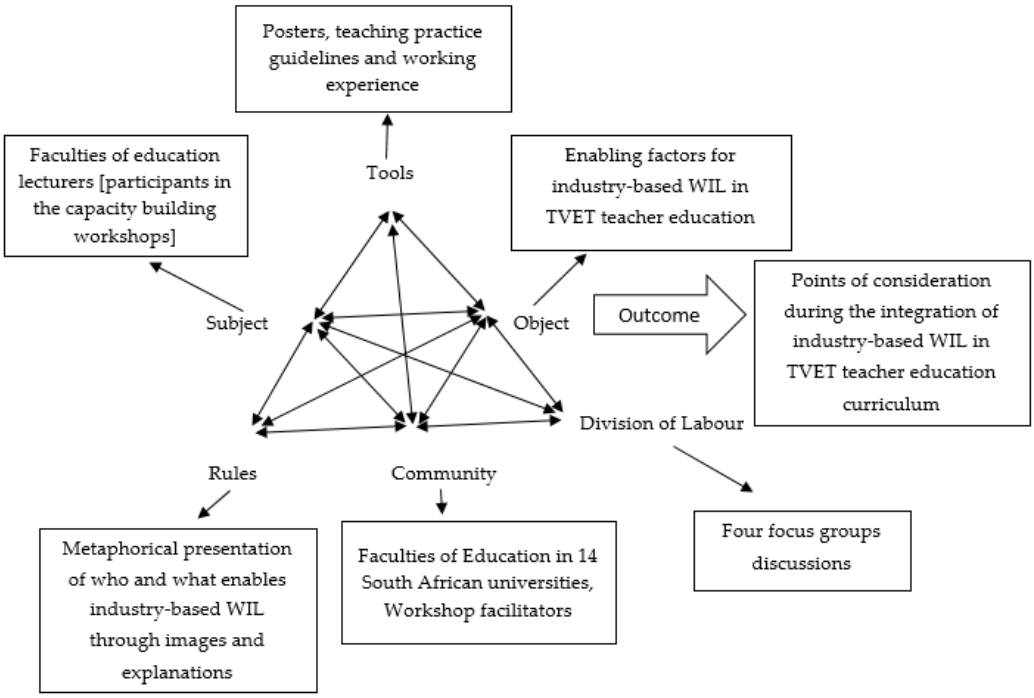

FIGURE 2: Activity system for identifying enablers for integrating industry-based WIL in TVET teacher education.

FINDINGS AND DISCUSSION

The factors that can enable the successful integration of industry-based WIL in TVET teacher education curriculum were identified by the participants and are explained and discussed below. The participants presented the factors that enable industry-based WIL through metaphorical pictures with key words as well as explanations on the pictures provided. All groups emphasized that there are key role players and factors that should be considered when designing industry-based WIL.

Collectively, the participants found that the key role players or stakeholders that were identified to be beneficiaries of industry-based WIL from all four focus groups were crucial in enabling the success of industry-based WIL. These as identified by the participants are: the country and community/society; higher education providers; TVET lecturers, TVET sector; workplaces/industry; professional bodies; and students in the TVET sector. This is in line with the Republic of South Africa (2014, 2013a) who explained that some of the above-mentioned stakeholders and more are crucial to consider when identifying the need for WIL in a specific academic program. The findings from pictorial metaphors produced by the four focus groups are presented below.

ENABLING FACTORS FOR INTEGRATING INDUSTRY-BASED WIL

Group One

The first group presented their results regarding factors enabling WIL in the form of a tree. The roots of the tree represented the underpinning WIL philosophy, which may consist of different forms of

WIL and can be described differently as experiential learning or cooperative education. Higher education providers comprised the trunk of the tree, who in this context were the faculties of education. According to the participants in this group, "these are the central stakeholders of industry-based WIL as they must develop curriculum and offer the professional development program". Higher Education Institutions hence play a key role in producing the actual WIL component in its entirety and are some of the vital enablers.

According to this group, higher education providers need to note that:

> To develop a successful workplace-learning component in the TVET teacher education curriculum and in any other program, the context in which it is prepared should be taken into consideration, as well as the ethics related to the content and pedagogy.

