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Editor**

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**International Journal of Vocational
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Table of Contents

Articles

The Meaning and Role of Entrepreneurship Education for Students in the Global Economy <i>Christina Wai Mui Yu</i>	7
Skills and Competencies Needed for Future Employees: A Case Study of Finnish Export Industries <i>Pentti Suursalmi</i>	20
The Status Quo, Issues and Strategies for TVET Teacher Education in China <i>Min Jia and Robert Norton</i>	30
Assessing the Role of Public Relations in Internationalization of TVET: A Case of the Sub Saharan Africa <i>Lewis Msasa</i>	50
Empowering Communities through International TVET Networking and Collaborations <i>Ismeli Tagicakiverata</i>	65
An Analysis of Issues in Automobile Mechanics' Workplaces in Nigeria <i>James F. Maigida and Abutu Francis</i>	78
Making the Case for Structured Professional Development: Will It Positively Impact Student Outcomes at the Post-Secondary Level? <i>John S. Gaal</i>	93
Publication Guidelines	105

As a refereed journal, the *International Journal of Vocational Education and Training* depends on qualified individuals to serve as manuscript reviewers. We send feature article manuscripts to three reviewers. So as not to overwork our reviewers, we need some of you to join us for a one-year term.

If you have a record of publications, research experience, and an interest in gaining additional practice in the use of the Publication Manual of the American Psychological Association, please email your vita to Dr. Davison M. Mupinga at dmupinga@kent.edu.

Message From the Editor

These days, there are many large and small companies doing business across the geographic borders. To carry out their daily operations these companies need employees who possess different skills—they need employees who can function in a global workplace. This challenge has necessitated a re-examination of the role of technical and vocational education and training (TVET) in meeting the needs of global economies. As a result, there have been numerous new TVET programs and changes to policies and implementation practices. Another global challenge facing TVET is the push from mundane and routine skills, to being innovative in solving community problems (Wagner, 2012). Yes, it is important for TVET students to follow directions in service manuals or cook books but wouldn't it be equally important for them to come up with innovative ideas to solve community problems related to their areas of study? If creativity and innovation are skill sets which employers consider essential for tomorrow's workplace, then TVET should find ways of teaching these skills. There are numerous examples of innovations in TVET throughout the world showing TVET placing emphasis on problem solving and innovation—we would love to hear about the success stories. One of the forthcoming *IJVET* issues will focus on innovations in TVET.

This issue of *IJVET* is comprised of papers selected by a Scientific Committee and presented at the IVETA International Conference, in Helsinki, Finland and St. Petersburg, Russia, August 19 – 24, 2014. Like other past *IJVET* issues, this issue continues to touch on timely and relevant TVET issues which include: i) role of entrepreneurship education in the preparation of students for global economies; ii) skills and competencies needed for future employees; iii) status of TVET teacher education and training in China; iv) role of public relations in making TVET attractive; v) innovative TVET programs; vi) current practices in automobile workplaces; and vii) the impact of structured professional development on student outcomes.

Once again, readers are reminded that articles published in *IJVET* come from all over the world and as such some authors do not speak English as their first language. While great care has been taken to correct the verbiage, there may be some errors that went unnoticed. My sincere thanks to the Scientific Committee—who selected the articles, authors, and the editorial staff who worked tirelessly to produce this *IJVET* issue. Please note that the articles in this journal do not reflect the position of the journal's editorial staff, reviewers, or policy of IVETA.

DAVISON M. MUPINGA
IJVET Editor

The Meaning and Role of Entrepreneurship Education for School Students in the Global Economy

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Abstract

This paper aims to clarify the meaning and role of entrepreneurship education (EE) from a competence-based perspective in order to prepare school students to work and live better in the global economy. After a critical review on entrepreneurship and EE, it was found that there is a shift from a narrow business-oriented process to a generic competence-driven process in defining entrepreneurship. The ultimate roles and goals of EE for school students cover both the possession of (1) entrepreneurship for self-employment and economic growth, and (2) enterprising skills for individual life growth. More importantly, on top of the traditional entrepreneurial competencies and capabilities, both ethical and social competencies are suggested in EE in order to balance individual and public interest.

Key Words: Entrepreneurship Education, Enterprise Education, Entrepreneurial Competencies/Capacities, School Students, Global Economy

Introduction

Entrepreneurship Education (EE) has drawn an increasing interest and made remarkable progress to become a field of academic study over the past four decades (Garaven & O’Cineide, 1994; Gibb, 1993 & 2011; Hytti & O’Gorman, 2004; Jamieson, 1984; Mwasalwiba, 2010; Pittaway & Cope, 2007; Vesper & Gartner, 1997). EE stakeholders believe that learners are able to cope with challenging jobs or start new business ventures (self-employment) after receiving EE (Gibb, 1993; Hytti & O’Gorman, 2004; Jack & Anderson, 1999). Policy-makers can then release their burdens on meeting the needs in job market and economic development (Kirby, 2004; Matley, 2005; McKeown, Millman,

Sursani, Smith & Martin, 2006; McMullan & Long, 1987; Rae, 2010). Moreover, academicians are more motivated to invent programs and activities for the building of an enterprising society (Mwasalwiba, 2010). Therefore, EE is one of the possible key drivers of sustained social development and economic recovery, which draws an increasing interest from multi-stakeholders in public, private, academia and non-profit sectors (Volkman et al., 2009).

The current movement of EE is becoming 'a mainstream education component' across disciplines at university and school levels in many countries (Cherwitz & Sullivan, 2002; Gibb, 2011; McLarty, Highley & Alderson, 2010; Volkman et al., 2009). For example, many entrepreneurship incubation centres are being set up at universities (European Commission, 2008) and EE is a key consensus area for development in Asia-Pacific countries (United Nations Educational, Science and Cultural Organisation, Asia-Pacific Programme of Educational Innovation for Development, 2013). EE appeals to all students no matter what career paths they will have (European Commission, 2008; Gibb, 2002, 2007 & 2011; McLarty, Highley & Alderson, 2010).

However, EE is facing many challenges including a confusion of the definition, and a lack of evidence and empirical study on its impacts on transforming the graduates to be entrepreneurs, despite EE has impacted graduates' intentionality. Moreover, at policy making level, there is no concrete policy on how to spread EE to mainstream education, even though EE is said to be needed by all students. Gibb (2011) also highlighted some other challenges EE has had such as the intra-disciplinary challenge, assessment, and strategic and operational capacity building. Yu (2013) shared strategies for capacity building to advance EE at individual, institutional and societal levels. Amongst the existing challenges in EE, clarifying the meaning and role of EE for implementation is most crucial since different understandings of EE would lead to different objectives, contents, target audiences, teaching methods, assessment indicators and resource implications (Mwasalwiba, 2010). For example, EE is mainly understood as a promising way to lower unemployment rate in Mainland China when it faces more than one million of college graduates each year. Differently, some western countries may view EE as an individual empowerment to meet the ever-changing needs of employment and life. In such a way, the purpose of EE can range from covering either a narrow focus on business venturing (Volkman et al., 2009) or a wide range of enterprising 'soft' skills (Davies, 2002).

Therefore, in this paper, a literature review on the meaning of entrepreneurship and EE as well as a discussion on the significant role of EE to today's school students will be critically shown in the first three sessions. Afterwards, a detailed review and discussion on the entrepreneurial competencies and capabilities for school students, including those traditional and neglected ones

will be presented. Finally, the acquisition of entrepreneurial competencies and capacities will be proposed.

Entrepreneurship

Scheumpeter (1934) suggested a classical function which constitutes entrepreneurship concept as 'innovation' – carrying out changes through creation of new products, new production methods, new markets and new forms of organization. Wealth is then created when such innovation exists. Furthermore, Drucker (2006) claimed that true entrepreneurs seek to minimize risk and exploit change to achieve purposeful innovation. Entrepreneurship is therefore a process which involves the creation of an innovative economic organization for the purpose of gain or growth under condition of risk and uncertainty (Dollinger, 2001). Entrepreneurship refers to business-oriented activities that closely relates to the intersections of *creativity, innovation, management, opportunity seeking, risk taking and striking for growth* (Vanderwerf & Brush, 1989).

However, Shefsky refers to entrepreneur as someone who is able to identify opportunity, take up the opportunity in time and manage the opportunity to function as a success (Singer, 1995). It symbolises that an entrepreneur is not necessarily referring to someone who is associated with business, but could also be referring to those who possess enterprising attributes to set up and run a specific task because their psychological characteristics are basically identical (Caird & Johnson, 1988; Gibb, 1987). Hence, the Commission of the European Communities (CEC 2005, p. 4) defined entrepreneurship as:

... an individual's ability to turn ideas into action. It includes creativity, innovation and risk taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports everyone in day-to-day life at home and in society, makes employees more aware of the context of their work and better able to seize opportunities, and provides a foundation for entrepreneurs establishing a social or commercial activity.

According to the definition of entrepreneurship given by CEC (2005), entrepreneurship no longer refers to business-oriented activities solely but also to individual's ability of actualizing his/her own idea through the same crossings of *creativity, innovation, risk taking, management, opportunity seeking and striking for sustainable development in different aspects of life*. As can be seen, there is a shift from a narrow business-oriented process for economic growth to a generic competence-driven process for individual growth in defining entrepreneurship. Such a shift not only draws a significant impact on understanding the nature and use of entrepreneurship, but also on EE.

Entrepreneurship Education (EE)

The terms ‘entrepreneurship education’ and ‘enterprise education’ are used interchangeably to describe EE in a wide range of programs, courses and or initiatives found at varied educational levels. Gibb (1993) has stated that the two terms are conceptually identical but contextually different. Garavan and O’Cinneide (1994) have further distinguished the two, explaining that entrepreneurship education aims to create an attitude of self-reliance, while enterprise education seeks to create opportunity-seeking individuals. In fact, no matter what exactly the terms is used, EE covers the aspects of both entrepreneurship and enterprising behaviour (Seikkula-Leino, Ruskovaara, Ika-valko, Mattila, & Rytkola, 2010). Moreover, EE not only applies to business ventures but also more broadly to life (Bridge, Hegarty, & Porter, 2010; Gibb, 2011). Many authors have suggested that entrepreneurship education which is more economic focused, fits advanced students in university, while enterprise education which is more generic in nature, suits younger students in basic schooling (e.g., Jones & Iredale, 2010; Leffler, 2009; Pepin, 2012). Schools and universities should prepare young people to work in a dynamic, rapidly changing entrepreneurial and global environment. Therefore, providing an analytical perspective on the meaning and role of EE for school students in the global economy context is needed.

Role of EE to School Students

Education systems have traditionally focused on providing basic skills and ensuring individuals can secure future jobs. Meanwhile globalization has changed the nature of work, including (1) the relocation of offices, factories and staff to countries where operation costs are cheaper, (2) the rapid technological development towards labour-saving production and business processes, (3) the lower cost of travel to encourage job mobility and (4) an advent of “virtual” companies outsourced to freelancers or offshore workers (Fien, Maclean & Park, 2009; Velde, 2009). Amidst highly uncertain economic and labour market conditions, employers are likely to be cautious and hesitant about expanding their enterprises and hiring new employees, particularly inexperienced school students. Even when school students have a more stable and secured job, they may only be able to barely sustain their living and even live in poor households. The rise of in-work poverty comes to be the most dramatic outcomes in industrialized countries over the past 30 years due to globalization and technological advancements (Hellier & Chusseau, 2013). Under such circumstances, traditional education seems no longer able to help employment and poverty in today’s global economy. Contrastingly, EE is in-

tended to develop a culture of enterprise among a younger generation within the society that emphasizes on the value of competitiveness, innovation and creativity (Robertson & Collins, 2003). EE can play a significant role in empowering school students to possess entrepreneurial competencies and capabilities to meet challenges in employment and or self-employment. Of course, life planning education and career counselling should go alongside with EE through a concerted effort of stakeholders in the community too.

Moreover, investment in human capital not only enables individuals to increase their future earnings and enhance their experience in the labour market, but also enables individuals to become better citizens on top of being better workers (Lister, 2003). Schools should strive to make students become knowledgeable about contemporary issues, be able to work independently and collaborate with others, and possess personal dispositions that value cultural diversity (Learning & Teaching Scotland, 2002). They are critical for school students to become active citizens regardless of the economic background they have had and the career path they are to take (Deuchar, 2008). For example, those individuals who are in poverty could be empowered by EE to regain their economic and social dignity; while those individuals who are rich could be educated by EE to see how they can enjoy their life uniquely through self-employment. If every individual respects and cares about others as well as the global issues, a more enjoyable life is achievable for everyone. Erkkila (2000), on her comparative study between United States, United Kingdom and Finland, suggested that the belief of having both societal and individual improvements always supports the provision of EE.

There are two main features of EE to school students: (1) developing those personal attributes and transferable generic skills that form the basis of an entrepreneurial mind-set and behaviour; (b) raising learners' awareness of self-employment and entrepreneurship as possible career options (European Commission, 2009). These understandings incorporate both the know-how and know-why knowledge and skills as well as an emphasis on the learning process of entrepreneurship. However, the achievement of EE depends very much on what entrepreneurial competencies and capabilities are identified for the learning process.

Entrepreneurial Competencies and Capabilities for School Students

Entrepreneurs need both entrepreneurial and managerial competencies to support the different stages and contexts of business growth (Capaldo, Iandoli & Ponsiglione, 2004; Hayton & McEvoy, 2006). Entrepreneurial competence, therefore, encompasses not only behavioural competence (knowledge

of how to behave) but also cognitive competence (work-related knowledge and understanding) and functional competence (job-related skills, know-how) (Delamare Le Deist & Winterton, 2005; Lans, Hulsink, Baert & Mulder, 2008). Moreover, competence-related motivational attitudes like self-efficacy and self-confidence should be regarded as important conditions for entrepreneurial competence (Lans et al., 2008). Indeed, many authors have agreed on such an integrated view of competence in entrepreneurship (e.g. Hayton & Kelley, 2006; Markman, 2007).

Lum (2009) further noted that the possession of skills and competencies can lead learners to underestimate the capacities required in the real world, necessitating that broader and more concrete learning content should be provided to them. Hence, developing individuals' capacity of knowing how to seek for opportunities (Baron & Ensley, 2006), that is 'be enterprising' (enterprise capacity), may be more important particularly in view of the need to meet the ever-changing demands through lifelong learning in today's knowledge-based society. The European Commission (2006) named such enterprise capabilities as 'new basic skills' for school students in order to improve international competitiveness. Mclarty, Highley and Alderson (2010, p. 33) echoed and defined enterprise capability in this way: *'Enterprise capability [includes] innovation, creativity, risk-management and risk-taking, a can-do attitude and the drive to make things happen'*. This concept of enterprise capability provides a clear guidance for the nurturing of active citizens to enable them to develop a mind-set of 'you can if you want to' (Mclarty, Highley & Alderson, 2010). Perhaps EE can indeed give school students courage to strive for excellence in their pursuit of dreams with a highly optimistic attitude. However, it may also possibly encourage young people to do whatever they want without a concern of others. 'Be considerate before you act' and "you can if you want" should go hand-in-hand in developing an enterprising mind-set for school students.

Pepin (2012) pointed out that there are some negative effects of entrepreneurship on school students such as individualism, marginality or difficulty dealing with authority, which have been inadequately addressed in education. Also, Caird (1990) indicated that the strong motivation of entrepreneurs is governed by a high need for achievement, power and autonomy, and a low need for affiliation. It is reasonable to expect that entrepreneurs who have confidence in their ability to control the events would be more motivated to actively seek new business opportunities (Lee & Tsang, 2001). Hence, in reality, it is quite true that most entrepreneurs work in isolation, which may easily lead them unwilling to listen to others and act opportunistically and ruthlessly in their will to succeed. An emphasis of opportunity seeking may possibly lead someone to become an opportunist without a proper concern of others. Hence, it is necessary to seek for a balance between the individual and

societal interests in the provision of EE in order to protect and nurture school students in a healthy and positive development. Therefore, ethical and social competencies and capabilities are called upon in EE.

The Need of Ethical and Social Competence in EE

Ethical competence refers to the possession of certain personal and professional values that can underpin the moral reasoning, decision making and action taking on specific events (CEC, 2005). Yu and Man (2009) found that the desirability for entrepreneurship lies in an attitudinal change in entrepreneurial characteristics, where more in-depth conceptual understanding of entrepreneurship is recommended. To strengthen individual participants' conceptual understanding of entrepreneurship and attitudinal change, the advancement of individual character building can be viewed as a condition for enabling individuals to engage in the 'process of learning and adapting to change' properly. As such, displaying an understanding of the importance of cultivating strong ethical character development through the business-running (learning) process of entrepreneurship is crucial.

In defining key competence for all students, Kennedy (2005) pointed out that key competence should include the full range of skills and competencies relevant to one's life span instead of employment solely. Education should enable young people to become local and global citizens. Self-interest particularly takes priority in an individuals' life in today's increasingly fragmented world, however it does not mean that we can ignore needs of others and do whatever we want from local and/or global citizenship points of view (Kennedy, 2005). In response to the breakdown of social principles, values and political engagement among young people, there has been a renewed interest in promoting ethics and moral education in citizenship (Deuchar, 2006). According to Kennedy (2005, p. 44), "*Young citizens must first be taught to value values*"; it is not to indoctrinate but to allow young local and global citizens to distinguish between right and wrong, to recognize it in the behaviour of others and to take appropriate action, although it may not be easy to find a common value in the 21st century. In order to protect young people from over-dressed individualism, we need to educate them in striking a good balance between personal and common interest in decision makings throughout their life. EE possibly provides a platform to help young people to value values as a central part of the life experience. Deuchar (2006 & 2007) explored the views of teachers and students on enterprise and citizenship education in ten primary schools and seven secondary schools in Scotland and found that teachers and students were increasingly focused more on "enterprise" as being framed upon a model of social renewal and civic responsibility within a global and moral

framework. The teachers recognised the need for rights as well as responsibilities, ambition as well as tolerance and wealth creation as well as charity in carrying out EE (Deuchar, 2007).

Furthermore, in order to address the societal needs in business running instead of profit-making solely, social responsibility should be highly emphasised in EE for school students since democratic citizenship is not only about benefits but also responsibilities. The purpose of running a business is to benefit not only the individual but also society. It is important to lead school students to engage in a wider learning context of social interaction and help them to become more aware of other's concerns and to better understand the world around them. This enables school students to address and respond to the public concerns more. Enabling young people to work on social entrepreneurship is a possible way to strike a balance between individual and collective needs. Social entrepreneurship in here is defined as a business set up to benefit society (someone who is enterprising to benefit society) (Young, 1983). For example, in Quebec, Canada, school entrepreneurial activities must stem from and cater for the needs of the local community (Pelletier, 2007). School students should be provided with relevant concepts and knowledge on social responsibility, and be guided to create some sort of action taken to demonstrate their concern for social responsibility. For instance, school students may also consider producing some products and donating a certain percent of their total profit (if any was made) to a chosen minority or social enterprise. Deuchar (2008, p. 30) pointed out that one of the key performance indicators of enterprise and citizenship education is when school students are able to view enterprise in a social sense and enterprising individuals as someone not limited in business or academic success but "*anyone who could be enterprising in their response to community issues if they believed in the need for justice, truth and honesty*". In fact, social interaction with various parties plays a significant role in the learning process of EE (Yu & Man, 2009). Thus, promoting social interaction and collaboration with various stakeholders to sustain individual and collective development in EE is highly desirable.

Acquisition of Entrepreneurial Competencies and Capabilities

Sandberg (1994) argued that competence is constituted by a worker's understanding of work by drawing on his interpretative findings. Gerber and Velde (1996) further highlighted the relational aspect in understanding competence. Both context and work relationships play a role in the embedding of competence. These arguments shift the concept of competence from a narrow to a broader view that draws on three significant implications: first, learner is the

departure point for the acquisition of competence instead of the competencies themselves; second, competence is better described as a combination of core components that are interdependent; third, competence needs to be developed through the enrichment of practical experience that benefits learners' holistic development. Also, the acquisition of competence is subject to the context, the situation and the experience of the individual who works. Entrepreneurship depends upon generic forms of understanding, which require theory be put into real practice in shifting its focus from venture creation to the seeking of opportunities and innovation (Lans et al., 2008). In such a way, EE is no longer able to teach knowledge and skills without a consideration of their transferability across contexts and situations.

Hence, any entrepreneurship program should be led by 'creativity, informality, curiosity, emotion and its application to personal and real-world problems and opportunities' (Penaluna & Penaluna, 2008) that takes place outside of a formal classroom setting. Moreover, entrepreneurship programs need to incorporate active learning elements such as business simulation, workshops, counselling and mentoring, study visits, business set-ups, games and competitions (Hytti & O'Gorman, 2004). Lewis and Massey (2003) and Jones (2010) have also argued that student-centred learning should form the basis of any entrepreneurship program, with students acting as agents who are able to learn and apply their knowledge onto other contexts. EE also depends on hands-on practice and social interaction with others, such as entrepreneurs, throughout the learning process (Man & Yu, 2007; Yu & Man, 2009). An ecosystem for possible collaboration amongst business, education and community sectors needs to be built up for enhancing the effectiveness of EE too.