The group hence highlighted that higher education providers need to be capacitated in terms of costs and resources to assist them in sustaining the programs. Higher education providers also need to ensure that the workplace learning aspect in the curriculum is aligned with discipline knowledge and practice. As a secondary benefit, industry-based WIL needs to have socially responsive outcomes. This will benefit the branches of the tree which, in this context, was said to represent other stakeholders provided as employers; lecturers; the community; and students who should be responsible, innovative, critical thinking, and informed professionals.

Group Two

The second group presented WIL as an abstract aspect of social responsibility in the form of a city. The functioning city was presented as a result of different factors related to WIL. Factors identified in this group were HEIs, monetary resources, students, industry and mentorship which all play different parts in contributing to the growth and development of this city.

WIL, as a social responsibility to build a city, emphasized the importance of each factor and their role in the building process. Every factor is vital and needs to be considered carefully to benefit all stakeholders. Although different stakeholders were presented to have different needs and the factors that contribute to building the city in various ways, the benefits extend to all stakeholders. Factors such as resources to be used and the economy of the country were also taken into consideration. This group highlighted the importance of guidance in WIL. According to them, "mentorship is vital in industry therefore for the successful integration of industry-based WIL in curriculum, mentorship at every stage, but especially in HEIs and industry should be carefully considered". This group explained that mentorship should be understood and all stakeholders should contribute towards its success.

Group Three

For the third group, WIL was depicted as drops of water from a tap, and each drop represented the enablers of WIL. Similar to the previous groups, the factors that were said to be considered and put into consideration when integrating industry-based WIL in TVET teacher education were the state, society, industry, and professional bodies. Professional bodies were explained to make significant contribution to not only defining WIL but have policies which stipulate industry-based WIL, professional development programs that should be implemented as well as responsible for accrediting these programs. In the South African context, the role of these bodies and government departments is to assist in WIL processes. The society, as a drop from the tap was explained as

responsible for providing the needs for all TVET programs and most importantly, it is the society that benefits from a successful TVET system. "The needs of society are thus the driving force for what should be learned and applied". The state was also listed as one of the enabling factors for industry-based WIL in that the support of the state in monetary form as well as general support. The sites were described as the industry who are responsible for placing TVET lecturers for WIL and offer mentorship for WIL placements. The group explained that "if the workplace understands the roles and reason behind industry-based WIL placements, lecturers have a high chance of learning from the experience". The ideal workplace sites were explained in this group as 'accommodating', 'critical', enabling'. Water drops for each enabler differ in the value it adds to WIL implementation; however, they all entail building up WIL and working together to meet all stakeholder needs so that they all benefit from it.

Group Four

The last group presented WIL as a pot on a fire. In this picture, TVET lecturers were the content inside the pot and thus the main stakeholders in terms of needs and benefits of industry-based WIL. The content inside the pot, according to this group, needs to be well-cooked, so that it is ready to serve into TVET colleges and to produce graduates that meet the needs of the labor market. The labor market/industry/workplace was identified as the enablers with the most pertinent need, which is to benefit from its prospective employees.

The wood or fuel used to light the fire was presented as the factors that should be considered for meeting the needs of all enablers and the success of industry-based WIL in TVET teacher education. These factors presented also defined the needs of the main stakeholders of WIL in teacher education and showed the importance of considering these roles, specifically because industry-based WIL has never been part of teacher education. WIL in TVET teacher education was said to aim at serving different types of lecturers, hence the different programs. TVET lecturers targeted to enrol in these programs include students with other qualifications studying towards roles of teaching in a TVET sector, as well as the ones that are currently teaching in the TVET sector, but lack the teaching component. The WIL needs for lecturers enrolled for the Bachelor of Education in Technical and Vocational Education, for example, would not be the same as the needs of the lecturers enrolled in the Advanced Diploma in Technical and Vocational Teaching. This may be in terms of the period that lecturers would spend in the workplace as well as the learning outcomes and expectations from the workplace. The factors to be considered in the integration of WIL explained by the fourth group were collectively presented in the picture as policies in place, cultures, roles, responsibilities, mentorship, information communication technology, standards, and ethics, they must be considered according to the type of TVET qualification and type of TVET lecturer.