More importantly, in-depth reflection throughout the process of entrepreneurship learning should be emphasized (Pepin, 2012) because reflection is a pre-condition in becoming aware of the lack of competence (Korthager 1999, p. 192). Furthermore, the development of the necessary and appropriate type of entrepreneurial competencies and capacities requires a long-term and comprehensive transformation of education systems and practices at all levels. Relevant changes in policy, curriculum development, teaching and learning, assessment, teacher education, career counselling, work-based projects and internships are considered necessary.

Conclusion and Recommendations

The definition of entrepreneurship shifts from a narrow business-oriented process for economic growth to a generic competence-driven process for individual growth, which draws a significant impact on EE for school students - a learning process for a possession of entrepreneurship for employment as an

option and enterprising skills for life. Young people are facing huge challenges in the global economy, EE instils an entrepreneurial spirit to young people and plays a key role in empowering them to survive better in the future regardless of the career and life path to be taken. Hence, entrepreneurial competencies and capabilities are suggested to be embedded in the education system as 'essential and/or core' elements. In order to create a more harmonious global community for the future, ethical and social competence also need to be emphasized in EE. Cultivating school students to value values, build ethical character, balance self and public interest, take up social responsibility, interact and collaborate with different people through authentic learning process are strongly recommended. Finally, more thorough studies on policy making and implementation of EE at all school levels are needed.

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Skills and Competences Needed for the Future Export Industry: A Case Study of Finnish Export Industry

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Abstract

The skills and competencies needed in future working life have been a subject discussed a lot during the last year. The beginning of this article gives some background on how vocational education and training curriculums are built up. The representatives of working life have an important role in this process which is discussed next. After this, the article deals with teaching methods and independence of educational providers in the Finnish system. Extensive on-the-job learning as part of studies is the Finnish way to operate together with working life. The last sections describe how vocational schools effectively operate together with small and large size enterprises. Also discussed is an example of a successful project aimed at creating management skills.

Key Words: Curriculum, on-the-job-learning, skill, competence, working life.

The Finnish National Core Curricula

The Finnish vocational education and training curriculum system consists of the National Core Curricula, each education provider's locally approved curricula, and the students' personal study plans. Every student has their own study plan. The Finnish National Board of Education (NBE) decides on the National Core Curriculum for each vocational qualification, determining the composition of studies and objectives, core contents and assessment criteria for study modules. It also includes provisions on student assessment, guidance counselling, on-the-job learning, and special education and training. The content of the education provider's local curricula is also defined in the National Core Curricula. The National Core Curricula constitute a legal norm for educational institutions. The purposes of the core curricula are: 1) to reflect the objectives of education policy, 2) to determine the requirements for nationally

uniform vocational competence as well as 3) to determine students' learning capability and capability to function as a citizen. The core curricula must also function as a basis for evaluation of national learning outcomes (EACEA/Eurydice/Eurypedia, 2014).

Co-operation with other Agencies

The National Core Curricula are drawn up by the Finnish National Board of Education in co-operation with employers' organizations, trade unions, the Trade Union of Education and student unions. They are dealt with by Education and Training Committees, which are tripartite bodies established for each occupational field by the Ministry of Education and Culture for a term of three years at a time to plan and develop vocational education and training. Local curricula and students' individual study plans must follow the relevant National Core Curriculum. Local tripartite bodies as well as other representatives of the world of work take part in the curriculum work as advisers and consultants. Local curricula are approved by the boards of education providers (EACEA/Eurydice/Eurypedia, 2014).

The Finnish National Board of Education has revised all national requirements of vocational qualifications which have been in effect since August 2010. There are 52 upper secondary vocational qualifications making up a total of 120 different study programs (e.g., Finnish National Board of Education Regulation 22/011/2009). The revision includes the structure of the requirements, the organization of studies, the skill requirements as well as the targets and criteria of assessment. For example, the revised curricula stresses, that students should acquire skills which can be utilized in different fields and transferred from occupation to occupation; skills should serve labour market needs but also promote lifelong learning. The study modules should also be flexible and there should be a possibility for various combinations. The revision takes immigrants and students with disabilities into account. Vocational education and training (VET) must offer a broad basis of skills to the students, enabling them to work in varying tasks. These skills should also be such that they can be transferred from one workplace to another and form a basis for lifelong learning. Upper secondary qualifications are developed so that they flexibly support the transition to the labour market and improve the updating of the skills of the adult population. The flexibility of the vocational qualifications is further enhanced by increasing opportunities to choose elements from other programs. Each National Core Curriculum is drawn up in such a manner that the qualification will provide extensive basic vocational skills for the various assignments in the field and more specialized competence and the vocational skills required by working life in one sector of the qualification (study program). The vocational skills are

defined as functional areas in working life. In order to respond to the changing requirements of the working life, the flexibility of vocational qualifications has been further increased by, for example, diversifying opportunities to include modules from other vocational qualifications (including further vocational qualifications and specialist vocational qualifications) or polytechnic degrees. The goal is to increase flexibility – this will allow students to create individual learning paths and to increase students' motivation for completing their studies. Furthermore, it is meant to give education providers an opportunity to meet the demands of the regional and local working life more effectively. Prior learning acquired in training, working life or other learning environments has to be recognized as part of the qualification (EACEA/Eurydice/Eurypedia, 2014).

The National Core Curricula governing different upper secondary vocational qualifications determine the key lifelong learning skills, learning and problem-solving, interaction and co-operation, vocational ethics, health, safety and ability to function, initiative and entrepreneurship, sustainable development, aesthetics, communication and media skills, mathematics and natural sciences, technology and information technology as well as active citizenship and different cultures. The European Parliament and the Commission have made the recommendation 2006/962/EY. The whole Europe has 8 competencies we know as key competencies for lifelong learning. The Finnish National Board of Education has made (a) Finnish version of those competences (LLL). We have 11 different LLL competencies in all our 52 vocational qualifications (example regulation 22/011/2009).

The education includes a period of on-the-job learning, during which students familiarize themselves with practical assignments required in the occupation and achieve the core objectives of the occupation as laid down in the curriculum. All upper secondary vocational qualifications include a period of on-the-job learning with a minimum scope of 20 weeks, normally periods are from 20 to 40 weeks long. One of the aims of on-the-job learning is to enhance young people's employment opportunities (EACEA/Eurydice/Eurypedia, 2014).

Student Assessment, Vocational School-based Education and Training

Vocational skills demonstrations were introduced as a way of assessment as from August 2006 and they mostly take place during periods of on-the-job learning. In vocational qualification modules, competence is assessed by means of vocational skills demonstrations, which entail performing work assignments relevant to the vocational skills requirements in the most authentic settings possible. Where necessary, other assessment methods are used to sup-

plement vocational skills demonstrations. Skills demonstrations are designed, implemented and assessed in co-operation with representatives of working life. Assessment is conducted by the teachers and, for on-the-job learning periods and vocational skills demonstrations, the teacher in charge of the period or demonstration together with the on-the-job instructor, workplace instructor appointed by the employer or the demonstration supervisor. The assessment must guide and motivate the students as well as develop their abilities in self-assessment. Students' learning and competence are always assessed in terms of the vocational skills requirements and assessment criteria determined within the relevant National Core Curriculum (EACEA/Eurydice/Eurypedia, 2014). Once students have completed all modules included in a qualification to an acceptable standard, they receive a qualification certificate, which consists of a vocational upper secondary certificate and a certificate of skills demonstrations. The certificate of skills demonstrations includes information on the vocational skills demonstrations taken and the grades awarded for these, while the vocational upper secondary certificate covers the qualification modules and their grades (EACEA/Eurydice/Eurypedia, 2014).

Teaching Methods and Materials, Vocational School-based Education and Training

The method of instruction is not regulated. The education provider may have their own recommendations for the teachers but normally teachers themselves may choose the methods that they apply in order to achieve the objectives defined in the local curriculum. At present, the emphasis is on student-centered working methods, development of students' own initiative and entrepreneurship (workshop working), promoting the students' sense of responsibility and the importance of learning to learn skills. Key factors include flexible teaching arrangements, a wide range of working methods and teaching which is not tied to year classes, integration of theory and practice as well as co-operation and interaction between institutions and workplaces in the planning and implementation of instruction. In order to integrate instruction into larger modules, it is possible to use methods of joint teaching and project work (house building), which bring together the objectives of several study modules (EACEA/Eurydice/Eurypedia, 2014). In addition, e-learning is a priority area in development of new teaching methods. All these mentioned targets are easy to implement in Finland since education providers are independent and the schools can use their own workshops in the way companies do. It's allowed, for example, to repair cars, build houses or organize restaurant services.

On-the-job learning is a learning method based on the objectives of the curriculum. It aims to take the needs of both the student and the workplace into

account as broadly as possible. The student can establish personal contacts with real work and, correspondingly, the workplace gets the opportunity to have an effect on education and training and, in due time, gains employees who are better prepared for practical work than before. The aim is to ensure vocational skills that stem from working life needs and to promote students' employment opportunities, as well as to facilitate the recruitment of skilled labour into enterprises and other workplaces (EACEA/Eurydice/Eurypedia, 2014).

How 7 an TVET 7 ontribute to 5 cquiring Hhose Gkills and 7 ompetences?

In Finland the export industry is very important for the national economy. The confederation of Finnish Industries together with its member associations, Chemical Industry Federation of Finland, Finnish Forest Industries Federation and Technology Industries of Finland negotiated with the Ministry of Education and Culture means for improving vocational education and training of these sectors. After the negotiations, the National Board of Education (NBE) got extra funding for starting projects to create new concrete ways to help Finnish export industry to manage better in the future (NBE, 2014).

Porvoo Vocational College (Amisto) was one of the vocational organizations taking part in this work. Our focus is to work together with local companies who represent export industry in our area: East Uusimaa. Our project partners are working in oil, metal, ventilation systems, automation and building technique sectors.

We have discussed with all our partners and we have also had one meeting together. We are trying to establish which skills and competencies workers need in each company to be able to manage better in their job in future. By now we have a list of ideas seen as important skills for the companies' workers. There are a lot of similarities mentioned earlier in the long introduction concerning Finnish Vocational Education and Training. If we think about this project from the vocational education and training point of view we have an excellent situation. The national board of Education is preparing the new National Core Curriculum at the same time. This helps us since we can use new draft versions together with our partners and also help NBE to make the core curriculum as good as possible for future use. I have worked with the National Core Curriculum very intensive during the last 15 years and the experience I have is that in my opinion we have the best core curriculum ever. As you can see from previous chapters, education providers are very independent and free to create their own local curriculums as far as they follow the norms. On the draft version there is more flexibility than earlier and the assessment of students gives teachers and representatives of working life new possibilities as

norms are not so regulated any more. New flexible tools help young students to pass education and get a certificate after it. This might look like a simple renewal but all things which minimize drop out are totally important in all sectors of Finnish vocational education and training.

Metal industry had been the backbone of the Finnish export industry for several decades and is still a very important part of our industry. Unfortunately, young people, students or applicants aren't so interested in that sector any more. We have a common challenge with our partner organizations in regard to getting more applicants to study programs and fewer drop outs. As mentioned earlier, as new tools we will have are the new excellent core curriculum.

Case One

Amisto's metalwork department is working very closely with a local company which manufactures tools and spare parts for a Finnish company specialized in mining extraction. The school has hired some of the company's premises and all study functions run inside the company. This is great opportunity for us to make our students individual study plans together with the company's staff members. The company is big enough to offer students different working possibilities in the company. This helps the students to see and understand skills and competencies needed for working with totally different equipment and in different environments. Flexibility and personal study programs have helped us to decrease the number of dropouts. NBE has statistics of dropouts in the metal sector in Finland, and we can be proud of our results as top one in the whole country. The students will pass the qualification and the company will have skillful workers for summer jobs and during on the job training period the students can specialize in the jobs where the company needs permanent work force, which is a win-win situation to both sides.

The largest industrial concentration of Nordic countries, the Finnish Oil Company, Neste Oil Oyj is situated in Amisto area and has many refunding unit on the area. The company has need for new workers every year and we try to help them to solve this problem together.

Case Two

Amisto has worked together with Neste Oil Oyj for at least 40 years. The results we have are quite good regardless of very tight rules Neste has in its own area. If the student is under 18 years old he/she is not allowed to work or even enter the process area of the company. This makes on-the-job learning impossible before this age. Another challenge we have is the content of the qualification which require high basic knowledge to succeed in it. Our applicants come from

comprehensive schools and we have a common interest together with Neste Oil Oyj to have good applicants to apply to our school for this specific qualification. Neste Oil Oyj has been very active and they have taken part to every marketing event we have had. The members of Neste Oil Oyj have given information of the company, working possibilities, salaries etc. Our marketing people, in turn, have given general information about studies in our school. Working together both sides win. Amisto will get motivated students and the company will have skillful and competent future workers. After active work together the results were top class this year. Amisto got more applicants to qualification in process technology than any other vocational school in the whole country.

Export Industry Project

We have started the project together with companies and the plan is to continue these meetings 4-5 times. The main idea is to find out skills and competencies needed in working life up to 2060's. It isn't an easy job to find those and after finding them to turn them into practice. We have a lot of knowledge and experience on both sides. No-one can solve these on their own, they are our common challenge and we can accomplish it by working together with open eyes and minds. A common interest makes this work interesting and we have a couple extra partners from universities who have a lot of different knowledge to help us in our case. Almost every company working with us in this project are international and they can use the experience they have got abroad working in the field of vocational education and training. We have also lots of international partners who can help us in this project.

How does work look like in the future? This has been a subject discussed a lot during the last years. What are the occupations that stay and which will disappear? The discussion on the matter has been very visible in Finland for some years already. Future professions and occupations have been brought forth in an imposing manner. The subject matter has been studied in Finland by the Finnish Parliament's Committee for the Future that ordered a study about future technologies. The latest addition is the Finnish vision on future professions (ETLA, Computerization Threatens One Third of Finnish Employment). In addition to these, a lot of related research been done about the matter on a global level. How deep into these research ideas do we like to dive? I have read the results and made some mind storming around the ideas. New technology evidently needs new thinking and new competences. An advertisement where we can see the words "New thinking new possibilities", it's true. If we compare those words with the context where we are working, we can ask ourselves what really is important. We have to look at these things from three different directions: students, teachers and companies. I believe everyone has

their own interests and dreams and our work is to try to find a way to put them together or at least as near each other as possible.

Research Methodology

During our first meeting with the representatives of working life we used the core competence tree model as a tool. By using this tool we can figure out the needed competences and skills important for working life. The core competence tree has four different parts, roots, body, branches and fruits. The roots show knowledge areas, the body is equal to core competence, the branches show us business activities and the fruits are the products or services offered by the company (Meristö, 2014).

At the beginning of the meeting we divided the members (teachers and partners) into groups based on the line of activities. Every group used the core competence tree model of their own and tried to find out what kind of roots are important for their sector. The roots that represent knowledge areas are divided into three parts. The parts are knowledge and skills, values and attitudes, experience, and contact information. The first meeting and the new model with a short introduction period wasn't too easy a start but it worked anyway, and the groups got good results. We had metalwork, processing and maintenance groups. If we compare the results we can see some differences between them. All groups expect good basic knowledge and both technical and other skills, language skills, creative thinking skills, team work skills and ability to reform. Under second root every group had similarities: the worker's motivation and attitude ought to be good, safety and flexibility were also important factors. The last root experience and contact information was the most difficult one. This is understandable as young people don't have so much they can give in this respect (Meristö, 2014).

The project has got a good start and we have to analyze the basic results before the next meeting. The situation is good: NBE is working with the new National Core Curriculum and we can use draft versions of them with these results. The start went well and work goes on toward big challenges but we'll figure them out. The representatives of working life have given us important information we can use when we create new local curriculum for export industry in our area.

Conclusion

In principle, the quality of Finnish vocational education and training is very high. The NBE is working with the new National Core Curriculum that all education providers will start to use in August 2015. The project helps us to create our own local curriculum at the same time and gives us very important

information concerning the expectations working life has. This cooperation between education providers and working life also in local level is one of factors that is helping us to keep the quality of Finnish vocational education and training as high as possible. In the previous chapter I mentioned the big challenges we will face the whole structure of the National Core Curriculum will change totally (NBE 2014). At the moment we have divided our qualifications into smaller parts, we speak about credits similar to weeks. One credit is equal to one week (40 hours of work). At the beginning of August 2015 we will start to use a new core curriculum with learning points. The change looks simple but I think it will be much more complicated than we can imagine at the moment. The basis for assessing the student will be the level of his/hers skills and competencies, not the time they spend studying something. The biggest change will have to happen in our thinking that the students are able to learn also outside of the school and we have to take care of recognizing the skills and competencies the students possess. After recognition we will make validation of them as part of student assessment. In school we have to change our attitude, be more opening minded and accept this as a part of our education structure.

The new structure means more personal study programs for the students and flexibility to vocational education and training in future. From the students' point of view the system will be better and I believe their motivation will increase and the number of dropouts will decrease. Also students can pass their studies faster and can be employed or continue their studies e.g. in universities earlier. Every coin has two sides- teachers' work will also change and I believe they will be more mentors than teachers in the future. One main target the Ministry of Education and Culture has is to enlarge cooperation with working life and move vocational education and training to working places. These changes point out the teacher's role more as a mentor than teacher (Ruohotie, 2012).

In Finland the vocational education and training will go to a better direction and it means that all of us working in this sector have to be more open minded and creative when putting the new National Core Curriculum in practice in the local level together with working life surrounding us. Amisto has some extra funding for this work which helps us and we know NBE and Confederation of Finnish Industries together its member associations expect results from us very quickly. We will have some results during this year but to achieve this change totally needs more time. More discussions with working life help us to find suitable solutions at a local level.

Tight and long term cooperation with working life is a key factor for developing vocational education and training as you can see, for example, in the description of cases 1 and 2. Vocational education and training of good quality is the only way to acquire skills and competences needed in future working life.

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The Status Quo, Issues and Strategies for TVET Teacher Education in China

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Abstract

Technical and Vocational Education and Training (TVET) is a vital component of education in China. In spite of the great achievements it has gained, education quality is still the prominent challenge, which is to a great extent influenced by the quality of TVET teachers. This paper presents the status quo of TVET teacher education and training in China from the aspects of educational institutions and professional development pathways. Then, it examines the challenges facing TVET teacher education and training system and provides the reason analysis. In order to address the significant problems of the shortage and low-quality of TVET teachers, a complete TVET teacher education and training institution system, an open and diversified TVET teacher team system, and administration system reformation will be needed.

Keywords: TVET teacher, teacher education and training, institution system, teacher team system, management system

Introduction

Since the 1980s, Technical and Vocational Education and Training (TVET) has expanded quickly, has made great achievements in China, and has acted as a mainstay in the education system. In order to improve the quality of TVET and solve the students' crisis brought on by the increasing enrollment of higher education in the mid-1990s, some TVET reforms including teacher education and training have been implemented. Three aspects deserve our attention: (1) formation of an education and training system, (2) establishment of an enterprise in-service teacher training system, and (3) development of fulfillment of

large-scale teacher training programs (Guo, 2011). What's the status quo of the TVET teacher education and training after the reform in the first decade of the 21st century? Considerable success has been gained. However, many challenges still exist. What are these challenges and the causes? Are there possible strategies to address them? This paper will examine TVET teacher education and training in China following the teacher professional development routes of pre-service education, orientation and in-service training.

Description of TVET Teacher Education in China

TVET teachers are different from general education teachers, so they should have their own independent education and training system and professional development pathways. A specific introduction of the education and training institutions and two different pathways follows.

The TVET teacher education and training institution system has gradually evolved over the past 30 years. In 1979, with reference to the general primary and secondary school teacher education and training pattern, the independent TVET teacher education institution -- vocational-technical teachers colleges were established in Tianjin and Jilin, and then more were built in the 1980s. Now there are eight vocational-technical teachers colleges in northwest, central, eastern and southern parts of China, which take on the task of providing TVET teacher education for in and around the area where they are located. Though they provide a great number of teachers, they still cannot meet the requirements of teachers in terms of quality and quantity needed, because of inadequate investment and fewer program offerings.

Thus in 1989, Tianjin University and Zhejiang University were approved by the State Education Commission to set up technical colleges; whose task is to train secondary vocational school principals, management cadres and teachers, develop training materials, and carry out vocational education research and information exchange. Later, more general universities and colleges became involved, by 2001 the number increased to 32 (Zhang, 2009).