THE SIGNIFICANCE OF INDUSTRY-BASED WIL ENABLERS

Faculties of education in South African universities, as alluded to in the "Policy on Professional Qualifications for TVET Lecturers" (Republic of South Africa, 2013b) in the TVET sector, are some of the vital stakeholders of industry-based WIL. As such, they need to collaborate and try to develop a culture of mutual learning through the development of professional development programs for TVET lecturers. According to Van der Bijl and Taylor (2018), lecturers in vocational programs need to be subject experts in that they have current knowledge and experience of their subjects' application in relevant industries, and also have teaching expertise as they are expected to bridge the gap between education and work in the teaching of their subjects. As stakeholders, the education faculties

collaboration could enable them to identify areas of common strength and potential for conceptual growth, especially on the integration of the workplace-learning element in TVET teacher education curriculum. In this study, lecturers from various faculties of education highlighted the potential of the TVET sector to enhance social and economic development in South Africa through addressing the labor market demands. However, this is currently not happening, because of the inadequately educated workforce within TVET institutions, which remains one of the challenges that face the South African TVET sector. The university-workplace aspect in the training is thus of importance. "While education faculties have a strongly developed practice of school-based WIL, no faculty has, to date, offered a formal program including WIL that takes place in what the TVET policy framework calls industry-based settings"(Van der Bijl & Taylor, 2018, p. 129). This is however being addressed through the "Policy on Professional Qualifications for TVET Lecturers" (Republic of South Africa, 2013b) and capacity building efforts for faculties of education to be able to train TVET lecturers and especially on the workplace learning aspect. It was raised by the participants that WIL should be considered in alignment to different qualifications and their outcomes as this will enable all stakeholders to fully benefit from workplace learning. Ulicna, Messerer, and Auzinger (2016) confirm the importance of the alignment of stakeholders and their needs with specific qualifications.

Components in curricula such as industry-based WIL for TVET lecturers should be aligned with the different TVET systems lecturers come from or the level on which they operate, the subjects they teach, hence the industry they will go into, and the qualifications they already have. There is evidence that suggest that faculties of education across South African universities select content and pedagogies that vary, and this has made the teacher training aspect inconsistent across institutions of higher learning (Papier, 2006; 2010). Factors that enable industry-based WIL in TVET teacher education are the same as factors, including stakeholders, in other forms of WIL applied in different academic programs. This may be mainly because the learning outcomes of WIL for all academic disciplines are similar and entail application of theory into practice. However, from the TVET teacher education perspective, the stakeholders' needs were highlighted as different, due to the different industries they cater for as opposed to the 'teaching practice' they have been accustomed to. Van der Bijl and Taylor (2018), in their study on WIL for TVET lecturers highlight that "trainee lecturers need to understand that their professional community includes the education and industry community in their subject field and they need to be given the capacity to build relationships and work with industry"(p. 142).

Recognition of the different needs of faculties of education, responsible for developing curriculum for industry-based WIL in TVET teacher education, and for delivering it to TVET lecturers (Van der Bijl & Taylor, 2018), have been highlighted as capacity building in WIL. As the type of industry is the major differentiating component between teaching practice and WIL, these different needs would have to be considered first. When faculties of education are equipped to develop and deliver TVET teacher education program effectively, other needs are also considered and addressed.

During the discussions, emphasis was placed on the need to discuss industry-based WIL in specific programs according to their specifications, such as the qualification levels on the National Qualification Framework and the period of both WIL in the classroom and the workplace. This also means that the varying learning outcomes should be considered and cannot be generalized for all qualifications. The needs of the students will be based on the type of qualification they have enrolled for and their backgrounds (Thonglek, 2014). Therefore, this would call for completely new activity systems to explore the stakeholders and needs for each qualification, which can then be combined to form a collective picture of all enablers for a successful integration of industry-based WIL in TVET

teacher education. The discussions thus highlighted the need to examine the context, needs of specific stakeholders, and the outcomes of a specific program before conceptualizing and integrating industry-based WIL.