In the mid-1990s, after the expansion and prosperity of almost fifteen years, TVET experienced a severe situation - - the number of students enrolled declined drastically and the scale shrunk due to the great expansion of higher education. How to improve education quality, especially teachers quality, to increase the attraction of TVET, became a major concern of the central government. It passed the regulation of *the State Education Commission's Opinion on Strengthening the Construction of Secondary Vocational School Teachers* in 1997. This regulation requires individual provinces to select some professional colleges focusing on science, engineering, agriculture, industry, medicine and others as TVET teacher education and training bases, and to set up a school

of vocational and technical education or offer vocational and technical education programs in these bases (State Education Commission, 1997). In addition, some enterprises were also appointed as TVET teacher practical skill training units to provide skill practice internships for pre-service teachers and skill update for in-service teachers. By now, a relatively complex TVET teacher education and training institution system has been established in China. Let's look at a further analysis from different angles.

First, TVET teacher education institutions usually provide four years of full-time preparation programs for future teachers. According to the statistics of 2001 (shown in Table 1), there are a total of 40 institutions of higher education assuming the responsibility of preparing teachers for vocational schools and technical colleges, including eight independent vocational-technical teachers colleges and thirty-two vocational-technical colleges or schools affiliated with universities or professional colleges (Zhang, 2003). The latter prepares the majority of TVET teachers, among which eleven are colleges affiliated with comprehensive universities, seven are colleges to general normal colleges, eight are schools to professional colleges, and six are other types. Specifically, the vocational-technical colleges affiliated with comprehensive universities account for 27.5%, and the schools affiliated with professional colleges tie for second place with vocational-technological teachers college at 20%.

Table 1. TVET teacher education institutions

Type	Number	Percentage
Vocational-technical Teachers College	8	20.00%
College affiliated to Comprehensive University	11	27.50%
College affiliated to Normal University	7	17.50%
School affiliated to Professional Colleges	8	20.00%
Others	6	15.00%
Total	40	100.00%

Note: Professional college here refers to colleges or universities that focus on a certain field, such as the institute of technology, agricultural university, university of finance and economics, university of science and technology, and university of communication.

Second, the national key vocational-technical training bases and professional skills training demonstration units provide short-time training service for in-service teachers. Since the 21st century, TVET in China stepped into the quality era. In order to address the issues of poor practical skills performance of TVET teachers, a number of vocational-technical training bases and professional skills training demonstration units have been successively established under the fund-

ing support of the central government. As shown in Table 2, by 2011, there were sixty national key vocational-technical training bases and eight professional skills training demonstration units to serve the on-the-job training needs of TVET teachers, which respectively are affiliated to or a part of the comprehensive university (e.g. Tsinghua University, Tianjin University, Tongji University), vocational-technical teachers college (e.g. Tianjin Vocational-Technical Teachers College), normal universities, technical colleges, professional colleges, and enterprises. Additionally, more than 300 regional TVET teacher training bases were established to serve their provinces and communities.

Table 2. National key TVET teacher training bases and professional skills training demonstration units

Type	Number	Percentage
Vocational-technical Teachers College	8	11.76%
Technical College	15	22.06%
Comprehensive University	10	14.71%
Normal University	8	11.76%
Professional College	19	27.94%
Enterprise	8	11.76%
Total	68	100.00%

Source: The list of qualified National Key TVET teacher training bases and professional skills training demonstration units from the Division of Vocation and Adult, Ministry of Education (2011).

Finally, a comparison between the national key TVET teacher training bases and professional skills training could demonstration units on the training task they take. From the statistics (shown in Table 3) of trainees allocated to the different places during 2006-2012, it's obvious that among the training establishments the number of enterprises providing training services is far behind that of colleges and universities, so does the average number of teachers receiving training at the enterprises. Specifically, the number of educational institutions has averaged 17.68 times the number of enterprises. The average of number of trainees at educational institutions is 22.14 times of that at the enterprises, and the training capability of educational institutions is 1.26 times of that of enterprises. Therefore, enterprises don't fully assume training responsibility, and their service capability needs to be expanded.

In conclusion, the aforementioned TVET teacher education and training institutions reflect their diversified characteristics. Almost all kinds of univer-

Table 3. National TVET teacher training task allocations

Year	Number of Trainee			Number of Training Base			Average Number of trainee		
	Total	At institutions	At enterprise	Total	Institutions	Enterprise	Total	At institutions	At enterprise
2006-2007	11750	11480	270	62	60	2	195.83	191.33	135
2008	6580	6038	442	61	57	4	112.29	105.92	110.5
2009	5750	5439	311	64	60	4	89.84	90.65	77.75
2011	10000	9493	507	65	61	4	153.84	155.62	126.75
2012	10000	9486	514	94	88	6	106.38	107.8	85.66

Note: Source from the Ministry of Education, retrieve from The background, status quo and problem analysis of national TVET teacher training (Chen & Wang, 2013).

sities and colleges have been involved in the task of TVET teacher education and training though they play different roles. For teacher education, colleges of vocational and technical education affiliated to comprehensive universities and vocational-technical teachers colleges assume the major responsibility, because they combine the discipline advantage of the comprehensive university with the pedagogical tradition of the normal university, and the pre-service teachers they educate both have solid technical knowledge as well as practical skills, in addition to mastering the pedagogical theory and teaching skills. For training, professional colleges and technical colleges assume the major responsibility, because these kinds of colleges have certain discipline specialties, and can meet the needs of in-service teachers to improve and update their professional area of knowledge and practical skills.

Description of TVET Teacher Professional Development Pathways

Usually there are two pathways to become a qualified TVET teacher -- traditional pathway and nontraditional pathway. They have different processes and requirements.

Traditional pathway

The traditional pathway has been the main channel for preparing TVET teachers. There are no documented statistics of exact percentage, but a rough estimate indicates that about 80% of the TVET teachers are from the traditional pathway. This school-based education model has its own characteristics on student source, curriculum plan, length of schooling and graduation requirements. Here are some vocational-technical teachers college examples:

The students registered in the TVET teacher education institution mostly graduate from general high school, and only 5% students are from secondary vocational schools such as trade schools, technical schools, and vocational high schools. This means that before taking teacher preparation programs, most students have little understanding of the career area they will teach and the related professional practical skills.

Tianjin Vocational-technical Normal University was the first and lead specialized vocational-technical teacher college in China. According to its 10 colleges and 27 career area programs, the average required total credit hours is 220 (shown in Table 4), and the whole curricula are generally divided into three parts: theory curricula, practical teaching, and extracurricular activities and social practice. Theory curricula are composed of public basic course, discipline basic course, professional/specialized course, and related pedagogical course

(education, physiology, and so on), which takes up 74.55% of the required credits. Practical teaching throughout the whole teaching process includes military training, experiment, curriculum design (academic year), internship or social practice, vocational skill training, graduation design, etcetera, accounting for about 21%. Extracurricular activities and social practice refers to various intensive training, social practice, public welfare activities, scientific projects form teachers and enterprises and at least four credits of teaching practice accounting for less than 5%.

Table 4. TVET teacher education curriculum structure from Tianjin Vocational-technical teachers college

Type	Theory Curriculum	Practical Teaching	Extracurricular Activities and Social Practice	Total
Credit hours	164	46	10	220

Note: Source from Undergraduate education and training scheme of Tianjin Vocational-Technical Teachers College (2012)

When students meet the required credits, they can apply for the bachelor's degree; and when the students complete such courses as pedagogy, psychology, and teaching methodology and pass the exam, they can apply for the teacher's licenses. Most vocational-technical teacher colleges and technical colleges also require their students to get professional certificates, which give them a competitive edge over others for jobs. In addition, there is another source for TVET teachers, that is allow outstanding graduates from the secondary specialized schools, technical schools, and technical colleges to become teachers of the schools or colleges where they studied after they graduate.

Non-traditional pathway

With the expansion of TVET and the shortage of teachers, the nontraditional pathway, as a necessary supplement, has attracted more attention especially from the researchers of the field of TVET. In 1991, the second national vocational education conference was held in Beijing, on which the Decision of the State Council on Vigorously Developing TVET was passed (State Council, 1991), attempting to solve the problem of the shortage of TVET teachers, especially those with specific skills. This document is a landmark in the history of TVET development in China, giving the basic guideline that "multiple-channels should be adopted to absorb TVET teachers especially those with specific skills, in compliance with the principle of combing teacher education and training, full-time teachers and part-time teachers" (State Council, 1991,

p. 3). It legitimized the employment of skilled workers, professionals without teacher certifications as full-time teachers. These teachers are required to gain their teacher licenses during the following one to three years. By now, individual schools and colleges have set up their own requirements because of lacking unified standards.

The non-traditional pathway focuses more on teachers' work experience rather than on a diploma and certification. Persons from the workforce usually have the traits teachers from the traditional pathway lack: rich work experience, certain professional skills, being familiar with the updated equipment and tools, and a positive and responsible attitude toward the career they pursue, which prepare them to teach specialized courses and practical instruction courses. Unfortunately, due to the strict procedure and employment requirements regulated by the education authority, this pathway actually does not provide a great number of teachers for vocational schools and technical colleges while facing the problem of shortage of teachers especially those with specific skills.

Issues Challenging TVET Teacher Education in China

Even though TVET teacher education and training made improvements during the past 30 years, especially the first decade of 21st century, there still exist many significant problems including the shortage and the low-quality of teachers, which became more prominent with the expanding enrollment of the TVET schools and colleges.

Shortage of TVET teachers

The shortage of TVET teacher restricts the development of TVET in China, and becomes significantly apparent on the following two aspects: the high ratio of students to teachers, and the imbalance of general course teachers, specialized course teachers, and practical instructing teachers.

Compared with 10 years before, the number of students at vocational schools has increased by 70%, yet the number of teachers there increased by only 13% (Ge, 2010). According to the data of 2010 released by the Ministry of Education (shown in Table 5), the number of students and full-time teachers at vocational schools was 17,097,558 and 682,151 respectively (Ministry of Education, 2010), which lead to the high ratio of students to teachers at vocational schools 25:1, a number which far exceeds that of 16:1 at general schools. While there is an annual growth of about 50,000 teachers, there still exists a big gap of almost 380,000 teachers when 20:1 taken as a criteria, which is regulated by the Ministry of Education of People's Republic of China (2010). This gap will continue to expand if some measures aren't taken (Zhang, 2012).

At present, TVET teachers are usually divided into three categories based on the courses they teach. According to the statistics on Table 5, there are more than enough general course teachers, inadequate specialized course teachers, and even fewer practical instructing teachers. During the past five years, general course teachers have decreased by about 3%, and technical courses teachers increased by about 2.5%. However, in 2012, general course teachers still account for more than 42%, and specialized course teachers account for less than 54%. Practical instructing course teachers account for about 3.5% and there is little change from 2008 to 2012. This unbalanced teacher ratio severely influences the acquisition of practical skills for students.

Table 5. Percentage of different types of TVET teachers² in secondary vocational schools

Type	2008	2009	2010	2011	2012
General courses	45.50%	42.67%	43.61%	43.56%	42.67%
Technical courses	51.11%	53.69%	52.90%	52.72%	53.69%
Internship practice	3.94%	3.64%	3.49%	3.72%	3.64%

Note: Source from the Ministry of Education (2008-2012)

Low-quality of TVET teachers

The development of TVET in China has long been plagued by the problem of low-quality of teachers, which mainly displays in the following four aspects: low level of educational degree (Ge, 2010), unreasonable professional posts structure (Zhao & Lu, 2007), supply structure (Zhang, 2012), and ability structure (Zhao & Lu, 2007).

Whether full-time or part-time secondary vocational school teachers, their education level mainly concentrates on the bachelor's degree, and is followed by the three-year diploma, both of which account for about 94%; only 5% of teachers have a master's degree and 0.18% teachers hold a doctoral degree (shown in Table 6). The number of teachers with higher than a bachelor's degree is seriously inadequate, which restricts the long-term development of vocational schools.

The unreasonable structure of professional posts in TVET teacher teams reveals a lower proportion of senior and sub-senior professional posts of TVET teachers with the number of 23%, in which the senior is only 0.9% (Ministry of Education, 2012) (show in Table 6). If we separate the general course teachers

from the specialized course teachers according to their posts, it is astonishing that the number of specialized course teachers and practical instructing teachers with senior and sub-senior titles is rare.

The current secondary TVET teachers in China are primarily general university or teachers college graduates accounting for about 80% of the total teacher team, and the teachers provided by the specialized institutions such as vocational-technical teachers colleges, accounts for less than 20% of the total, and the teachers with rich work experience and enterprise work background is rare and less than 1% (Zhang, 2012). In addition, part-time teaching staff is often neglected. According to the data of 2012 in table 6, the proportion of these type of teachers in the whole teacher team is 13.47%. This shows that the education and training function of specialized vocational-technical teachers colleges and enterprises are not fully utilized.

Some university or college students become teachers after they graduate, and some outstanding graduates from vocational schools or colleges are selected as technical course or practical instructing teachers after short-term training when qualified teachers are not available from teachers colleges or universities. Additionally, some persons with enterprise and government work experience are employed as technical course teachers after short-time pedagogical training. Both of them have defects. The former, from the traditional pathway, has experience in teaching but lacks specialized knowledge and practical experience; the latter, from the nontraditional pathway, has occupational ability and vocational experience (Zhao, 2007), but lacks theoretical knowledge, teaching methods, and techniques.

Table 6. Number of academic qualifications of teachers in secondary vocational schools

Professional Post	Total	Doctor's Degree	Master's Degree	Bachelor's degree	Short-cycle Courses	Below High School Graduate
Full-time teacher	684071	792	34425	559588	85177	4089
Practice Course Teacher	24893	10	580	16626	6991	686
Senior	4018	207	641	2795	354	21
Sub-senior	153165	302	10306	132511	9800	246
Middle	277495	181	13432	229862	32541	1479
Junior	191865	33	6311	155599	28503	1419
No-ranking	57528	69	3735	38821	13979	924
Part-time Teacher	106549	575	7703	76189	20480	1602
Practice Course Teacher	10886	42	473	7280	2766	325
Senior	3446	197	838	2129	244	38
Sub-senior	23856	202	2345	18858	2269	173
Middle	42771	141	2469	31583	8133	445
Junior	17098	16	971	11705	4166	240
No-ranking	19378	19	1071	11914	5668	706

Note: Source from the Ministry of Education (2012)

Issues Challenging TVET Teacher

The factors that lead to the current problems of TVET teachers are complicated and intertwined, among which the TVET education and training model, the management system, and the TVET teacher certification system exert the most direct impact.

School-based Education and Training Model

In China, TVET teacher education and training basically employs the school-based model designed for general education teachers. This model means that education and training mainly occurs at school, and courses are more about the theory than about the work, for the work, or through the work (Stone, 2001).

From the perspective of educational and training institutions, TVET teachers as analyzed above are mostly from educational institutions, and only less 20% of full-time and part-time teachers are from enterprises. This causes the

common phenomenon that pre-service teachers are less familiar with the actual work environment, thus lack the specialized knowledge and practical skills needed as a qualified teacher. In many cases, teachers trained under the school-based model cannot meet students' needs and expectations at vocational schools and technical colleges.

From the perspective of educational and training processes; first, college and universities do not build good cooperation with the workplace, causing most learning activities to occur in the school system, rather than in the workplace, where students can gain real experience. Second, school-based study accounts for more than 70% of the total learning time, while internships in enterprises are not only short but also usually not well planned nor implemented. What's more, for a long time our teacher education, whether in vocational-technical teachers colleges or in comprehensive universities, pursues the aim of preparation of academic subject expert teachers. Therefore, the professional courses are aligned with academic courses, focusing on systematic, specialized theoretical knowledge, while giving minor attention to technical knowledge and skills. This eventually results in many graduates who don't know how to apply the theoretical knowledge that they learned in school.

Centralized Management System

Compared with the rapid enrollment expansion in vocational schools and technical colleges, the education and recruitment of new teachers seems to have been greatly left behind. In China, most TVET institutions are public with a long tradition of centralized management. Therefore, the important school issues such as the appointment of school leaders, enrollment of students, and recruitment of teachers, are under the control and management of provincial departments of education and regional divisions of education. This top-down strict hierarchical administration mode limits the autonomy of the individual schools and colleges. They must report their teachers' recruitment plan (e.g. recruitment position, number, requirements) to the higher level departments and get their approval. Under the following circumstances, the plan may be rejected: (1) the number of the existing teachers reaches the maximum allowed by the management department; (2) some rigid criteria for teachers are set, for example the minimum education level requirement. The most common occurrence is that some enterprise experts the school wants to hire have no college diploma or bachelor's degree. Even if they have rich work experience and can qualify for the instructing job, they still cannot be employed as full-time teachers.

In addition, some personnel regulations on teachers discourage enterprise experts from working at TVET establishments. Based on the length of work experience and their performance, TVET teachers are usually ranked on five

levels under the management of the Ministry of Education. From lowest to highest are entry level, junior, middle, sub-senior and senior. While workers and engineers in enterprises are ranked under the management of the Ministry of Human Resource and Social Security. Workers are leveled as primary worker, middle worker, advanced worker, technician and senior technician, and engineers are ranked as assistant engineer, engineer and senior engineer. The two different ministry management systems make it difficult to mutually recognize and convert the different ranks. For example, when an enterprise expert becomes a teacher, he is ranked as the entry level by the school or college no matter how high his original one is. Accordingly, the salary is determined by the professional post rank, which ultimately affects the expert's enthusiasm of becoming a TVET teacher.

Lack of Professional Certification System for TVET teachers

At the end of 20th century, Teacher Law of the Republic of China of 1993 and Education Law of the Republic of China of 1995 were passed, which focused only on the general education teachers. There still isn't a specialized certification system for TVET teachers.

Jiang (2002), a TVET researcher in China, thinks that any kind of work should be considered a type of profession (Jiang, 2002, p.401). This means that the connotation of profession regulates the dimension of work (i.e. actual social occupation or job) and the standards of vocational education (i.e. program area, curricula and evaluation). Although TVET teachers need to master general specialized knowledge and teaching skills just like general education teachers, they also need the extra knowledge related to occupational work processes, specialized technologies, and they must possess the competency to apply these knowledge skills in their instruction.

From the respective of selection standards to analyze, the existing teacher certification system does not reflect the special requirements for TVET teachers. If one meets the requirements of the educational level and passes the written exams for pedagogy, psychology, teaching methodology and Mandarin test, then he/she can apply for the teacher license. Though another part of a teaching demonstration and an interview is included, in most cases this becomes a formality rather than playing a decisive role in the selection. The assessment of practical teaching ability is still inadequate (Li M. & Li X., 2007), the assessment of practical operation ability is ignored, and the written exam is designed based on the general education, which leads to the common problem of TVET teachers lacking practical instructional (pedagogical) skills, operational skills, and instructional research and professional development competencies (Norton, He & Gao, 2013).

Strategies and Recommendations

To solve the problems of the shortage and low-quality of TVET teachers, three aspects can be improved. The first one is to re-build the TVET teacher education and training system by strengthening the cooperation among educational institutions and enterprises. The second is to build a more open and diversified TVET teacher team system by increasing the number of teachers from the nontraditional pathway. And the third one is to reform centralized management systems by giving more authority to local communities and schools.

Build TVET Teacher Education and Training Institution System

Since the 21st century, a comparatively complete institution system in China has been established (shown in Figure 1). Based on the different backgrounds, all institutions can be divided into four categories: comprehensive universities and professional colleges, technical colleges and vocational- technical teachers colleges, normal universities, and the enterprises. If according to the places where education and training take place, they can also be grouped into two categories: school-based education and training, and work-based skill practice. In the system, individual university/college or enterprise assumes specific function to cooperatively service the TVET teacher education and training. They should comply with the following principles:

- Different types of institutions bring one's priority into full play;
- Break the boundaries of different type of institutions, and share educational resources;
- Combine the school-based education and training and worked-based skill practice;
- Vocational-technical teachers colleges and large enterprises should assume the lead roles respectively in the aspects of technical education and practical training.

Comprehensive universities and professional colleges have strong discipline background. They usually have an excellent teacher's team and first-class instructional instruments and laboratories, thus take the leading position at theoretical knowledge and technology innovation in order to provide the service of technical research and development.

Technical colleges have the practical technical background, and aim to cultivate technical and skilled workers. They have the teachers who master the latest technology and strong operational skills, and possess the latest equipment, thus take advantage of technological invention and technological process innovation. They can work together on the technology research with comprehensive universities and professional college, but may have different research focuses. Comprehensive university and professional colleges emphasize the theoretical innovation, while technical colleges emphasize the technological invention.

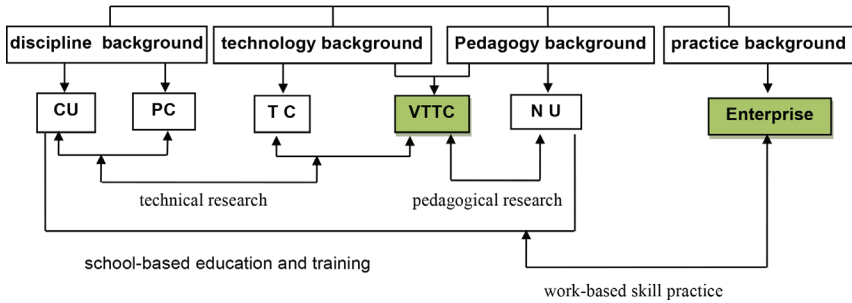
Normal universities have the pedagogy tradition and background, and are the major channel of cultivating teachers of all types and levels. Their teachers focus on educational research, e.g. curriculum, teaching and learning, policy, and some other aspects which lay the pedagogical foundations, so that they can assume the responsibility of pedagogical research and provide pedagogical service for pre-service teachers who graduate from other non-normal universities or colleges.

Vocational-technical teachers colleges are the mixture of technical colleges and normal universities, naturally hold the dual characteristics of strong technological as well as pedagogical advantages. Undoubtedly, this is a relatively ideal TVET teacher education and training institution compared to the aforementioned types of institutions. Its graduates not only hold solid technical knowledge and proficient skills, but also master teaching theory and skills. They can also cooperate with comprehensive university, professional college and technical colleges for technical research, as well with normal university for pedagogical research. What's more, its pedagogical research, based on the technical background, more emphasizes on the particularity of TVET.

Enterprises, as economic entity, have real work environment, production equipment, and skilled workers and experts. It, as a practical base for TVET teacher education and training, can provide opportunity for pre-service teachers to strengthen their technical skills, understand the work regulation and safety, and experience enterprise culture, which are imperative to be a qualified TVET teacher. Therefore, students from different types of universities or colleges can take internship opportunities at enterprises, and TVET in-service teachers can also work at the enterprise for several weeks to develop and update their technical knowledge and skills.

From the above analysis, we can draw the conclusion that vocational-technical teachers colleges and enterprises can undertake the primary task and play the leading role in TVET teacher education and training. Actually, they are assuming more and more responsibility. Take Tianjin Vocational-Technical Teachers College for example, in 2010, it was approved to renamed as Tianjin University of Technology and Education³ by the Ministry of Education, and to expand the scale of enrollment to 15,500 in 2015 (Ministry of Education, 2010). In 2013, a new research unit -- Institute of TVET Teacher Education was set up, and assumes the national project of TVET teacher education research. More enterprises begin to cooperate with colleges and universities on curricula development, internship for pre-service and in-service teacher and so on. However, there still needs future exploration and practice on the responsibility of individual education institutions and interscholastic cooperation among them.

Figure 1. Framework for TVET Teacher Education and Training Institutions



Note: CU= comprehensive university; PC= professional college; TC= technical college; VTTC= vocational-technical teachers college; NU= normal university

Build more open and diversified TVET teacher team systems

The TVET teacher team should consist of full-time teachers and part-time teachers, graduates from the different types of universities and colleges and experts from enterprises and government units. This variety different types of universities and colleges and experts from enterprises and government units. This variety of sources contributes to an open and diversified TVET teacher staff.

Openness means teaching position is open to anyone who wants to be a TVET teacher, which helps to address the shortage of the teachers as well as appeal excellent persons to be a part of the teaching staff. Anyone meets the requirements of the TVET teachers can apply for teaching position, no matter your age, education background, and work experience. A high quality teaching staff can make TVET programs combine rigorous academic standards and industry-based technical content, leading to higher academic achievement and better economic outcomes (Wilkin & Nwoke, 2011) for an increasing number of TVET students. The nontraditional pathway is the necessary way of leading to this open system.

Diversity refers to the diversification of teacher channel and type. Currently, application requirements and processes of TVET teachers in China seems to be unreasonable, such as the strict regulation on the educational level as well as organizational affiliation, which blocks many enterprise experts and professionals out of the vocational schools and technical colleges. This problem can be addressed in a variety of ways. First, establish different requirements for applicants from different pathways. Traditional pathway requires successful completion of an approved teacher preparation program (Wilkin & Nwoke, 2011), in which the amount of practical experience is specified. For nontraditional pathway, several years of work experience can replace a bachelor's

degree, and the individual is allowed to get his/her teacher's license within one to two years after he has begun to teach. Another option would be employ various channels to supplement the teacher team, such as the hiring of more expert workers and engineers from enterprises and other work places as full-time or part-time teachers.

Reform Management System of TVET Teacher Education and Training

To build a better TVET teacher education and training institution system and TVET teacher team system requires the support of the management system. Reforming the existing management system is such a complex project that it's hard to discuss the whole in this article, so here only the most related aspects are included. One is to legislate strengthening cooperation among TVET teacher education and training institutions and enterprises. A second would be to establish a specialized TVET teacher license to improve the quality of individual teachers and the teaching staff. And the third would be to grant autonomy to vocational schools and technical colleges to recruit the teachers they need.

Legislation is the most effective and compulsory means to ensure and regulate activities carried out successfully. In such countries as Germany and America, though they have their own models, both passed a series of laws and regulations to ensure the TVET performances. In China, Teacher Act of 1993 and Vocational Education Act of 1996 and some other regulations clarify the importance and priority of TVET, but they are usually the provision of the principle, and seldom provide specific measures for implementation. Thus the priority is to set forth a series of regulations to make basic laws get strict enforcement. Take enterprises for example; legislate their duties and responsibilities on providing education and training services, specifically providing internship positions for pre-service teachers, allowing in-service teachers to work at enterprises for a certain period of time, and providing part-time teachers for vocational schools, meanwhile guaranteeing their tax exemption and other preferential treatment.

Establish independent licensure for TVET teachers in order to regulate and ensure the quality of teacher team. First, give specific requirements on educational level, such as for technical colleges that a teacher must hold a master's degree or higher for the traditional pathway, or bachelor's degree or lower for the nontraditional pathway. Second, the knowledge of pedagogy, psychology and teaching methods and capability representing TVET features should be strengthened. Additionally, recent research on the duties and tasks (pedagogical competencies) was conducted at Beijing Normal University using the DACUM (Developing A Curriculum) process. A selected panel of 11 expert TVET teachers representing secondary and postsecondary education identified 9 duties and 91 pedagogical tasks (skills) that an expert TVET teacher

should acquire. This analysis should be used by TVET teacher educators as a guide to what they should teach pre-service and in-service teachers (Norton, He & Gao, 2013). Additionally, a certain period of practice teaching (Tang & Shi, 2012) should be required. Third, design assessment criteria on the applicant's practical ability, especially their industrial working experience, including developing rubrics and procedures. Finally, the pathways to get the teacher certification are variable and selective, but whatever the pathway is, it should include the basic requirements: academic study, teaching internship and industrial work experience.

Reform the management system, especially the personnel employment system, to give the community and TVET institutions autonomy in the recruiting process. Vocational schools or technical colleges can employ the experts from enterprises and government units as part-time or full-time teachers beyond the educational level requirement when the teachers are not available through traditional pathway. Secondly, break the personnel regulations boundaries between teachers and practical experts. This will encourage and introduce skilled workers, technicians and enterprise management personnel (Xiao, 2010), who have practical work experience and meet the requirements of teacher's qualification, into vocational schools and technical colleges as full-time teachers.

Conclusion

TVET in China has become a mainstay in the education system and almost half of the high school students and post-secondary students are receiving vocational and technical education. Many educational establishments are providing TVET teacher preparation and training service. However, the shortage and low-quality of the teachers are still the biggest challenges. How should these problems be addressed? This article offers some suggestions of building TVET teacher education and training institution system and open and diversified TVET teacher staff system, and reforming management system. But as theory and practice are different, for example, 1) cooperation among colleges, universities and enterprises has been sought for many years, nevertheless, it hasn't been solved successfully; 2) relationship between the education administration division and individual vocational schools need much improvement. China has a long tradition of central management in education, and there is substantial economic and education gap in different areas. Addressing all of these problems in such a complicated situation requires more thinking and practical exploration.

Notes:

1. Technical and Vocational Education and Training (TVET) is a widely used terminology unified by the UNESCO in 1999. But actually other terminologies have been employed by different countries based-on their own history, culture

and focuses, such as, in America, CTE (Career and Technical Education) is used. Here this paper adopts the universal word TVET.

2. The courses at vocational schools and colleges are usually categorized into general course, specialized course including theoretical and practical courses, and internship. General courses mainly include Chinese, math, English, social science and science; Specialized course refer to vocational and technical courses in occupational areas, usually divided into theoretical and practical parts and are taught respectively by different teachers; and internship refers to students study or work as a intern in real work environment such as business or industry/factory or enterprise. Accordingly, teachers at vocational schools and technical colleges are divided into general course teachers, specialized course teachers and practical instruction teachers.

3. In China, a college is upgraded to an university means that its teacher team, majors set up, instruction equipment, funding resources and other respects have reached a certain higher level, accordingly it qualify to enroll more students.

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Assessing the Role of Public Relations in Internationalisation of TVET: A Case of the Sub-Saharan Africa

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Abstract

Although Technical and Vocational Education and Training (TVET) is being recognized as instrumental for socioeconomic development in most countries, studies indicate that TVET is failing to match with the skills, attitudes and knowledge demands from the market, partly due to rapid technological developments, globalisation as well as rapid transformation of occupations (Jimat, 2009). As such, the public including the media still harbour negative attitudes on TVET in the wake of its failure to provide a panacea for unemployment.

The paper argues that a vibrant PR is instrumental towards internationalisation in TVET and making it attractive through strategies such as harnessing the potential of PR and creation of an international platform where professionals involved in PR practices within TVET could share innovative ideas and best practices.

Keywords: Internationalization, Public Relations, Sub-Saharan Africa, TVET, New media

Introduction

The 21st Century has brought with it significant advances in the political, economic and technological fronts which have resulted in the creation of a global village. Thus internationalisation coupled with rapid developments in information technology has in the recent years turned out to be one of the major issues of discourse in the modern society. In the process, cross boarder information exchange has now become the order of the day.

Amidst all this has been the indirect ‘intercultural’ effects of information and communication technology (ICT) which has been instrumental in cutting across physical boundaries and geographical distances by linking people around the world (Davis, 1999 cited in Richards, 2004). This, according to Davis

(1999, cited in Richards, 2004), has made ICT to be increasingly recognized as a key organizing vehicle for various notions of 'globalization' and imperatives of 'internationalization' in education. Over time, a platform for exchange of information and developments in the TVET sector has emerged.

Internationalisation in TVET can be defined as a process of intergrating an international dimension into teaching, research and services functions of various institutions in the TVET sector (Knight, 1997 cited in UNESCO: 2014). According to Knight, internationalisation is a key component for development of higher education and it is manifested through aspects such as international interaction, exchanges in technological development, cross boarder movement of employees, sharing expertise and academic networking. Internationalisation is good for international competition and transferability of goods and services. The International Vocational Education and Training Association (IVETA) is an example where such aspects are being manifested.

However, on the other side of the coin some schools of thought have faulted internationalisation, arguing that it is there to strengthen international competition at the expense of international cooperation among countries and institutions while some fear that promotion of cultural diversity could bring in issues of a single language and advancement of western culture (Unesco,2014).

Background to Internationalisation of TVET and Public Relations

It has to be accepted that with globalisation no country or institution would claim to possess an inherent immunity from the effects of internationalisation. Likewise, those in the TVET sector cannot claim to cut themselves from the international networks like IVETA. Public Relations could in the process play an important role in the internationalisation of TVET through managing and facilitating sharing of these innovative ideas by, among others, spearheading the creation of a structured but seamless network.

While the debate on internationalisation of TVET is gathering momentum, experts in the TVET sector have in the recent years been converging in various fora to bang heads on how best to internationalise TVET with a number of resolutions being made. For instance, one of the issues which the Hangzhou Declaration noted was the "current marginalisation of TVET vis-a-vis general and academic education" hence recommended that communication via knowledge networking should be an important aspect that would contribute towards development process (UNESCO, 2004. p. 23).

Currently the major challenge for TVET as argued by Msasa (2014) it is still regarded lowly, resulting in poor coverage of the sector's programmes and activities. In other words, the general feeling by the public and even parents is

that vocational education is considered as being fit for only the academically less endowed (African Union, 2007). As such, there has to be some mechanism to reverse this situation because such perceptions could negatively affect efforts towards internationalisation in TVET. One way to arrest this situation is to provide accurate information which would make the sector attractive through effective public relations programmes and activities. As Alison (2010) puts it, public relations if employed effectively could ensure that the public has an accurate view of the organisation, in this case the TVET sector. The negative perceptions that the public has on TVET is probably a reflection of the public's lack of or inadequate knowledge about the sector as well as the important role that it could play in any country's economy.

In Malawi the Technical, Entrepreneurial and Vocational Education and Training Authority (TEVETA) which was established by the TEVET Act of Parliament No. 6 of 1999 to regulate TEVET has a Public Relations division. TEVETA Malawi and TEVETA Zambia are probably the only authorities in the Sub Saharan Africa that have incorporated "Entrepreneurship" in TVET in order to increase chances of TVET graduates going into self employment hence the reason why the two authorities refer it as "TEVET". The division's responsibility is to raise the profile of TEVET in Malawi, by among others, ensuring that its programmes and activities are attractive and well-covered by the media. Over the years efforts have been undertaken by TEVET Authority's Public Relations division in order to fulfil this mandate through various PR activities. However, a study which was commissioned by TEVETA Malawi to evaluate the impact of Public Relations noted that there still appears to be some elements of misrepresentation or in most cases, blackout of information about TEVET in Malawi media, a situation that has resulted into various stakeholders having inadequate knowledge on the activities being undertaken in the TEVET sector (IEC Report, 2011). Among others, the study noted that the public has a feeling that TEVET courses are pursued by those who have not been successful in general education. However, while acknowledging that Public Relations has a significant role to play in TEVET, the study singled out inadequate capacity in audience research for the institution as the root cause of the problem of why Public Relations has not been having an impact on TVET (TEVETA, 2012).

The TEVETA Malawi case study provides some insights and challenges that public relations is facing while at the same time offering some hope that potentially Public Relations could play a vital role towards internationalisation in TVET and ensuring that the sector is attractive.

Therefore, this paper aims to assess the role of Public Relations in internationalisation of TVET by, among other things, examining various issues within the Public Relations arena and internationalisation of TVET with particular focus on Sub Saharan Africa perspectives. Sub-Saharan Africa merits

a special mention when it comes to studying the role of Public Relations in the internationalisation of TVET because of the diversity of issues and challenges that have a bearing on communication. Firstly, in Sub Saharan Africa globalisation has created a tension between skills required for global economic competitiveness and developing skills for poverty eradication. This has culminated into African countries pursuing the development of skills at all levels of the spectrum (basic, secondary, tertiary levels), with each country putting emphasis on the skill levels that correspond best to their stage of economic development and the needs of the local labour market (African Union, 2007).

Secondly, the international media channels in Africa are many but the problem with these is that they tend to lose their value in the process of trying to 'de-westernise' their programmes in order to make issues covered more African in terms of localism and relevance (Sririvamesh & Vercic, 2009). The fact that media programmes are in either English, French, Portuguese which are mostly spoken by the affluent they tend to be limited to a specific public hence denying the majority from accessing information about TVET. This means that as Sririvamesh and Vercic (2009) put it, all this has to be taken into consideration when planning and managing for effective Public Relations programmes depending on the needs of the each country and institution.

The Global Perspectives on TVET

At the Second International Congress on Technical and Vocational Education in Seoul in 1999 and at the 30th Session of the General Conference of UNESCO held in Paris in 1999, members agreed on the adoption of the phrase "Technical and Vocational Education and Training" (TVET) to reflect the combined process of education and training and at the same time recognise that employment be the common objective of their immediate goal (UNESCO, 1999 as cited in UNESCO, 2002). Despite TVET being recognized as instrumental for socio-economic development in most countries, studies indicate that the system is failing to match with the skills, attitudes and knowledge demands from the market, partly due to rapid technological developments, globalisation as well as rapid transformation of occupations resulting into the public harbouring negative attitudes on TVET in the wake of its failure to provide a panacea for high unemployment rates (Jimat, 2009). Ultimately as noted by UNESCO (2004, p.13) "the current marginalisation of TVET vis a vis general and academic education" has in the recent years been a source of debate in various fora.

These negative attitudes on the TVET, as noted by African Union (2007) emanate from the fact that globally the education system continues to focus on basic and higher education . As the result TVET is considered inferior and those who venture into it consider it as a second choice after failing to pursue

other careers. Although the majority consider TVET as inferior, most students who fail to make it to higher education, nevertheless end up going into labour market without skills (UNESCO, 2002). All these issues do pose a challenge when it comes to internationalisation in TVET .

Over the years efforts towards internationalisation in TVET have been manifested in the formation of various regional blocks whose objectives, among others, has been the harmonization of TVET systems through development of a Regional Qualifications Frameworks which seek to enable Member States to compare and recognize qualifications obtained in the region. For instance, on 8th September, 1997 Heads of State and Government met in Blantyre, Malawi to discuss ways and means of promoting deeper regional integration. The meeting culminated into the formation of the SADC Protocol on Education and Training, which seeks to establish legal and institutional frameworks to promote regional integration in specific priority areas of education, training, research and development. Among others, the protocol works towards the relaxation and eventual elimination of immigration formalities in order to facilitate freer movement of students and labour within the Region for the specific purposes of study, teaching, research and any other pursuits relating to education and training.

Although there has been this movement and a lot of resolutions being made at various fora towards internationalisation in TVET, not much has been shared among the stakeholders in TVET, a situation that has resulted into creation of an information imbalance.

However , if vocational education and training is understood as a crossing point between human, society, nature and technology, production and economy “one could see communication via knowledge networking being an important aspect that could contribute towards the development process” (UNESCO, 2014. p. 33).

This, therefore, calls for the urgent need to harness the role of Public Relations in the Sub Saharan Africa in order to check this information imbalance which could negatively affect internationalisation in TVET.

Contextualising Public Relations in Internationalisation of TVET

For the role of Public Relations to be appreciated it is important to understand various perspectives within its realm and how these could be put to use in TVET in line with emerging issues in globalisation. In the process aspects such as challenges being faced and the environment in which the public relations practitioners operate could be also be appreciated. This information becomes handy when planning various public relations interventions towards the internationalisation in TVET in the wake of globalisation.

Sriramesh (2009), argues that globalisation has in the recent years played an important role in ensuring that Public Relations body of knowledge moves towards greater cultural relativism which has in the process become relevant to the practitioners who are oftentimes faced with challenges in communicating effectively with the diverse publics. This is why it is important for Public Relations practitioners to have an understanding of the society where TVET as a sector is operating in their respective countries. Society in this case is an aggregation of material aspects which border on economic resources and power; social relationships like national societies, families and social roles and occupations which are either formally or informally regulated (McQuail, 2010). Since globalisation started gathering momentum so many effects have featured highly as the result of the elimination of trade barriers among the nations. These include cultural diversity and development of a confluence of various publics such as employees, consumers and members of the media as they try to respond to forces of globalisation. Secondly, globalisation has been accelerated by media and communication- ICTs through rapid changes in communications such as the proliferation of social media which is fast turning the world into a seamless and borderless entity. Above all, what Sriramesh (2009) observes is the realisation of the fact that human race must come together and address various common problems which include environmental pollution, terrorism, nuclear proliferation and over population which have resulted in poverty and hunger, all of which led to increased international cooperation and intercultural communication. Viewing developments from this vintage point, one would see the need for public relations to respond to such trends in globalisation. Public Relations, therefore, has to be understood and defined within the context of globalisation as “ the Strategic Communication that different types of organisations use for establishing and mainstreaming symbiotic relationships with relevant publics many of whom are increasingly becoming culturally diverse (Sriramesh & Vercici, 2009 p.xxxiv).

Therefore, in the context of TVET, it means this definition is embracing the issues of symbiotic relationships that would emerge in internationalisation of skills demand and supply. It is also important that Public Relations must embrace issues of cultural diversity in order to provide safety valves that should contain the imbalances that would emerge as the result of globalisation.

However, for Public Relations to be effective in the internationalisation of TVET it has to be applied within some generic principles such as empowerment of personnel responsible for Public Relations and it has to be looked at as a separate management function as well as a strategic management function (Grunig, 2009). But one aspect that should not be overlooked is that these generic principles cannot be applied in a kind of one-size-fits all approach because as Sriramesh and Vercic (2009) argue, ‘environment’ for Public Relations is not the same in all countries. Thus for Public Relations to be effective, Sriramesh and Vercic (2009)

proposes that the conceptual framework from which the generic principles were derived by Grunig (2009) be linked with the variables such as the cultural (societal and organisational), media environment, the economic system, the political system and level of development and activism of a particular country. On the other hand, while trying to understand Public Relations, media and news should be understood when planning Public Relations in the TVET sector because as Cottle (2003) puts it, the media is a major conduit of information in a society where both cultural identities and commercial interests jostle for media space, prompting institutions to strategically position themselves. The implication is that TVET should be strategically positioned to ensure that matters related to internationalisation in TVET do not skip media spotlight.