Knowing different WIL factors that enable the integration of WIL enables curriculum developers and all involved in the integration of industry-based WIL in TVET teacher education to develop a workplace component in the curriculum that is aligned with all stakeholders' needs and benefits. Although different professional development qualifications have different requirements and specifications of industry-based WIL, the stakeholders being investigated are the same; hence the need to know who they are and what their needs are. This also creates an understanding of what should be prioritized first when developing and integrating the workplace element in any curriculum.

CONCLUSION

Identifying factors that enable the integration of WIL in the curriculum is an essential component of integrating industry-based WIL in TVET teacher education. Most TVET systems have the industry as one of the main stakeholders and are supply-driven, but struggling to respond to economic demands, which exacerbates skills mismatches in the labor market. Meeting these skills matches seems to be the overarching common goal of industry-based WIL enablers. In summary of the factors presented in the findings, it is necessary to consider lecturer preparation, professional development, skills delivery, and alignment of curriculum with labor market demands when considering the integration of industry-based WIL in TVET teacher education. Future studies could investigate specific factors that may influence industry-based WIL in different programs dependent on their varied requirements including focus and objectives.

ACKNOWLEDGEMENTS

This paper has been developed through the Teaching and Learning Development Capacity Improvement Program, which is being implemented through a partnership between the South African Department of Higher Education and Training and the European Union, coordinated by the Cape Peninsula University of Technology. This work was presented at the 3rd International Research Symposium of World Association for Cooperative Education (WACE) in Stuttgart, Germany, in June 2018.

REFERENCES

Abeysekera, I. (2006). Issues relating to designing a work-integrated learning program in an undergraduate accounting degree program and its implications for the curriculum. *Asia-Pacific Journal of Cooperative Education, 7*(1), 7-16.

Baldwin, C., & Rosier, J. (2017). Growing future planners: A framework for integrating experiential learning into tertiary planning programs. *Journal for Planning Education and Research, 37*(1), 43-55. doi: 10.1177/0739456X16634864

Barends, Z. & Nel, C. (2017). Work-integrated learning within the reading literacy component of foundation phase teacher preparation programmes. *South African Journal of Childhood Education 7*(1), a435. https://doi.org/10.4102/sajce.v7i1.435

Council on Higher Education (CHE). (2011). *Work-integrated learning: Good practical guide, HE Monitor No 12*. Pretoria, South Africa: Council on Higher Education.

Duncan, K. (2017). Developing lecturers at VET institutions through engagements with industry: The South African experience. In F. Eicker, G. Haseloff, & B. Lennartz. (Eds.), *Vocational Education and Training in Sub-Saharan Africa: Current Situation and Development.* Retrieved from https://doi.org/10.3278/6004570w

Engeström, Y. (1987). *Learning by expanding: An activity theoretical approach to developmental research*. Orienta-Konsultit: Helsinki, Finland.

Engeström, Y. (1999). Innovative learning in work teams: Analysing cycles of knowledge creation in practice. In Y. Engeström, R. Miettinen, R-L, Raija-Leena Punamäki, (Eds.) *Perspectives on activity theory*. pp. 377-406. Cambridge, UK: Cambridge University Press,

Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work, 14*(1), 133-156.

Field, S., Musset, S., & Alvarez-Galvan, J-L. (2014). *A skills beyond school review of South Africa.* OECD Reviews of Vocational Education and Training. Retrieved from https://www.oecd.org

Grollmann, P. (2008). The quality of vocational teachers: Teacher education, institutional roles and professional reality. *European Educational Research Journal 7*(4), 535–47.

Grootings, P. & Nielsen, S. (Eds). (2005). *EFT yearbook 2005: The role of teachers in VET reform stakeholders*. Luxembourg: Publications Office of the European Union.

Hasan, H. & Kazlauskas, A. (2014). Activity theory: Who is doing what, why and how. In H. Hasan (Ed.). *Being practical with theory: A window into business research* (pp. 9-14). Wollongong, Australia: THEORI.

International Labour Organization. (2010, September). *Teachers and trainers for the future – Technical and vocational education and training in a changing world*. Report for discussion at the Global Dialogue Forum on Vocational Education and Training, Geneva, Switzerland: Author.