In the process Public Relations practitioners could become handy because of their ability to understand the Agenda Setting theory of news. By definition Agenda Setting is “a process of media influence (intended or unintended) by which the relative importance of news events, issues or personages in the public mind are affected by the order of presentation (or relative salience) in news reports” (Macquail, 2010, p.548). A number of studies have been carried out, the most significant being the one done by Bernard Cohen when he wanted to find out whether there was a relationship between the press and foreign policy (Cohen, 1963 as cited in Boyd-Barret and Newbold, 2005). He found that “the press is significantly more than a purveyor of information and opinion. It may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about” (Cohen, 1963, p.13 as cited in Newbold, 2005).

But as Macquail (2002) argues, the media influence may not necessarily be a reflection of its opinion but it is simply going by what people think probably in trying to be objective although Mackinnon (1982, p.237 cited in Litchenberg, 2000) contend that objectivity is viewed as a strategy of hegemony employed by some sections within a society in order to dominate others. The implication is that it might happen that in trying to be objective the media could be faced with a situation where it would give some activities or news events more coverage than others. In that case if TVET as a sector is considered by the public as of low status as argued by Jimat (2009) then one would not expect the media to give it much coverage as way of making it attractive to the public. This means it might be problematic for issues related to internationalisation in TVET to be well publicised if there are no proper Public Relations strategies in place.

On the other hand, the Marxist theory acknowledges the existence of a relationship between economic ownership and the dissemination of information which does affirm the legitimacy and the value of class of society. This implies that as Cottle (2003,p.136) puts it “those who have access to news discourse can shape public opinion and set agenda for action”. Probably this is where, in the

process of internationalisation in TVET, Public Relations could play a role in shaping the attitudes that the public has on TVET.

Role of Public Relations

Considering the diversity of Public Relations definitions being put forward by various authorities in the field, it has always been problematic to appreciate its roles. However, Alison (2010, p 26) has managed to summarise what Public Relations is capable of achieving by providing a rough guide of the activities involved in Public Relations in Table 1 below.

Table 1: A Rough Guide to Main Activities of Public Relations

Public Relations Activity	Explanation	Examples
Internal Communication	Communicating with Employees	In-house newsletter, suggestion boxes
Corporate PR	Communicating on behalf of whole organization not goods or services	Annual reports, conferences, Ethical statements, visual identities, images
Media Relations	Communicating with journalists; Specialists; Editors from local, national, international and Trade media, including newspapers, magazines, radios, TV and web based communication	Press Releases, photo calls, video news releases, off the record briefings, press events
Business to Business	Communicating with other organizations e.g. Suppliers, Retailers	Exhibition, Trade events, newsletter
Public Affairs	Communicating with opinion formers (e.g. Local and national politicians), monitoring political environments	Presentations, briefings, private meetings, public speeches
Community Relations/ Corporate Social Responsibility	Local communities, elected representatives, head teachers etc	Exhibitions, Presentations, letters, meetings, sports activities and other sponsorships
Investor Relations	Communicating with Financial Organisations/ Individuals	Newsletters, briefings, events

Strategic Communications	Identifying and analysis of situations, problems and solutions to further organizational goals	Researching and executing a campaign to improve ethical reputation of an organization
Issues management	Monitoring political, social, economic and technological environment	Considering effect of the issues in the party manifestos during campaign and these could impact on say TEVETA (my emphasis).
Crisis Management	Communicating clear messages on fast changing situation of emergency	Dealing with media after the closure of a TEVET institution due to sub-standard structures (my emphasis).
Copy writing	Writing for different audiences to high standards or literacy	Press Releases, news releases, web pages, annual report
Publications Management	Overseeing print/media processes often using new technology	Leaflets, internal magazines, web sites
Events management, Exhibitions	Organisations of complex events, exhibitions	Annual conferences, press launch, trade shows

Source: Alison (2010, p. 10)

Deducing from the Table One it could be seen that Public Relations is complex and can sometimes be easily misunderstood or even misinterpreted. Strategically others have inseparably associated Public Relations to involvement and presence of media. With these multi-faceted roles it is not a surprise that Public Relations has always been referred to by various nomenclature depending on the nature and needs of the institution. For instance the Botswana Qualifications Authority, refers the department which handles Public Relations issues as Communications and Customer Service; at TEVETA Zambia it is referred to as Information, Education and Communication while at TEVETA Malawi it is referred to as Corporate Affairs Division.

But regardless of what nomenclature Public Relations could be referred to the most important aspect is to ensure that the public has an accurate view of an organisation (Alison, 2010). Thus as internationalisation in TVET is gaining currency it is imperative that the general public is given accurate information. This would accord the public an opportunity to have a sound understanding of TVET which could influence positively perceptions, knowledge and attitude on TVET.

A bird's eye view of the Media in Sub Saharan Africa

At this juncture, it is evidently clear that the role of Public Relations in internationalisation in TVET cannot be discussed in isolation. One of the precursors to the effectiveness of Public Relations is the presence of channels of communication which could be used as a vehicle towards internationalisation in TVET. As earlier noted, the Sub-Saharan Region merits a special mention when it comes to studying the role of Public Relations in this regard because of the diversity of issues and challenges that could have a bearing on communication.

Therefore, for Public Relations to become instrumental in changing the perceptions, attitudes and behaviour of people towards TVET there must be some good communication infrastructure. But a closer look at Public Relations environment in the Sub-Saharan Africa reveals a number of challenges such as a huge variation in terms of access to new media and lack of communication infrastructure as major challenges. For example Tanzania with a population of 34 million has about 15 well established daily, weeklies coming out in both English and Swahili with a circulation of 4 per thousand people. There are also specialist newspapers like the Business Times and some independent TV and Radio Stations. On the other hand, South Africa with a population of 40 million has 82 national, regional dailies and weeklies mainly in English and Afrikaans with indigenous languages left out. Circulation is about 34 per thousand people. Malawi with a population 15 million has six major papers – The Nation, Weekend Nation and Nation on Sunday The Daily Times, Malawi News and Sunday Times with daily circulation in the ranges of 10,000 to 15,000 mainly in English. Nyasatimes is also fast establishing itself as an important online news source for Malawians especially those in Diasporas.

In terms of access to communication infrastructure, the International Telecommunication Union (2003). notes that cell phone subscription per 100 per in South Africa is at 27 while in Kenya is at five. But the good news is that uptake of ICT has in the recent years rapidly increased in some least developed countries (ITU, 2006). For instance Mali registered 142% while Djibouti, DRC, Niger and Sudan registered 186 %, 184%, 171 % and 139 % growth respectively. This does offer a glimmer of hope although as observed by ITU (2006) such hope is paled by challenges such as lack of response by policy makers and regulators to rapid and unprecedented developments in telecommunications markets which have emerged. For instance, ITU (2006) says there appears to be unrealistic restrictions and barriers in some countries to the developments and dissemination of the benefits of internet protocols (IP) and scarcity of ICT infrastructure and high cost of internet connectivity which has resulted into

the majority of the population in the Sub Saharan region not enjoying to the fruits of new media to the maximum.

The UK based Gyroscope Consultancy has been analysing these variations in terms of availability of information as a major challenge in Africa and has thus created what is called 'African Communications Index (ACI)' .

The ACI ranges from 0 to 100 which according to Gyroscope, the higher the index, the easier it is to plan and determine Public Relations and Corporate communications in a particular country and more cost effective it could be in the delivery of specific messages to the target audience. The higher the ACI, the higher the potential "Return on Investment" in communications activity. For instance, according to Sririmesh and Vercic (2009), South Africa with an index of 89.5 makes it easier to plan Public Relations than in Malawi which has an index of 27.85. Probably this could be the reason why those countries with lowest ACI index may not see the value for investing in Public Relations.

Such diversity is worth noting because as Sririmesh and Vercic (2009) notes, it poses challenges in terms of planning Public Relations and Corporate Communication on 'pan African' basis. This, therefore, calls the need for TVET institutions in Sub-Saharan Africa to invest adequately in Public Relations interventions in order for it to play an effective role in internationalisation in TVET.

Public Relations and the New Media

Modern Public Relations is dominated by the digital social media which has turned out to be a force to reckon with. Such social media include the Facebook, blogs, whatsapp, Linkdin and the like which are now becoming a major vehicle for conversations of various issues. The new media mostly referred to as digital media has ushered in a new era where there is independent production of content which could be shared instantly and with undue restriction. Through digital media, it has been easy for publics to form and establish relationships anywhere in the world. For instance, due to its interactive nature, web 2.0 has the ability to reinforce Grunig's notion of two-way symmetrical communication (Grunig, 2009 cited in Sison & Sheehan, 2012). Web 2.0 is a collection of open source interaction and user controlled online application expanding the field experience and knowledge and power of users as participants in business and social process

Therefore the internet technologies such as online media have altered the 'agenda setting' capabilities of the media producers. As such, the agenda setting function of the new media will depend on the PR practitioners' ability to attract interested readers, listeners and viewers to issues about TVET because "once a buzz has been generated over a particular issue, the exponential sharing of content through blogs, emails and word of mouth can provide that content with an anticipated global audience" (Danjoux, 2010, p.15). The ad-

vantage of using these in internationalisation of TVET is that once the content becomes viral it is popularised exponentially and shared among internet users thereby making TVET a seamless service.

Thus, as advanced by Grunig (2009), these digital media have the ability to make public relations practice a global, strategic and two way and interactive symmetrical or dialogical and socially responsible if used in a strategic manner.

Way Forward and Recommendations

The following are some of the recommendations could enhance the role of Public Relations in the internationalisation in TVET

- There must be aggressive marketing and PR strategies in place if the public is to appreciate what TVET can offer towards skills development.
- TVET institutions should endeavour towards positioning Public Relations within a management function to ensure that whoever is responsible for Public Relations is part of senior management team where strategic decisions that would have a bearing on Public Relations are made. For effectiveness all public relations functions within a TVET institution should be intergrated into a single entity which should be coordinating various departments responsible for communication activities.
- While appreciating the role of technicians in the day to day activities, best practices require that within the TVET insitution organisational set up there should be a senior manager who should be on top of things with capabilities to handle in matters related to Public Relations in a strategic manner
- TVET Public Relations machinery should adopt a two way or rather symmetrical public relations with abilities to conduct research, listen and manage conflict and at the same cultivate relationships with both internal and extenal publics.
- Capacity building should be encouraged in the TVET sector to ensure that those handling Public Relations issues are up to date with ICT skills on how they can harness the power of new media like website, facebook, blogs, youtube etc which have capabilities to accesserate internationalisation in the TVET sector.
- Encourage exchange visits and forum for Public Relations personnel in TVET sector where they could meet to discuss challenges and means of ehnaning issues concerning internationlisation of TVET
- Public Relations practitioners in TVET institutions should increase awareness and understanding to ensure that the public is able to appreciate the importance of Public Relations as a profession and how it can contribute to the internationalisation in TVET.

- For those TVET institutions which have no Public Relations offices, they should work towards establishing one. Such an office can assist in raising the profile of the TVET, by among others, ensuring that its programmes and activities are well-covered by the media hence enhancing attractiveness of TVET.

Conclusion

If the current trend where Public Relations is now becoming a good source of news is anything to go by, it could safely be said that the field has the potential towards internationalisation of the TVET considering its ability to serve as social and cultural agent in economic transformation in a particular society, be it outside or within (Tilson, 2008).

The paper has discussed the role of Public Relations (PR) in the internationalisation of TVET and how PR can make TVET internationally attractive. The discussion has revealed that although TVET is being recognized as instrumental for socioeconomic development in most countries, the sector is still faced with negative attitudes in the wake of its failure to provide a panacea for unemployment. Unfortunately, the media has also embraced these negative attitudes hence poor coverage and misrepresentation of information on TVET.

In conclusion the paper has argued that a vibrant PR could contribute tremendously towards making TVET global and attractive to prospective students beyond the country boundaries. Strategies like harnessing the potential of PR by among others making it a strategic management function within TVET institutions and capacity building, creation of an international platform where professionals involved in PR practices within TVET could share innovative ideas on how the national and global image of TVET can be improved hence making TVET provision an internationally seamless service.

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Empowering Communities through International TVET Networking and Collaborations

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Abstract

Two premier TVET organizations are leading the Pacific region with innovative TVET programs, projects and international training collaborations to enhance and improve the delivery of community services throughout the region. Established in 2002, the Pacific Association of Technical Vocational Education and Training (PATVET) has been facilitating and monitoring TVET programs and qualifications across the Pacific. The establishment of Fiji National University in 2010 heralded a new age for TVET in the Pacific. As the largest dual-sector university in the region with over 32,000 students, FNU is the leading TVET institution in the delivery of innovative new programs. These innovations have bridged the gap between the skilled and unskilled and paved clear training pathways and upward mobility for all in the community.

Keywords: Pacific islands, TVET, sustainability, demand-driven, empowerment, skills training, collaboration, best-practice

Introduction

TVET organizations play increasingly important roles in developing countries of the world. In the Pacific region of Oceania, there are numerous small island nations spread out over a vast area of ocean forming three sub-regions known as Melanesia, Polynesia and Micronesia, (see, Figure 1).

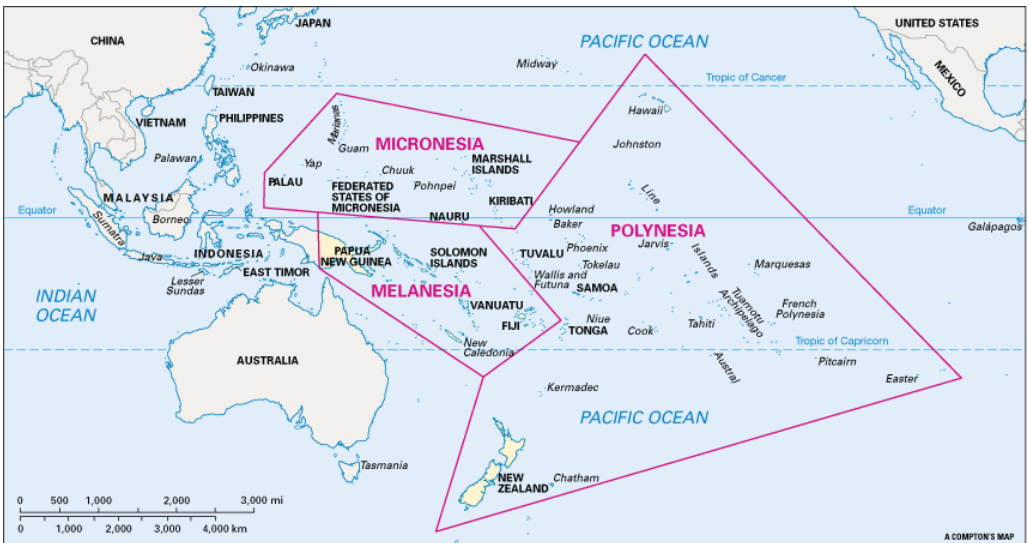


Figure 1. Map of Oceania

Many of these island nations share similar challenges such as unemployment, poverty, crime, food security and the impacts of climate change (Australian Agency for International Development, 2006; United Nations Development Programme, 2010). These challenges have prompted governments to search for ways and means of achieving national development objectives through the sustainable use of natural resources. Through the support of international donors, the Pacific Islands Forum Secretariat (PIFS) and the Secretariat of the Pacific Community (SPC) have worked to develop and improve the capacity of island nations to achieve this balance (Australian Agency for International Development, 2010). One of the most effective tools used to achieve this is education and in particular TVET. Technical Vocational Education and Training has been widely acknowledged by UNESCO, PIFS and SPC as the key to sustainable economic growth and social development in the region. Today there are numerous universities and tertiary training institutions all over the Pacific working together to develop and deliver the knowledge and skills essential for the growth and stability of the region. This paper discusses the major challenges facing island nations in the Pacific and elaborates on the important works of two leading TVET organizations in the Pacific - The Pacific Association of Technical Vocational Education and Training (PATVET) and the Fiji National University (FNU). This is in regards to their effective delivery of services in the local and regional communities.

PATVET was established in 2002 to facilitate TVET activities and programs in the Pacific and to maintain an inventory of TVET qualifications for member

island countries. The Fiji National University was established in 2010 following the merger of seven large tertiary training institutions in Fiji. It is the biggest dual-sector university in the region with emphasis on TVET and has a student population of over 32,000. PATVET is hosted at Fiji National University in Nasinu Campus, Fiji. These two premier TVET organizations have collaborated to achieve consistent growth of TVET awareness in the region, the development of relevant TVET programs, both formal and non-formal; and they have encouraged the active participation of women and people with disability in areas of TVET.

Major Challenges in the Pacific

The Pacific island countries referred to in this paper are members of the Secretariat of the Pacific Community (SPC) which include: Samoa, Tonga, Fiji, Niue, Vanuatu, Solomon Islands, Kiribati, Tuvalu, Cook Islands, Marshall Islands, Nauru and Tokelau. Other countries such as Australia, New Zealand, Papua New Guinea and French Polynesia, may also be included in regional data trends.

Socio-economic challenges of the Pacific islands

Pressures of the global economy have serious ramifications for Pacific island countries (Griffith-Jones & Ocampo, 2009; McCord, 2010). The current status of some of these islands in the twenty-first century does not look promising; with frequent political instability, ethnic violence, high rates of disease, poverty and unemployment (Australian Agency for International Development, 2006; Murray & Storey, 2003). In a speech at the Lowy Institute in July 2007, Australian Member of Parliament Kevin Rudd, while discussing the political and racial turmoil in the Pacific and the costs it would incur the people of Australia, labelled the region an 'Arc of Instability', from Timor to the Solomon Islands and down to Fiji. One of the key points outlined by Kevin Rudd on the strategy to halt the cycle of poverty and unemployment in the South Pacific is improving the systems of education. He said that, 'the most important challenge for education in the Pacific region is that schooling is not adequately equipping children with the basic skills needed to pursue further studies and training or to succeed in the labour market' (Rudd, 2007).

This shortfall in the systems of education directly contributes to unemployment, which is the most urgent problem facing Pacific Island countries (Maclean, 2009). When education systems do not produce the necessary learning outcomes and school leavers are inadequately skilled, the end result is unemployment (Fiji Islands Bureau of Statistics, 2009). This problem has been exacerbated by rural-to-urban migration as people move in search of employment to support their families or in search of better education for their children

(Gounder, 2005). When this trend continues for a period of time the consequence for any country is disastrous. High unemployment almost always leads to high crime rates, poverty and violence (Australian Agency for International Development, 2006). The current status of Papua New Guinea (PNG) with one of the highest crime rates in the world is testament to this relationship (United States Department of State Bureau of Diplomatic Security, 2011). A survey conducted in 1997 showed that 70% of urban youths in PNG were unemployed and as a consequence the crime rates increased twentyfold between 1970 and 1990 (Levantis, 1998). One major concern that Pacific leaders now have is the increasing youthful population. If these youths are inadequately prepared in school without any clear career pathways then the threat of future national instability, crime and lawlessness, as in the example of PNG, is very real (Urdal, 2004; International Labour Organization, 2010).

The Pacific 2020 Report (Australian Agency for International Development, 2006) revealed that developing Pacific Island countries with relatively high percentages of youth as per population included: Fiji 31%, Samoa, 33%, Tonga 36% PNG 39% and the Solomon Islands with the highest at 42%. In comparison, Australia has a youth population of 19%. The above figures indicate the urgent need for Pacific Island governments to effectively address youth issues such as education and employment. The Pacific 2020 Report (Australian Agency for International Development, 2006) also revealed the clear lack of employment of male youths in Pacific Island countries. The male inactive category may also be described as those with casual attitudes often seen loitering in towns and cities without purpose. This may include street children who are not normally involved in self-employment.

In summary, systems of education need to provide what Kelly and Kenway (2001) refer to as the pathway between schooling, training and employment. This is the pathway that TVET can provide (Maclean, 2009). However, this transition is currently lacking in many Pacific island nations, resulting in disillusionment of youth, and increasing unemployment. In Fiji for instance 11,428 unemployed people, including school leavers and graduates, were reportedly looking for employment between 2004 and 2005 (Fiji Islands Bureau of Statistics, 2007). The entire population of Fiji is less than one million. In 2012 the situation looked bleak for 650 teacher graduates who could not find a teaching position in the education system (Fijilive News, 2012).

2.3 Strategies for coping with the challenges of the Pacific islands

Government representatives from Pacific Island countries meeting under the banner of the Secretariat of the Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS) have adopted and implemented various initiatives

with the objective of improving education for sustainable development in the region. Two affiliated educational organisations were formed from these initiatives. These included PRIDE (Pacific Regional Initiatives for the Delivery of Basic Education) and PATVET (Pacific Association of TVET). Both organisations had specific objectives for improving basic education and relevant educational outcomes. The Pacific Islands Forum Education Ministers at a regional meeting in 2001 agreed on a Forum Basic Education Action Plan 2001, which stipulated the commitment of all members to improving the quality of education so that recognised and measurable learning outcomes were achieved, especially in literacy, numeracy and essential life skills.

Leaders also committed themselves to ensuring that skills taught through training centres and non-formal education programmes matched the requirements for employment and livelihood in both traditional subsistence and market economies (Pacific Islands Forum Secretariat, 2001). The agriculture sector is heavily under-employed in many Pacific Island countries and the lack of interest of schooled young people in agriculture continues to be a challenge for leaders. This is compounded by urban drift and the dilemma that many young people face when there is a serious mismatch between their learning outcomes and the skills they actually need to find a job (Australian Agency for International Development, 2006). A recent status report released by the ILO (International Labour Organization, 2010) revealed that the unemployment rate for all youth is the highest so far with 13.1% globally and 14.8% for East Asia and the Pacific. Female youth continue to experience higher unemployment compared to males.

According to the Pacific Islands Forum Secretariat (2001), Pacific Island countries had net primary school enrolment rates better than the average for developing countries. In spite of this success in achieving high primary enrolments, there were weaknesses of school drop-outs and repeaters, as well as deficiencies in basic numeracy and literacy. The report also stated that increasing numbers of youth leave school without adequate life skills and competencies and are unable to either further their education or gain employment. The main educational obstacles identified included: lack of financial support; poor educational infrastructure and resources; remoteness; lack of proper staffing; and the irrelevance of the curriculum for Pacific cultures and the needs of many students living in traditional villages. These are also some of the reasons there have been mixed results in the implementation of TVET in the Pacific (Lene, 2009).

Overall, there have been significant developments in education with the establishment of tertiary institutions such as Australia Pacific Technical College in four Pacific Island countries, the establishment of universities in Samoa, Solomon Islands and the establishment of Fiji National University in 2010. However, issues of unemployment, poverty, political instability and poor economic growth still persist in most island nations in the region.

Crucial Roles of TVET Organizations in the Pacific

The Pacific Association of Technical Vocational Education and Training (PATVET) and Fiji National University (FNU) play very important roles in providing, facilitating and managing relevant TVET programs in the Pacific. They have specific roles. PATVET facilitates free exchange of information among member countries and monitors the Pacific qualifications inventory, while FNU promotes and delivers a diverse range of TVET and higher education programs in Fiji and the region. Through the support of national, regional and donor partners, the two organizations strive to achieve effective delivery of community educational services at national and regional levels. The efficiency and quality of services is dependent upon several key factors:

1. Vision and Leadership - at government or institutional level
2. Government commitment and support
3. Financial support from donors and sponsors
4. Comprehensive planning of programs with wide stakeholder consultations
5. Capacity of training institutions – including facilities and trainers
6. Delivery mechanisms – using an array of modes and modern technology
7. Quality control – assessment, evaluation, feedback and improvement
8. Customer satisfaction – community relevance of training and pathways

Significant role of PATVET in the Pacific

The establishment of PATVET in 2002 by the Pacific Islands Forum Secretariat (PIFS) with the objective of consolidating information and data from member countries and the development of a Pacific Qualifications Framework. One notable success story is the network of 12 maritime training institutions in the region. Their close collaboration with local industry and their use of internationally accredited curriculum standards is an excellent working model for broader vocational training in the region. Elsewhere, the Asia Development Bank (2005) maintains that TVET skills-training in the Pacific seems to have failed to reduce youth unemployment because initiatives have been largely driven by supply and not demand. Indeed the challenge for many TVET institutions and universities is their obligation to national development rather their own interest in increasing enrolment numbers. Accordingly, PATVET has been preparing an inventory detailing TVET courses, accreditations and institutions in the region.

Strategies now adopted by the Secretariat of the Pacific Community and its TVET support partners included: strengthening of non-formal TVET to cater for the needs of the informal sector; infrastructural development of Pacific TVET institutions; improving labour market information systems to show rel-

evance of TVET in the Pacific, and the development of TVET quality assurance systems and processes. In 2007, the SPC meeting endorsed TVET as an essential and integral part of Pacific education and training. However, it was acknowledged that the failure of TVET in parts of the Pacific was because governments, regional organisations and donor organisations continued to give priority to academic education, despite the fact that TVET is the key to social and economic development in the region. The Bonn Declaration declared that,

Since education is considered the key to effective development strategies. Technical and Vocational Education and Training (TVET) must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development (UNESCO, 2004).

3.2.1 Community Services through PATVET

PATVET through its affiliated TVET Associations and national training institutions have delivered and facilitated a wide range of TVET programs, workshops, formal and non-formal trainings in the region. Effective community services depend upon the efficient delivery of information, knowledge, skills and training to people who need it most. This includes those living in isolated rural communities, villages and marginalised members of the community such as unemployed youth, the destitute, women and people with disability. Since its establishment PATVET has actively contributed to the following initiatives:

1. Establishment of TVET associations in island member countries such as Fiji, Vanuatu and Solomon Islands.
2. Initiated and facilitated the collaboration of TVET institutions in the region with Fiji National University for mutually beneficial working relationships.
3. Initiated and facilitated the TVET training of Fiji Prison inmates at Fiji National University with formal accreditations and qualifications.
4. Promoted the participation of women and girls in male-dominated TVET programs such as Engineering, Carpentry and Architecture.
5. Promoted and facilitated the participation of people with disability in suitable fields of TVET such as Computing, Automotive engineering, Catering and Tailoring.
6. Promoted and initiated the use of rural training centres for formal and non-formal TVET training as conducted in Fiji and Vanuatu.
7. Promoted Pacific TVET success stories and best practices in international conferences for future international collaborations.

8. Encouraged the paving of clear TVET pathways for all members of the community to progress from unskilled to skilled status and to opportunities for employment.

3.2.2 Articulation of community services through PATVET

The activities and initiatives of PATVET and its affiliates have directly and indirectly affected the lives of people in the community in the following ways: Empowerment of school dropouts, unemployed youths and adults through skills training in a variety of TVET programs.

1. Empowerment of women and girls with skills training in TVET programs.
2. Empowering people with disability through TVET for an improved way of life and more economic participation.
3. Empowerment of community and village elders and youths in remote rural communities and outlying islands with basic TVET skills to improve their standards of living and independence.
4. Promotion and support for entrepreneurial, income-generating, self-employment activities.
5. Skills development and training to meet local industries and employer expectations.
6. Skills development and training for overseas markets and employment.
7. Creating employment and self-employment opportunities for all members of the community including marginalized groups.
8. Encouraging and promoting subsistence and commercial agriculture through public awareness and educational programs.
9. Encouraging and initiating collaborations between people, groups and institutions for exchange of innovative ideas and best practices in TVET.
10. Promoting the articulation and cross-crediting of qualifications between institutions and organizations.
11. Promoting healthy living through community education.
12. Promoting and initiating the sustainable use of natural resources.

3.3 Fiji National University TVET programs

The most significant educational reform in favour of TVET in Fiji is the formation of Fiji National University (FNU). This new university, which became operational in January 2010, merged seven major tertiary training institutions into what has become the region's largest dual-sector university with an estimated 32,000 students. The institutions that merged to form FNU were: Fiji Institute of Technology, Fiji School of Nursing, Fiji School of Medicine, Fiji College of Agriculture, Fiji College of Advanced Education, Lautoka Teachers

College and Training and Productivity Authority of Fiji. A major advantage of this merger was that students in TVET fields would have access to degree programs with university accreditation.

3.3.1 Conditions for Demand driven TVET

The changing socio-economic situations in the Pacific resulted in high demand for TVET programs. The Fiji Government initiated this with the formation of FNU. In 2013 the Fiji Government offered a \$5 million (USD\$2.7m) TVET scholarship for school leavers in Fiji to encourage training in a variety of priority areas identified by government. In the same year the Fiji Government also offered \$0.5 million (USD\$2.7m) for Commercial Agriculture scholarship to encourage youths to venture into areas of Agriculture specializations. Across the Pacific and Fiji the conditions demanded TVET programs. The key factors are:

1. Increase in general unemployment & poverty.
2. Lack of white-collar employment opportunities.
3. Lack of employable skills for private sector.
4. Increasing demand for skilled workers by employers.
5. Increasing demand for Fiji skilled workers overseas.
6. Increased interest in Commercial Agriculture.
7. Increased interest in Natural resource management.
8. Increased demand for youth participation in economic activities.
9. Increased demand for rural skills training.
10. Increased interest in entrepreneurship and self-employment.
11. Increased earning potential of skilled workers compared to white collar workers.

3.3.2 Formal TVET programs

TVET programs offered at Fiji National University cover a wide range of fields. These programs come under the ambit of the College of Engineering Science and Technology (CEST), College of Humanities and Arts (CHE), College of Agriculture Forestry and Fisheries (CAFF), College of Business, Hospitality Tourism Studies (CBHTS) and the National Training Productivity Centre (NTPC). Courses are offered at Certificate, Diploma and Degree levels. Some of these fields are:

1. Engineering – Avionics, Automotive, Electrical, Electronics, Computing and Civil
2. Building – Carpentry, Joinery and Plumbing
3. Mechanical – Welding, Fabrication, Refrigeration and Plant
4. Agriculture – Agro-forestry, Aquaculture, Fisheries, Poultry and Animal Husbandry

5. Hospitality – Hotel management, Catering, Cookery and Baking
6. Arts – Sports, Music, Screen printing, Hair dressing and Film & Television

With a wide variety of TVET programs, FNU TVET also offers clear pathways for upward progression in skills and qualifications. This begins from primary and secondary education and progresses through to higher education degree qualifications as illustrated in the Figure 2 below.

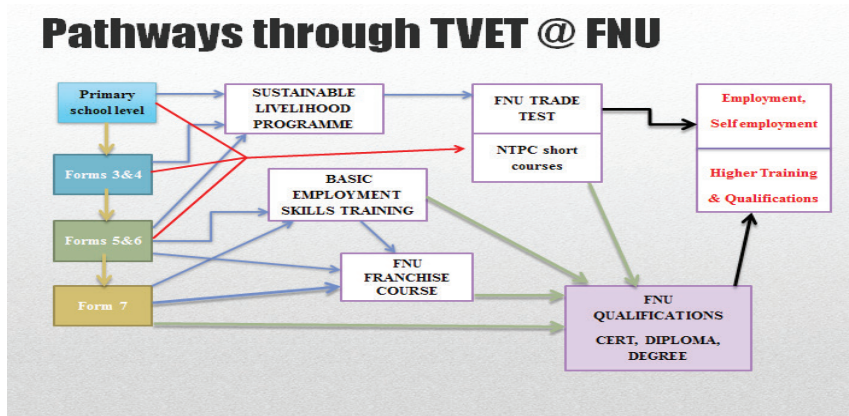


Figure 2. Pathways through Fiji National University TVET

Three innovative formal TVET programs offered at FNU are:

1. BEST, Basic Employment Skills Training – This is a new program introduced in senior secondary levels (Years 11, 12 and 13) in Fiji. It gives all students a TVET alternative program which they could pursue with their normal academic secondary school curriculum. There are 14 TVET programs which students could choose from organized by FNU-NTPC. Upon completion at Year 13, they have a choice whether to pursue their main academic career path or pursue their TVET alternative. This program provides students with a second option career pathway.
2. FNU TVET Franchise Courses – This is another innovation and involves the franchising of FNU Certificate level courses in 40 secondary schools throughout Fiji. The advantage of this arrangement is that students do not have to leave their community schools to attend university in the urban centers. This makes university level TVET education accessible and convenient for many young people in remote rural communities around Fiji.
3. NTPC short courses – FNU TVET short courses at NTPC are open to all interested students, school leavers, school dropouts, young adults, and adults in the community because the minimum entry requirement is quite flexible. At the completion of each short course, participants receive a completion certificate of their TVET trade. These certificates create a

pathway into a full Trade Certificate program at the College of Engineering Science and Technology.

3.3.3 Non-formal program

The main non-formal TVET program offered by FNU is SLP, Sustainable Livelihood Program. This program is funded by the Fiji Government with an annual grant of \$1.8million (USD\$1million). The primary objective of this programme is to provide relevant skills training to people in remote rural communities around Fiji. Trainers from FNU travel to remote communities and use locally existing classrooms and community halls to deliver training for men and women. The concept behind the training was to equip participants with skills to become independent and to be able to assist other members of their community. In addition some may use the knowledge and skills for entrepreneurial purposes. This program also offers an opportunity for participants to progress into a NTPC short course or to have their skills tested at the NTPC Trade Testing facilities so that they can get the relevant certification.

3.3.4 Delivery of community services through FNU

The TVET programs and rural activities of FNU have directly and indirectly affected the lives of people in the community similar to the impact of PATVET. These are:

1. Provision of qualification and career pathways.
2. Opportunity for progress of TVET students into degree programs.
3. Empowerment of school dropouts, unemployed youths and adults through skills training in a variety of TVET programs.
4. Empowerment of women and girls with skills training in TVET programs.
5. Empowering people with disability through TVET for an improved way of life and more economic participation.
6. Empowerment of community and village elders and youths in remote rural villages and outlying islands with basic TVET skills to improve their standards of living and independence.
7. Promotion and support for entrepreneurial, income-generating, self-employment activities.

Conclusion

In conclusion the important contributions of PATVET and FNU in the delivery of community services in the Pacific region have resulted in increased awareness and interest in TVET. There is increased collaboration and participation of tertiary institutions across the region and increased participation and support of governments and donor agents in TVET activities and programs.

New innovative programs such the Sustainable Livelihood Program and Basic Employment Skills Training initiated by FNU have received interest in other Pacific island countries. PATVET facilitates and promotes the sharing of best practice ideas that could be adapted or replicated in other parts of the region and the world. At the end of it all is the question about the satisfaction and empowerment of people in the community. TVET has been acknowledged as the key to sustainable economic and social development all over the world. Through TVET programs initiated and facilitated by PATVET and FNU, the lives of many people have been uplifted and improved. School dropouts, unemployed youths, women, and people with disability are empowered with skills and knowledge to live independent and productive lives in their communities. The achievements of PATVET and FNU stem from a mutual commitment and vision to develop relevant programs that meet the demands and expectations of people, communities, industries and governments of the Pacific.

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An Analysis of Issues in Automobile Mechanics' Workplaces in Nigeria

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Abstract

This study analyzed issues in automobile workplace in Nigeria using a 5-point scale questionnaire on 200 purposively sampled respondents from Abuja and Minna, Nigeria. Mean, Standard Deviation and t-test were used to analyze data at .05 level of probability. Findings of the study revealed among others that defective practices dominates automobile workplace and poses challenges to maintenance of modern automobiles. The current maintenance practice falls below international best practice needed for effective maintenance of automobiles; as a result automobile artisans, craftsmen and technicians finds it difficult to efficiently maintain and repair the electronic and computer related automobiles faults. The study recommended among others that stakeholders should continually organize training for up skilling of automobile practitioners in Nigeria.

Keywords: Automobile, Automobile mechanics, Automobile workplaces, Automobile mechatronics, Maintenance.

Introduction

The automobile, motor vehicle or automotive vehicle refers to a self-propelled vehicle or wheeled vehicle driven by an internal combustion engine and used for the transportation of goods and people on ground (land). An engine provides the power to move or propel the motor vehicle. The desire by automobile makers to produce more comfortable vehicles has bought a lot of technological innovations in modern vehicles. The automobile components have changed from being highly mechanical to electro-mechanical as a result of the use of automobile mechatronics technology to achieve low emission, better fuel economy, improved comfort and safety. This has made modern automobiles to be dominated by electronic components. To buttress this, Hillier and Coombes (2004), and Kirpal (2006b) revealed that, there have been a transi-

tion from coil ignition system to electronic ignition system, carburetor fuel supply system to electronic injection system, pure electrical control system to electronic control unit (ECU), manual braking system to anti-lock braking system (ABS), manual transmission system to automatic transmission incorporated with torque converter ,among others in today's automobiles.

For these new breeds of automobiles to be in good working condition, they need regular maintenance and repairs. Automobile maintenance is the practice of keeping the automobile in good working condition under varying requirements of engine loads. In Nigeria, maintenance activities take place at the automobile workplace. Automobile workplace denotes a place where all forms of maintenance, servicing and repairs are carried out on vehicles by automobile mechanics. The term automobile mechanic refers to a person who is trained to carry out maintenance, servicing and repairs on motor vehicles and earns a living by doing so. According to the National Automotive Council (2010), the automobile workplace in Nigeria could either be in small automobile workshops which exist in isolation and also in clusters at mechanic villages located in various towns or in big workshops/authorized service stations approved by vehicle manufacturers such as Ford, Peugeot automobile, Toyota, Honda among others; usually located in major cities only.

To cope with the new trends, emphasis in the automobile workplace has shifted from pure manual method to automobile mechatronics characterized by the use of diagnostic scan tools, equipment and machines to carry maintenance and repair job. Automobile mechatronics is a field of mechanical engineering that integrates mechanical, electrical and computer-based technologies in the engineering design, production and maintenance of automobiles (Hillier, Coombes & Rogers, 2006). With the current practice in the automobile workplace, a modern automobile mechanic is expected to be able to perform a variety of maintenance and repair tasks which among others include: should be able to carry out inspection and quality check of engine components, sensors and actuators to detect faults; should be able to use automobile scan tools to troubleshoot and diagnose vehicle faults; should be able to replace worn parts to prevent failure; should be able to safely dismount engine units, service, repair, adjust and re-assemble to specifications; should be able to interpret Diagnostic Trouble Code (DTC) as reported by the ECU through the scan tool; and should also be able interpret and use vehicle identification number (VIN) in selecting components for replacement; and also carry out various forms maintenance to bring a mal-functioned vehicle back to its correct working condition. (Okoro,2005).

However these capabilities have not been exploited for the maximum benefit of Nigerians due to varieties of problems that bedeviled the automobile industry and workplace such as: low participation of government in the informal automobile sector, defects in the traditional apprenticeship system of training,

inadequacy of the Nigerian vocational and technical education curriculum, dearth of supporting local industries, massive uncontrolled importation and of dumping of fairly used vehicles (Tokunbo), inconsistency in tariff and government protection policies, low patronage by government and the general public, absence of low cost, long term loans, poor involvement in technology transfer activities; research and development (R & D) activities and staff capacity building (Odigiri & Ogwo, 2013).

Hence it appears as if the bulk of automobile maintenance practitioners: automobile artisans from the informal sector; automobile craftsmen, master craftsmen, technicians, technologists and engineers graduating from technical colleges, polytechnics and the universities are not properly trained for the maintenance challenges posed by modern vehicles. Eric (2008) and Elobuiké (1999) blamed the curriculum for not being adequate and irrelevant to offer enough of the skills needed to meet modern automobile maintenance challenges. The automobile maintenance practitioners must therefore have a good understanding of the principles guiding the traditional mechanical systems as well as the new electronics and computer-based systems to be able to cope effectively with the sudden increase in the use of electronic technologies in modern vehicles (Jain & Asthana, 2006). They further stated that automobile practitioners now require higher training and retraining plus good vocational education to be able to catch up with the diverse issues that arise in the automobile workplace as a result of sophistication in maintenance tools, equipment, machines plus the use of numerous sensors and actuators which has further worsened the situation for mechanics who have no in-depth knowledge of sensors and actuator principles.

The extent of availability of technical knowledge and skills in the utilization of computer scan tools and other maintenance equipment and machines in the Nigeria automobile workplace is worrisome as most vehicle users visit auto mechanic workshops with fear of their vehicles being mal-repaired or temporarily repaired only to further worsen the situation later (Odigiri & Ogwo, 2013). The frequent automobile accident on Nigeria roads resulting from component failures has been attributed to poor maintenance practices. This has led to bad repairs of vehicles by incompetent auto mechanics that are not conversant with the mechatronics technologies in modern vehicles (Ogwo, 2004). Egbuchulam (2000) emphasizes the need for periodic review of the training curriculum for all categories of automobile practitioners both in the formal and informal sector if the gap between the deficiency in what is obtained in the automobile workplace and what is expected is to be bridged efficiently. From the foregoing, it is obvious that the caliber of Nigeria automobile mechanics that dominated the automobile workplace is not fully trained for the Herculean maintenance task posed by modern automobiles. The researcher therefore analyzed the issues in

the automobile workplace in Nigeria and ex-rayed the deficiencies that characterized the automobile maintenance practitioners.

Research Questions

The following research questions guided the study:

1. What are the issues that characterized the automobile workplace in Nigeria?
2. How effective are the job skills possessed by automobile mechanics' in meeting the maintenance needs of modern vehicles?
3. What are the training needs of automobile maintenance personnel in relation to innovations in modern vehicles?

Research Hypotheses

The following null hypotheses were tested at .05 level of significance:

H₀₁: There is no significant difference in the mean responses of automobile technology teachers and automobile maintenance personnel on the issues that characterized the automobile workplace in Nigeria.

H₀₂: There is no significant difference in the mean responses of automobile technology teachers and automobile maintenance personnel on the effectiveness of the job skills possessed by automobile mechanics' in meeting the maintenance needs of modern vehicles.

H₀₃: There is no significant difference in the mean responses of automobile technology teachers and automobile maintenance personnel on the training needs of automobile maintenance personnel in relation to innovations in modern vehicles.