Jackson, D. (2013). The contribution of work-integrated learning to undergraduate employability skill outcome. *Asia-Pacific Journal of Cooperative Education, 14*(2), 99-115.

Lewis, (Eds.). *Qualitative research practice: A guide for social science students and researchers* (pp. 77-108). Thousand Oaks, CA: Sage.

Lune, H. & Berg, B. L. (2017). *Qualitative research methods for the social sciences*, (9th ed.). Harlow, England: Pearson Education.

McCurdy, S., & Zegwaard, K. E. (2009). Faculty voices: What faculty think about work-integrated learning. *Journal of Cooperative Education and Internships*, *43*(1), 36-53.

Papier, J. (2010). From policy to curriculum in South African vocational teacher education: A comparative perspective, *Journal of Vocational Education & Training, 62*(2), 153-162, doi: 10.1080/13636821003790197

Papier, J. (2006). *How faculties of education respond to new knowledge requirements embedded in teacher education policies*. (Doctoral Thesis, University of Pretoria, Pretoria, South Africa.

Republic of South Africa (RSA). (2013a). *White paper for post-school education and training: Building an expanded, effective and integrated post-school system*. Pretoria, South Africa: Department of Higher Education & Training.

Republic of South Africa (RSA). (2013b). Policy on professional qualifications for lecturers in technical and vocational education and vocational education and training. *Government Gazette*, 576(36554).

Republic of South Africa (RSA). (2014). *Higher Education Qualifications Sub-Framework (HEQSF).* Pretoria, South Africa: Council on Higher Education.

Republic of South Africa (RSA). (2015). *Revised policy on the minimum requirements for Teacher Education Qualifications*. Government Gazette, 596(38487).

Ritchie, J., Lewis, J., & Elam, G. (2003). Designing and selecting samples. In J. Ritchie & J.

Schüller, A & Bergami, R. (2011). Beyond industry placement: What happens after the VET business teacher returns to work? *Journal of the Worldwide Forum on Education and Culture, 3*(1):134–144. Schuller, A. & Bergami, R. (2012). Industry placement experiences in vocational education: Voices from Australia. *International Journal of Knowledge, Culture and Change Management, 11*(6). pp. 29-48.

Smyth, J., Dow, A., Hattam, R., Reid, A., & Shacklock, G. (2000). *Teachers' work in a globalizing economy*. London: Falmer Press.

Thonglek, S., Howes, T., & Kavanagh, L. (2011). *Work integrated learning: A realistic evaluation of KMUTT 's chemical engineering practice school.* Paper presented at the 22nd Annual Conference for the Australasian Association for Engineering Education (AAEE), Fremantle, WA, Australia.

Thonglek, S. (2014). *Maximising stakeholders' benefits of work integrated learning programs: Schools of Chemical Engineering*. Unpublished Doctoral Thesis. The University of Queensland, Australia. Retrieved from https://espace.library.uq.edu.au

Ulicna, D. Messerer, K. L. & Auzinger, M. (2016). *Study on higher vocational education and training in the EU*. Luxembourg: Publications office of the European Union.

Van der Bijl, A. & Taylor, V. (2016). Nature and dynamics of industry-based workplace learning for South African TVET lecturers. *Industry & Higher Education, 30*(2), 99-108. doi: 10.5367/ihe.2016.0297

Van der Bijl, A. & Taylor, V. (2018). Work-integrated learning for TVET lecturers: Articulating industry and college practices. *Journal of Vocational, Adult and Continuing Education and Training, 1*(1), 126-145.

Vygotsky, L. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wedekind, V. (2016). Technical and vocational education and training (TVET) reform in South Africa: Implications for college lecturers, context and background. *South African Qualification Authority (SAQA) Bulletin, 15*(1), 1-29.

Wilson, V. (2014). Examining teacher education through cultural-historical activity theory. *Teacher Education Advancement Network Journal, 6*(1), 20-29.

Young, M. (2006). FET College teachers: A knowledge-based profession of the future. *Perspectives in Education, 24*(3), 153-160.