Methodology

The study adopted survey research design to conduct an analytically survey on the issues in the automobile mechanics workplace in Nigeria. Survey design was considered suitable because it allows a group of people or items representative of the entire group to be studied by collecting and analyzing data from people or items (Olaitan & Nwoke,1999). A purposive sampling technique was used to select the study areas which are: Zuba-Abuja and Minna because there are good concentration of auto mechanic workshops and service centers in these cities. 200 respondents comprising of 60 automobile technology teachers and 140 automobile maintenance practitioners was used. A 45 item questionnaire

with 5-point scale response option was used to collect data from respondents. The questionnaire was structured to indicate the degree to which respondents agree to each item as strongly agree (SA), agree (A), undecided (UD), disagree (D) and strongly disagree (SD).

The response category was assigned numerical values as 5,4,3,2,1. The questionnaire was validated by three experts chosen from Peugeot maintenance /dealership outlet and automobile technology instructors/lecturers. Corrections were made before it was administered. The weighted Mean and Standard Deviation (SD) were used to answer the research questions. Therefore items with mean score below 3.00 (cut off point) were regarded as disagreed while those with mean score of 3.00 and above were regarded as agreed. T-test statistics was used to test the hypothesis at 0.05 level of significance. The t-critical (t-table) value for accepting or rejecting the null hypotheses was ± 1.98 .

Results

Research Hypotheses

Analysis on Table 1 shows that 14 of the items presented had their weighted mean values ranging from 3.25-4.36. These values are above the cutoff point of 3.00 which implies that the respondents agreed to the items on the issues that characterized the automobile workplace in Nigeria. The respondents however disagreed with item 14 with a mean score of 2.61. The t-test analysis from table 1 revealed that all the items had their t-calculated (t-cal) values less than the t-table value of ± 1.98 . This implies that there was no significant difference in the mean ratings of the responses of the respondents on the issues that characterized the automobile workplace in Nigeria. Hence the null hypothesis was accepted.

H_{01} : There is no significant difference in the mean responses of automobile technology teachers and automobile maintenance personnel on the issues that characterized the automobile workplace in Nigeria.

Table 1: T-test analysis of mean responses of respondents on the issues that characterized the automobile workplace in Nigeria.

S/N	ITEM STATEMENT	X_1	SD_1	X_2	SD_2	t-cal	X_t	REM
1	Vocational education level of automobile mechanics is generally low.	4.40	0.50	3.80	0.58	0.34	4.10	NS
2	Absent or inadequate diagnostic scan tools, equipment & machines for efficient maintenance.	3.62	0.40	3.08	0.46	0.88	3.35	NS

3	Deficiency in the skills needed in the use of diagnostic scan tools, equipment & machines.	4.10	1.10	3.15	0.40	0.62	3.63	NS
4	They carry out repairs not based on technical reasons but based on previous experience similar to the one at hand.	3.68	0.38	3.30	0.72	1.25	3.49	NS
5	The rudiments of teaching is essentially lacking in the automobile workplace.	3.70	1.50	4.13	0.50	1.21	3.92	NS
6	Non existence of a standard code of practice to guide auto mechanics in job delivery.	4.36	0.95	3.92	1.00	0.60	4.14	NS
7	Automobile mechanics learn only when vehicles are brought to the workshop.	4.18	0.74	4.25	0.81	0.50	4.23	NS
8	Strict supervision, workshop safety and occupational health are not stressed by the trainers.	3.34	1.12	3.17	0.61	0.59	3.25	NS
9	Non availability of a clearly defined curriculum content to be mastered by trainee; learning is presented haphazardly & is informal.	4.10	1.40	4.12	0.60	0.50	4.11	NS
10	There is no individualized training programme for trainees in the automobile workplace.	4.21	1.25	4.51	0.75	0.21	4.36	NS
11	Relevant subjects like record keeping, communication skills and work ethics are not incorporated in the training process.	4.18	0.45	3.81	0.65	1.08	4.00	NS
12	Most automobile mechanics are not computer literate & cannot handle computer related issues during maintenance.	4.40	1.42	4.10	0.75	1.12	4.25	NS
13	Teaching of theoretical principles does not exist in the automobile workplace.	4.11	0.55	4.13	0.91	0.18	4.12	NS

14	Authorized workshops or service stations focuses more on maintenance business than training.	2.60	0.66	2.62	0.82	0.65	2.61	NS
15	Method of evaluation of trainees is poor plus absent of a concrete and workable curriculum for teaching skills.	4.10	0.75	4.40	1.55	1.02	4.25	NS

REM=Remark, NS=Not Significant

Respondents agreed with item 17,18,20, 21,23, 24,27,28, and 29 with their weighted mean values ranging from 3.10-4.26. Since the values are above the cutoff point of 3.00, it indicates that the respondents agreed to all the items as concerning the effectiveness of the job skills possessed by automobile mechanics' in meeting the maintenance needs of modern vehicles. The table however, showed that the respondents disagreed with item 16,19,22,25,26 and 30 with weighted mean ranging from 2.30-2.81. T-test analysis from table 5 revealed that all the items had their t-cal values less than the t-table value of ± 1.98 . This implies that there was no significant difference in the mean ratings of the respondents on the effectiveness of the job skills possessed by automobile mechanics' in meeting the maintenance needs of modern vehicles. Hence we uphold the null hypothesis for the 15 items (See Table 2 for the mean ratings of the statements).

H₀₂: There is no significant difference in the mean responses of automobile technology teachers and automobile maintenance personnel on the effectiveness of the job skills possessed by automobile mechanics' in meeting the maintenance needs of modern vehicles.

Table 2: t-test analysis of mean responses of respondents on the effectiveness of the job skills possessed by automobile mechanics' in meeting the maintenance needs of modern vehicles.

S/N	ITEM STATEMENT	X ₁	SD ₁	X ₂	SD ₂	t-cal	X _t	REM
16	Automobile mechanics can efficiently use scan tools to carry out diagnosis & repairs.	2.72	0.60	2.89	0.80	0.46	2.81	NS
17	Auto mechanics can effectively service manual gear box.	3.26	0.20	4.21	0.50	0.89	3.74	NS

18	They can repair faulty clutch.	4.19	0.75	3.78	0.25	0.78	3.99	NS
19	Automobile mechanics can conduct routine service & repairs on automatic transmission.	2.37	0.55	2.90	0.65	1.43	2.64	NS
20	They can efficiently service the braking system.	4.13	0.60	3.23	0.80	1.23	3.68	NS
21	Automobile mechanics can efficiently maintain carburetor fuel system.	4.21	0.76	3.33	1.31	0.64	3.77	NS
22	Automobile mechanics can repair faults in the electronic fuel injection system.	2.56	0.84	2.11	0.81	0.56	2.34	NS
23	Auto mechanics can service and replace spark plugs in modern vehicles.	4.13	1.05	4.21	0.14	0.55	4.17	NS
24	They can service conventional coil ignition system.	4.26	0.68	4.25	1.01	0.54	4.26	NS
25	They can efficiently repair faults in the electronic ignition system.	2.65	0.83	2.43	0.70	0.35	2.54	NS
26	They can service & maintain the electronically controlled systems of the vehicle.	2.41	0.82	2.97	0.65	1.06	2.69	NS
27	Auto mechanics can effectively repair starter motors & alternators.	3.05	0.48	3.16	0.33	1.16	3.10	NS
28	They can efficiently maintain vehicle cooling system.	3.10	0.47	3.33	0.46	0.32	3.22	NS
29	They can service vehicle exhaust system.	3.41	0.49	3.40	0.55	0.77	3.41	NS
30	Automobile mechanics can clear (fault indicator light) check engine light from repair vehicles.	2.57	0.67	2.03	0.33	1.32	2.30	NS

Table 3 shows that all the items presented had their weighted mean values ranged from 3.16-4.35. This values are above 3.00 indicating that the respondents agreed to the items as the training needs of automobile maintenance personnel in relation to innovations in modern vehicles. The t-test analysis from table 6 revealed that all the items had their t-cal values less than the

t-table value of ± 1.98 . This implies that there was no significant difference in the mean ratings of the responses of the respondents on the training needs of automobile maintenance personnel in relation to innovations in modern vehicles. Therefore we fail to reject the null hypothesis.

H_{03} : There is no significant difference in the mean responses of automobile technology teachers and automobile maintenance personnel on the training needs of automobile maintenance personnel in relation to innovations in modern vehicles.

Table 3: t-test analysis of mean responses of respondents on the training needs of automobile maintenance personnel in relation to innovations in modern vehicles.

S/N	ITEM STATEMENT	X_1	SD_1	X_2	SD_2	t-cal	X_t	REM
31	Regular review of the automobile technology curriculum to cope with new challenges in automobile maintenance.	3.74	0.40	3.65	0.70	0.44	3.69	NS
32	Organizing training & retraining courses to upgrade technician's skills.	3.64	0.54	2.73	0.11	0.83	3.19	NS
33	Automobile mechanics need training in the use of diagnostic scan tools, equipment & machines for maintenance & repairs.	3.17	1.20	3.80	1.30	0.67	3.49	NS
34	They need training in basic computer skills & its application to automotive maintenance.	3.26	1.50	3.06	0.45	1.26	3.16	NS
35	They need training to carry out diagnosis on electronically controlled systems of the vehicle.	3.34	0.76	4.21	0.44	1.17	3.78	NS
36	Automobile mechanics need training in the interpretation & use of vehicle identification number (VIN) for accurate component replacement.	4.06	1.45	3.95	1.01	0.65	4.01	NS
37	They need training in the production, interpretation, & use of engineering sketches & service manual for maintenance work.	3.15	0.66	3.25	0.68	0.53	3.20	NS

38	They need training in carrying out effective workshop organization & management.	4.60	0.52	4.10	0.64	0.56	4.35	NS
39	They need training for effective communication, team work & to establish good customer relationship in the automobile trade.	3.70	1.22	3.76	1.25	0.66	3.73	NS
40	Automobile mechanics need training on how to apply basic engineering science related to automotive operations.	4.02	0.76	4.38	0.69	0.23	4.20	NS
41	Auto mechanics need training on how to apply basic welding techniques in automotive maintenance work.	4.04	1.00	4.02	0.65	1.19	4.03	NS
42	Needs training on how to carry out basic soft soldering of vehicle electrical wiring & components.	4.08	0.55	3.40	0.57	1.15	3.74	NS
43	They need training on how to examine accident vehicles to determine extent of damage or malfunction.	4.31	1.11	3.89	1.25	0.27	4.10	NS
44	Automobile mechanics need training on how to test drive a modern vehicle to ascertain the efficiency of replaced components.	4.35	0.90	3.05	1.12	0.87	3.70	NS
45	They need training in the maintenance, handling, and storage of diagnostic scan tools, equipment & machines.	4.36	0.85	4.78	0.74	1.22	4.57	NS

Discussion of Findings

Table 1 shows that 14 of the items presented had their weighted mean values ranged from 3.25-4.36. These values are above the cutoff point of 3.00 which implies that the respondents agreed to the items on the issues that characterized the automobile workplace in Nigeria. The adoption of trial and error method in carrying out repairs as observed is due to the deficiency in the rudiments of teaching skills in the automobile workplace. Also the automobile mechanics learn only when vehicles are brought to the workshop. This was

supported by Odigiri and Ogwo (2013) who lamented that most modern automobiles suffer trial and error attempts for faults diagnoses and repairs in Nigeria's automobile workplace. They added that these trial and error challenges are more when automobiles with auto-active automatic transmission, electronic fuel injection and variable valve timing intelligence developed faults. In this regards, Elobuiké (1999) revealed that, this trial and error practice causes most faults repaired by automobile mechanics to be temporary and only to appear within a shorter time. Alan (2003) also lamented on the issue of non compliance with the standard sequence in examining automobile problems common among informal sector automobile mechanics in Nigeria.

The disagreement to item 14 is an indication that in as much as authorized workshops carries out maintenance services in return for financial reward; they also engage their staffs in periodic training to update their work skills. However, Egbuchulam (2000) revealed that the training offered by authorized workshops are only inform of on the job training which focuses on empowering workers with the requisite work skills for effective performance in the use of diagnostic scan tools, equipment & machines for maintenance & repairs of modern vehicles. These authorized workshops or service stations in the course of their training focuses more on component nomenclature, identification, selection ,utilization and correct diagnosis and service procedure (Hillier & Peter 2004; Nice, 2001a).They added that correct identification and selection of appropriate work tools is an imperative step to effective maintenance of modern automobiles.

The data analyzed in table 2 revealed that the respondents agreed with item 17, 18, 20, 21,23, 24,27,28, and 29 with their weighted mean values ranging from 3.10-4.26. It indicates that the respondents agreed to all the items as concerning the effectiveness of the job skills possessed by automobile mechanics' in meeting the maintenance needs of modern vehicles. Experience shows that the automobile mechanics finds it difficult to maintain faults on electronically controlled systems because of their deficiency in the required automobile mechatronics work skills. This is in agreement with the findings of the National Board for Technical Education (NBTE),(2003), which revealed that most Nigeria automobile maintenance practitioners: artisans, craftsman and technicians can effectively carry out automobile maintenance on mechanical carburetors, contact breaker ignition system, braking system, starter motors ,clutch and other non electronic automobile systems.

NBTE stressed the need for automobile maintenance practitioners to go beyond merely repairing mechanical systems and make effort towards acquiring needed skills for maintenance of electronic systems in other to ensure attainment of their expected job task. NBTE also pointed out that automobile maintenance practitioners are expected to be able to test, diagnose, service and completely repair any fault on the motor vehicle to the manufacturers' specification.

The findings of the study specifically revealed that the respondents disagreed with items 16,19, 22,25,26 and 30. The respondent's disagreement to these items agrees with the opinion of Ogwo (2004) who in a related study, revealed that most modern motor vehicles suffer disrepair in the hands of Nigeria automobile mechanics. He added that out of ignorance, minor faults are complicated to cause further damage in the automobile electronic system. In the formal sector technical and technological institutions, Odigiri and Ede (2010) and Maigida (2013) complained of the deficiency in the Nigeria curriculum used for training various categories of automobile maintenance personnel.

They blamed curriculum for been rigid for several years and thus deficient in the recent technological knowledge and work skills required for effective maintenance of modern automobiles. This has created a gap between what the school curriculum offers and what is obtainable in the automobile workplace. Consequently the needed work skills for effective maintenance of new breeds of automobiles become a challenge to most auto mechanics in Nigeria. In the informal automobile sector, the Nigeria traditional apprenticeship system of training is responsible for the deficiency in the needed work skills for effective maintenance of modern motor vehicles. Despite the contribution of the informal automobile scheme to job creation, self reliance and national development; there seem to be numerous lapses and defects in the Nigerian apprenticeship system. Okoro (1993) lamented that the training it provided falls below modern training procedures that characterizes the modern apprenticeship.

The training is unorganized, devoid of formal orientation and lacks structured curriculum for training. What is taught depends on the job or maintenance problem at hand. The mode of training and instruction is mostly by observation, practice, and trial by error. Apart from the unemployment and underemployment suffered by graduates of these formal and informal automobile sectors, technical and technological institutions, other consequences are that, the automobile mechanics demonstrate poor maintenance practices in the automobile workplace.

Table 3 showed that all the items presented had their weighted mean values ranged from 3.16-4.35. These values are above 3.00 indicating that the respondents agreed to the items as the training needs of automobile maintenance personnel in relation to innovations in modern vehicles. This shows that the current challenging issues concerning ineffectiveness in modern automobile maintenance can be improved upon when most of the training needs outlined in Table 3 are provided. The opinions of the respondents on the need to train automobile mechanics was supported by Okorie (2000) who stated that the new technologies in modern automobiles demand new work skills and therefore new training is required. He added that coping with such changes in automobile technology and maintenance skills requires periodic training and re-training of automobile practitioners in order to empower them with

the requisite technical knowledge and maintenance skills needed for effective maintenance of modern automobiles. This in turn requires regular review of automobile technology curriculum for both students and automobile instructors so that school programs can reflect the automobile work place (NBTE, 2002). On the hypotheses, the study found out that there was no significant difference in the mean ratings of the responses of the respondents on the issues analyzed in the automobile workplace. Therefore we uphold the null hypotheses (H_{01} , H_{02} , and H_{03}) for all the items.

Conclusion

Based on the findings of the study, it is obvious that a lot of issues exist in the Nigeria automobile workplace which threatens the effectiveness of the maintenance work done on modern motor vehicles. The issues of skill deficiency, technical incompetency, computer illiteracy and equipment inadequacy that dominate the Nigeria automobile workplace falls below the standard practice needed for effective maintenance of modern automobiles. The maintenance problems associated with the use of modern diagnostic scan tools, equipment and machines in the automobile workplace is also numerous due to the deficiency in standard performance skills and obsolete skills possess by most automobile technicians. Therefore, there is need to equip all categories of automobile maintenance personnel with the requisite training and work skills to enable them overcome the maintenance challenges that dominate the automobile workplace in Nigeria.

Recommendations

On the basis of the study findings, the researchers recommend the following: The National Automotive Council of Nigeria (NAC) should periodically organize practical training in the work skills requisite for the improvement of the maintenance activities in the automobile workplace.

1. The National Board for Technical Education (NBTE) and the National Automotive Council of Nigeria (NAC) in collaboration of other Technical and Vocational Education and Training (TVET) experts should develop a concrete and workable practical training curriculum for training all cadres of automobile mechanics and automobile instructors.
2. The federal, state and local government should collaborate with NBTE, NAC and other TVET experts to standard the programme implementation, operation and certification for all categories of automobile maintenance personnel.

3. The National Board for Technical Education (NBTE) should develop modalities to monitor and ensure that instructions in the new technological innovations and requisite maintenance skills in automobiles are fully and regularly implemented in technical and technological institutions so as to enable students to acquire the new work skills and technical knowledge needed for effective maintenance of modern motor vehicles.
4. The National Universities Commission (NUC), National Commission for Colleges of Education (NCCE), curriculum planners and developers should regularly update and upgrade the curriculum of automobile technology and the curriculum for training of automobile teachers to incorporate the new technological innovations in automobiles in order to equip the teachers with the technical and pedagogical skills needed to facilitate teaching and learning of new work skills.
5. Periodically organizing retraining courses to update and upgrade the work skills of technicians.
6. Establishment of more functional automobile skill acquisition centers and also establishing strong linkage between auto industries and training institutions to enhance availability of new technological information and training required to improve the automobile workplace.
7. Government at various levels, relevant ministries and industries, wealthy Nigerians and other stakeholders should collaborate to fund and supply adequate automobile training facilities to vocational and technical training institutions and training centers to improve the maintenance activities in the automobile workplace.

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Making the Case for Structured Professional Development: Will It Positively Impact Student Outcomes at the Post-Secondary Level?

John S. Gaal

USA

Abstract

Definitions for what constitutes a high-quality or highly-qualified K-12 teacher have been floating about since the implementation of No Child Left Behind in 2002. As 2015 approaches, policy-makers are now turning this focus towards post-secondary educators. Studies exist, both pro and con, suggesting that PhDs who teach in their area of expertise directly impact their students' understanding of related subject matter. This author proposes to further investigate the issue of whether or not structured professional development, in the context of teacher training for full-time professors holding PhDs, positively impacts student outcomes. The findings apply to CTE by means of studying professors within schools of business who teach graduate students who are seeking the MBA degree for job-related purposes (i.e., promotion, raise).

Keywords: teaching skills, post-secondary, technically competent, tenure and promotion, professional development, professional graduate degree

Introduction

Across America, until recently, the public K-12 school system required that all teachers have coursework related to the art and science of teaching before they were allowed to begin their teaching careers. As such, having served on a number of commissions—related to improving K-12 education—in the state of Missouri and having taught at a local university as an adjunct professor since 1996, this author has often wondered if teacher quality efforts mandated by the US Department of Education that apply to secondary (high school) teachers exist for post-secondary (university) professors. Accordingly, Arum and Roksa (2011) argue that, "...in the past decade, elementary and secondary educators have come under increased pressure to close the achievement gap...

discussion of the responsibility of college faculty to address similar gaps has been virtually absent or ignored” (p.65). In the mid-2000s, as this author prepared his doctoral dissertation, it became evident that there were certain provisions within the No Child Left Behind (NCLB) Act allowing school districts to set a benchmark for teacher quality based on national standards. Granted, as time passed, states and local school districts found ways to manipulate and/or side-step some of these provisions. Nonetheless, for the public’s purview, NCLB defines a highly-qualified K-12 teacher, as follows:

1. Has obtained full state certification or passed the state licensing exam and does not have either of these requirements waived on an emergency, temporary, or provisional basis; 2. Holds a minimum of a bachelor’s degree; and 3. Has demonstrated competency in the subject area(s) taught. (OESE, 2005, p. 2)

To this end, it appears that time has come, as Addo (2014) reports the Obama Administration plans to design and implement a ranking system for colleges based on how well they serve their students (i.e., via graduation rates, job placement rates). Without a doubt, much of this scrutiny has been exacerbated by effects of the Great Recession (i.e., soaring student debt, low graduation placement rates, high youth unemployment). Addo claims a number of young adults find themselves “holding a diploma, weighed down by debt and navigating shaky job prospects” (p. A1). In view of that, Field (2014) asserts that, “under the new [gainful employment rule] proposal, [college] programs would fail if their graduates’ student-loan-debt payments exceeded 12 percent or debt-to-discretionary-income ratios of 20 to 30 percent would fall in ‘the zone,’ and would have to warn students that they might become ineligible for aid” (p. A8).

Not surprisingly, McLean and Bullard (2000) assert that, “the professionalism of university teaching is of increasing political and public interest” (p. 79). Make no mistake, few would argue that earning a doctorate is not a worthy intellectual journey. A student pursuing a doctorate in business may very well invest 10-plus years of his or her life earning the appropriate bachelor’s, master’s, and doctoral degrees. With this in mind, this author has performed some non-scientific surveys of colleagues who teach at a variety of post-secondary institutions. Those preliminary findings suggest that not all tertiary schools provide (formal/structured) teacher training and several that do often target it at the adjunct population only. On one hand, Braun and Mauldin (2012), suggest, “PQ [adjunct] faculty must be a better teacher than the tenure-track faculty because it is the primary responsibility of the position” (p.45). On the other hand, numerous articles have appeared in the recent press expressing

concern over the proliferation in the use of adjuncts at many US tertiary institutions. Nevertheless, this author is concerned with how the make-up of a professor's background impacts students' outcomes. At issue is Beckerman's (2010) declaration that, "teaching the skills of teaching has taken a back burner to publication and grant writing—to the detriment of both the faculty members and students" (p. 28). More poignant, Johnston, Milkman, and McCoy (2013) found that, "while the proportion of graduate-student teachers who received formal teacher training has risen, it still leaves over 40 percent of early-career marketing professors to learn their teaching skills with on-the-job experience or informal faculty mentoring" (p. 112). To this end, this author contends that earning a doctorate in biology makes one a biologist...not a teacher of biology! As noted above, 10-plus years of study is certain to provide one a deep understanding in his or her area of expertise and, more to this point, offers a plethora of (informal) teaching observation opportunities. Albeit, Beckerman declares that, "...while most incoming faculty members have proven expertise in their respective research areas, they are often poorly prepared as teachers" (p. 28).

Over the past couple of decades, this author has discussed—with various leaders of schools of business—the matter of why PhDs are considered both technically and educationally competent by the mere fact that one earns a PhD. To this end, Miller and Miller (2007) acknowledge that although, "experience in the field is necessary for establishing instructor credibility; Possessing knowledge of a subject area is not enough for an instructor" (pp. 113-114). So, upon further refinement, this author is interested in researching the following question: Would structured teacher training for PhDs improve student outcomes in Professional Graduate Degree Programs?

Perceived problem(s)

In this author's opinion, part of the problem is that the research related to this topic offers conflicting views. Accordingly, Kaplan and Owings (2003) note that due to the varying rigor among universities and the content in their college majors, there is no evidence to support a positive linkage between the acquisition of content knowledge and effective teaching. Interestingly, in the area of art education, Brewer (2003) found that art education majors are better prepared to impact student learning than art majors seeking teacher certification. Although Kaplan and Owings promote the notion that student achievement is less likely to occur if teachers lack proper classroom management skills that create an environment conducive to learning Brewer insists that the current system favors those who know what to teach versus those who know how to teach.

On the academic side, Greenburg, Clair, and Maclean (2007) suggest that, "...doctoral students learn quickly that to succeed as management professors,

they must emphasize their identities as researchers and deemphasize their identities as educators” (p. 439). To this end, Arum and Roksa (2011) proclaim that, “throughout the higher education system, faculty are increasingly expected to focus on producing scholarship rather than simply concentrating on teaching and institutional service” (p. 6). In addition, Riley (2011) posits, “tenure and promotion decisions at the university level are decided almost entirely by the faculty themselves on the basis of research, not teaching (p. 8). Mitchell (2007) further reinforces the point by saying, “Promotion and tenure at many schools mostly rested on one’s publication record. Excellence in teaching was welcomed but not particularly rewarded” (p. 238). Why is this a problem? Because, as noted by Arum and Roksa, “Many students come to college not only poorly prepared by prior schooling for highly demanding academic tasks... but—more troubling—they enter college with attitudes, norms, values, and behaviors that are often at odds with academic commitment” (p. 3). This begs the question: If new professors are not introduced to quality teaching methods, how will they deal with more and more students who require guidance in developing their foundational learning skills?

From a personal standpoint, the author has worked in a system of post-secondary education that tackled a similar professional development-related issue nearly 10 years ago...but on the vocational education side. When experienced carpenters from the field are identified as potential instructors for the St. Louis Apprenticeship Program (STLAP), newly hired instructors (acknowledged as technical experts) must adhere to a schedule of earning various post-secondary credentials focused on improving teaching skills. Over this past decade, STLAP has seen an increase in student exit exam scores and a decrease in complaints from instructors having to instruct poorly prepared students. With this in mind, from an anecdotal standpoint, if student improvement can be attributed to a better prepared teaching staff at the carpentry program, can similar gains be measured at the university level?

What the research says: Pros and Cons

The evidence suggests that in order to develop high-quality teachers, schools must invest resources, in terms of time and money, in their teaching staff. Experts on teacher quality argue that not unlike doctors and lawyers, teachers should be constantly exposed to the best practices within their profession. Accordingly, these practices include the following: 1. Early career-mentoring by approved mentors; 2. Classroom audits (including video-taping) by senior colleagues followed by structured debriefing sessions; 3. On-going professional development focused how-to facilitate student- and teacher-led “discussion and demonstration” teaching methods; 4. Tutoring techniques; 5. Participation

in regularly scheduled in-discipline and cross-discipline (small) professional communities of teaching & learning practices and professional associations; 6. Publishing and presenting in one's area of expertise on a regular basis; and 7. Staying connected to one's field (i.e., via consulting, serving an externship) (Beto, 2004; Darling-Hammond, 2004; Gregory & Clarke, 2003; Hernandez & Brendefur, 2003; Ma, 1999; Miller & Miller, 2007; Smith, Desimone, & Ueno, 2005; Stigler & Hiebert, 1999; Stone, 2005).

As per numbers 1-5 above, Duarte (2013) found that, "collaborative learning is part of good teaching, as it enables students to recognize that they, too, possess knowledge that they can share with their peers" (p. 11). In addition, Arum and Roksa (2011) insist that, "having faculty members who are perceived by students as being approachable and having high standards and expectations is associated with greater learning" (p. 93). Accordingly, Beto (2004) asserts that despite class size, teachers should introduce inquiry-style discussions in order to encourage students to learn. Interestingly, Berrett (2014) reports, "Classes of 25 students or fewer were associated with significantly more academic rigor and teaching quality than those that were larger..." (para. 15). Nonetheless, Beto supports that notion that students can learn from one another and not view the teacher as the sole source of information. Fittingly, Duarte studied five professors (from four disciplines) with high scores in formal student evaluations and evidence of peer recognition of outstanding teaching. In brief, Duarte proposes the following "best practice" from each participant: 1. Good teaching promotes deep learning...one must explore innovative cooperative approaches that make teaching engaging, relevant, and enduring. "You have to create a conducive learning environment where students want to be there" (p.5); 2. Good teaching involves "fostering understanding rather than just disseminating content" (p. 6); 3. Good teachers inspire students to learn. One must go beyond the transmission approach by "invoking emotions to enhance learning"...this is accomplished through experientially based activities" (p. 7); 4. Good teaching stems from collaboration between teacher and learner...in a partnership they work together to discover knowledge. Accordingly, "...teachers do not need to know everything, but they must be enablers of learning" (p. 8); and 5. Good teaching requires exploring different approaches to see what works (learning styles). To this end, "...teaching staff need to be reflective as well, not just the students" (p. 9).

Interestingly, Stigler and Hiebert (1999) assert that U.S. teachers teach as they were taught and, therefore, have not changed their teaching methods despite the school reform efforts currently underway. In addition, as per numbers 2, 5-7 in the aforementioned 'best practices' section, Stigler and Hiebert claim that if U.S. teachers continue to teach in isolation, student outcomes will not improve. Consequently, Stigler and Hiebert, like Gregory and Clarke

(2003) advocate for professional development focused on teaching teams that build content and pedagogy skills. Meanwhile, Greenburg, Clair, and Maclean (2007) believe how professors frame their roles fundamentally influences professors' pedagogical decisions. Meanwhile, Forrest and Peterson (2006) argue, "As business structures become flatter, individuals within groups must become more self-sufficient and better able to solve their own problems" (p. 113). Therefore, when it comes to teaching philosophies, it is vitally important for schools of business to understand and use the proper terminology. "Pedagogy is an archaic term that the ancient Greeks used to describe the education of children; ... a pedagogical mind-set looks to fill empty, passive minds with the instructor's knowledge; and Students are assumed to know little" (Forrest & Peterson, 113-115). Most importantly, Forrest and Peterson proclaim, "...andragogy literally means the art and science of teaching adults; ... assumes that students are the principle players in the teaching-learning transaction; and ... is dedicated to teaching humans who perform socially productive roles and have assumed primary responsibility for their own lives" (p. 114).

So, despite the 'publish or perish' mentality of many university tenure and promotion boards, Zajkowski, Sampson, and Davis (2007) see "... a strong case to be made for requiring all teachers to undergo formal continuous professional development (CPD), particularly at the tertiary level where competence is required in complex or theoretical matters as well as in educational theory and practice" (p.410). Moreover, Peterson and Wiesenber (2006) claim in an attempt to derive satisfaction and meaning from work, workplace practitioners and faculty alike can derive meaningful work from opportunities for continuous learning. In a show of support, Zajkowski, Sampson, and Davis found that approximately 47 percent of the 66 professors surveyed responded that they 'strongly agreed' CPD was an integral part of being a professional accounting academic. To this end, Athey and Hoffman (2007) assert that, "despite the fact that most doctoral students will be teachers for the next 20 to 40 years..., doctoral programs are historically often dedicated to content knowledge with little or no instruction on how to convey that content to others" (p. 1). Consequently, schools of business are confronted with a conflict as "The AACSB standards for accrediting doctoral programs includes 'Preparation for teaching responsibilities in higher education (for those students who expect to enter teaching careers)' as one of the five learning goals normally included in a doctoral program" (Johnston, Milkman, & McCoy, 2013, p. 108). Since scant research appears to exist on this matter, Athey and Hoffman studied faculty development initiatives within AACSB schools. In a survey emailed to 382 schools, they received 116 responses (30 percent) of which 87 percent indicated efforts for teaching and learning were at the university-level while 45 percent of the colleges of business conducted their own faculty development. It

became “readily apparent that many of these faculty development activities are not systemically coordinated nor offered as a comprehensive program” (Athey & Hoffamn, p. 3). Therefore, these authors proposed analyzing a structured professional development program in place at Colorado State University’s College of Business known as the Master Teacher Initiative (MTI). Athey and Hoffman found:

1. The formal introduction and implementation of a MTI symbolically signals to faculty the importance of quality teaching within the tripartite mission of teaching, research and service;
2. The faculty across functional areas can share common teaching interests and concerns;
3. The MTI contributes to the creation of a culture where scholarship of teaching is valued and appreciated;
4. The MTI assists in the socialization of new faculty by providing an open forum where both new and established faculty can meet and actively interact;
5. An established MTI provides tangible evidence of continuous improvement efforts for AACSB accreditation purposes. (p.4)

By decentralizing the MTI into each college at a university, the teaching mission moves to the forefront and is “discussed openly and often as the research mission” (Athey & Hoffman, p. 6). Of significance, Athey and Hoffman note, “As further evidence of success, an AACSB review team recently singled out the MTI as a benchmark program for other universities to follow” (p. 9).

Just as research exists in support of the positive relationship between teacher quality and a professor’s level of related-professional development, there are also a few dissenting views. To this end, Stes, DeMaeyer, Gijbels, and Van Petegem (2012) designed a study that involved 50 teachers who taught a total of 1022 students. They hypothesized “...that at the end of the instructional development the teachers in our experimental group would receive better student ratings in the teaching-learning environment they created in comparison to the teachers in the control group” (p. 413). Stes et al. found that, “... the contrary was true: with respect to the aspect of Teaching for understanding, the control teachers were rated better” (p. 413). In addition, Miranda, Casa Nova, and Cornacchione (2013) sampled 218 higher education institutions across Brazil. Their research found that there was a positive correlation between the AQ index and student performance but no significant positive correlation between the PQ and/or PeQ (pedagogical qualification: which relates to the systemized preparation for teaching practice in the university context) index and student performance. Accordingly, “It can be argued that the main variable of academic qualification is a PhD, because it is based on this degree that the professor becomes truly prepared for research and other activities related to it,

as recommended by AACSB” (Miranda, Casa Nova, & Cornacchione, p. 477). Consequently, this author proposes pursuing a study design based on the following hypothesis:

Professional graduate degree-seeking students of full-time professors, with PhDs, who have participated in formal (school-sanctioned) teacher-related professional development attain better outcome measures than those like-students who are exposed to full-time professors, with PhDs, who have NOT participated in formal (school-sanctioned) teacher-related professional development.

The Plan Ahead: Next Steps

This author has studied the issue of high-quality teachers in the K-12 system since the mid-2000s and, based on this research, promoted the notion that a highly-qualified teacher must represent a balance between obtaining, delivering, and exhibiting knowledge (Gaal, 2010). Since then, the results of this research led to follow-up work—with a colleague in the School of Business at Eastern Illinois University (Dr. Luke Steinke)—focusing on the differences of evidenced-based measures of teacher quality between high school career and technical education (CTE) teachers and post-secondary CTE Apprenticeship instructors. Preliminary findings suggest that little to no significant difference exists between these two groups. To be sure, that is not to say this lack of difference infers high-quality teaching. So, in light of the research described in the previous section, this author proposes designing a study that would incorporate a survey of professors to gain insights to their formal technical and teaching backgrounds while collecting evidence of student outcomes in an attempt to find correlations between these data sets. Accordingly, Glenn (2011) proclaims, “...student evaluation scores are so weakly related to learning that it is a serious error for colleges to use those evaluations as the primary tool for judging faculty members” (para. 22). In addition, Arum and Rosa (2011) assert, “National research has highlighted the extent to which grade inflation is rampant not only throughout higher education, but particularly at elite colleges and universities” (p. 77). To this end, Arum and Roksa recently studied Collegiate Learning Assessment (CLA: a tool that measures critical thinking, complex reasoning, and writing skills) pre- and post-test results—from freshmen and sophomores—from a wide array of liberal arts colleges across the US only to find, that as a whole, students were regressing. Of promise, but posing significant (data gathering) challenges, Glenn purports “...analyzing subsequent course preparedness as a...much more reliable signal of quality” (i.e., harvesting the vital trail of information on students from their first course—and who taught it—to more advanced courses—and who taught those—in areas such as math, etc.) (para. 4). Herein, this author will face the following challenges: Finding an adequate amount of willing participants (at the

university/college and students levels); identifying a student outcomes metric (test) amenable to all parties; tracking students from pre- to post-test; coordinating these data with their applicable instructors; and securing funding for a project that spans beyond two years.

Conclusion

Despite the conflicting findings in the current research, this author finds a hole in what is available based on the US-related data. So, not unlike the work performed in Brazil, this author proposes analyzing two data sets: business schools' professors' backgrounds and their (adult learners seeking an advanced degree/credential mainly for purposes of a raise/promotion) MBA students' outcomes; both of which, to some degree, have been studied in isolation to this point in the US. Therefore, this author plans to design a research study that correlates the effectiveness of professional development programs for full-time PhD professors (i.e., MTI) with student outcomes as measured by pre- and post-testing (i.e., CLA). As a result of this research, this author will attempt to answer the question: Would structured teacher training for PhDs improve student outcomes in Professional Graduate Degree Programs?

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Publication Guidelines for the International Journal of Vocational Education and Training

The *International Journal of Vocational Education and Training* reflects regional contributions and is international in scope. Its purposes are to provide a forum for the discussion of vocational education and training issues and practices; to assist in the dissemination of information on research and practice; and to strengthen the lines of communication among individual researchers and practitioners, institutions, and organizations. In addition, it provides a platform for individual views on relevant issues.

The Editorial Board passed a resolution requiring membership in IVETA in order to publish in the Journal, with effect from Volume 14.2. The Journal publishes feature articles on research, theory, and practice broadly related to international vocational education and training. The largest section of the Journal is devoted to empirical research articles. General articles and research manuscripts submitted for publication should be between 1,200 and 5,000 words in length and should adhere to rules in the most recent edition of the Publication Manual of the American Psychological Association (APA) with the exception of placing tables in-column in the text where you prefer them to appear. Articles should deal with some relevant aspect of educational opportunity such as educational research, evaluation, instruction, teaching methods, policy making, or theoretical discourses related to education and training.

In addition, the Journal solicits book, test, and computer hard/software reviews (500-700 words) and research in brief manuscripts (800-1,200 words) with similar publication goals. Authors interested in submitting a manuscript are required to follow the APA format as noted above. Email manuscripts that conform to the required specifications to: dmupinga@kent.edu.

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Copies. Submit electronic copies to: dmupinga@kent.edu.

Style. Adhere to the most recent APA edition to format your manuscript. Please remember the exception: Place any tables or figures in-column where they should appear. Any paper that does not otherwise follow APA style will not be considered. Make certain that documentation (reference) format rules are double-checked. In addition, avoid footnotes, and do not include your name or affiliation on any page after the title page. No more than 5% of a paper's text should be direct quotations. Insert only one space after punctuation at the end of sentences.

Tables and Figures. Tables and figures should relate directly to the content of the manuscript and should not repeat information given in the text. Please remember that the Journal publishes in black and white, not in color. When creating or saving a copy of your manuscript for Journal publication, please create tables and figures in black and white (you may need to return to your original manuscript and configure tables and figures for black and white reproduction). Figures should be provided on high-quality, glossy white paper and

should fit on one page. Tables should not exceed one page, and there should be no more than three tables per article. Also, do not place table or figure titles inside the table or figure.

General Articles and Research Manuscripts. General articles and research manuscripts must be between 1,200 and 5,000 words long, or not more than 25 typed pages (double-spaced). Authors should keep tables and figures to a minimum and include them in-column at the appropriate point(s) of insertion. Emphasis is placed particularly upon manuscripts that are research-oriented.

Cover Page and Title. Authors must include a removable cover page that is attached to each manuscript. This cover page should include the title of the manuscript and the name, address, phone number, email address, and institutional affiliation of each author. The title should be no more than 12 words.

Abstract. An abstract describing the manuscript should be included on a separate sheet. The abstract must be less than 120 words. Please follow APA guidelines when writing the abstract.

Book Reviews. Book reviews should be between 500 and 750 words in length and contain the following information: complete bibliographic entry, including cost (hard- and softcover, if available); the thesis of the book; a brief description of the argument (main ideas); sample passages quoted and/or commentary on writing style; shortcomings and strengths; intended audience (whom the book will most benefit in the international education and training community); your opinion of the book; and what you think the book contributes to the international vocational education and training community.

Test Reviews. Test reviews should be between 500 and 750 words in length and contain the following information: complete bibliographic entry, including cost; the main purpose(s) of the test; a brief description of the administration and time; shortcomings and strengths; intended audience (whom will the test most benefit in the international education and training community); your opinion of the test (citing similar tests and the pros and cons relative to those tests); and what you think the test contributes to the international vocational education and training community.

Review Process. Once your manuscript has been received, it will be checked for conformity to style and Journal requirements, then forwarded to at least three peer review readers who will read your manuscript and make recommendations as to whether to accept or reject it for publication. Unless the manuscript is inappropriate for review due to length and/or topic, manuscripts submitted to the *International Journal of Vocational Education and Training* are anonymously reviewed by a peer review reader group as noted above. You will receive a publication decision within a reasonable amount of time (normally 3 to 5 months). Do not submit manuscripts concurrently under consideration by another publication or manuscripts that were previously published. Indicate a statement on the cover page is the manuscript is being reviewed or has been submitted for publication elsewhere.

Submission of manuscripts. Submit your manuscripts electronically to Dr. Davison Mupinga, dmupinga@kent.edu.

Call For Papers

The *IJVET* accepts original manuscripts from scholars and practitioners worldwide focusing on TVET. Authors wishing to have articles reviewed and published in upcoming journals are encouraged to submit their manuscripts electronically to dmupinga@kent.edu.

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- Information and communication technologies and TVET
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- Financing TVET
- Implementation & evaluation of TVET programs or education
- New and emerging practices in TVET
- TVET as continuing or lifelong Learning
- Transfer of Training
- Formal, Informal & Non-formal TVET
- TVET policies at local, national, and international levels
- Occupational competencies and TVET
- National Vocational Qualifications & Occupational Standards,
- Occupational Certification, Licensing & Accreditation
- Cost Effectiveness and Quality Based TVET
- Instructional methods and TVET

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