

Entrepreneurship Education: Is it a Response to Envisaged Engineering Graduates in the South African TVET Sector?

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INTRODUCTION

- Technical colleges resembled by racial segregation; the ones in the cities had well equipped workshops; the ones in townships provided mainly theory due to ill-equipped workshops (Wedekind, 2010).
- Post 1994, FET colleges redress process of amalgamation took place.
- TVET colleges under DHET with NCV (level 1-4) and Nated (N1-6) curriculums.
- Statistics SA (2017) states that 31.2% of TVET graduates are unemployed, majority as black graduates.
- Inclusion of entrepreneurship could be a response to employable TVET graduates.

CONCEPTUAL FRAMEWORK

- This paper draws from the responsive curriculum approach within the curriculum transformation framework, as a concept that guides the arguments thereof.
- Central to this paper is the responsiveness of the TVET curriculum in engineering sector towards, economic development, innovativeness and graduates' unemployment.
- TVET curriculum in engineering studies need to transform and align to changing societal, industrial and economic requirements (Maringe & Osman, 2016).
- The evolving society, industry and economy need innovative and inventive graduate not "*do as the boss says*" mindset, but free-spirited thinking.

ROLE OF TVET COLLEGES

- In most European and Asian countries, TVET education is generally purposed to meet the needs of industrial requirements and societal needs, (Field, Musset & Alvarez-Galvan, 2014; Hoeckel, 2010) hence the private sector other stakeholders and the government form part of curriculum developing structure.
- Due to evolving industrial needs influenced computerised workplace (Karmel & Maclean, 2007) indicates that graduates' attributes include soft skills are among the TVET education as required outcomes at the end of studies.
- The primary role of TVET colleges in South Africa is seen as the provision of basic to intermediate skills needed for the economy (Powell, 2012; Akoojee, 2008), however, development of attitudes and values necessary for employability is essential.

EXPECTATIONS ON ENGINEERING STUDIES

- TVET to provide highly skilled labour required by industry ((HRDC, 2014b).
- We suggest that private sector (employer), government (curriculum policy maker) and the TVET colleges (curriculum implementer & labour force producer) should collaborate in developing curriculum that would respond to the industry demands (Wedekind & Mutereko, 2016).
- Furthermore, TVET colleges ought to develop formal relationship with industry in terms of developing and implementing a more structured and assessable work-integrated learning (HRDC, 2014a).
- Moreover TVET colleges should also respond to evolving local, societal and industrial needs.
- WE believe TVET engineering graduates should be accredited by ECSA.

RESEARCH METHOD

- We opted for document analysis as research method due to readily available information on public sphere to hasten the identification of research gaps in the TVET division.
- Secondary sources such as research articles, curriculum policies and research reports, news publications and books will be used to draw data for this conceptual paper (Owen, 2013).
- The study employs hermeneutics approach using thematic goals for content analysis procedures to extract the richness of assertions from various sources (Mayring, 2014).

ENTREPRENEURSHIP EDUCATION: NECESSITY

- Entrepreneurship education could be influential force for economic development through innovation, development and execution of new ideas for the future global economic needs (Kuratko, 2005).
- Therefore, engineering studies as thriving force behind innovation would be a suitable base for inculcating entrepreneurship education in South African TVET college sector.
- We believe entrepreneurship education emanated as a strategy for developing specific personality traits through purposive training (Kuratko, 2005) to improve the intention, knowledge and skills of students to explore entrepreneurial venture.

ENTREPRENEURSHIP: GLOBAL PERSPECTIVES

- Global view is that TVET colleges are most appropriate to respond to the development of entrepreneurship skills and improve employability of engineering graduate as a measure of addressing issues of youth unemployment and exclusion in socio-economic development.
- **Bangladesh** has incorporated entrepreneurship education in all TVET colleges departments valuing 2 credits (Haolader, 2015). Specific for TVET sector, **Malaysian** government made entrepreneurial education compulsory irrespective of direction of study including engineering studies (Ibrahim et al. 2015).
- Majority of **European** countries, 90% to 100% of TVET college students take part in entrepreneurship curriculum at a certain level during their study career (Oosterbeek, van Praag and Ijsselstein, 2010) .

ENTREPRENEURSHIP: AFRICAN PERSPECTIVES

- Like in many other African countries, TVET education in Nigeria is also perceived as pathway for unintelligent individuals who could not obtain access to the traditional universities (Dike, 2013).
- Botswana TVET sector has implemented entrepreneurship education at low level and theory-based that does not develop expected graduate skills (Setibi & Mapfaria, 2014), also with misaligned professional skills.
- The Ethiopian TVET colleges teach entrepreneurship (Edem, 2008) reflects that teaching methods varied from authentic project based, group discussions, field visits, lecture to simulations presuming most of necessary skills, values and attributes have been properly addressed in the colleges.

SOUTH AFRICAN CURRENT STATE

- In South African context, the government regards entrepreneurship as any form of small enterprise without any creativity or innovation – whether selling fruits at street corner for survival or having political relations to access government tenders “*Tenderpreneur*” from state owned parastatals (Van Aardt et al. 2014).
- According to HRDC (2014b), entrepreneurship training is done by independent providers outsourced by SETAs and not necessarily instilling the skills for entrepreneurs but giving theories on how to start a small business.
- . However, on TVET campuses, entrepreneurship modules are only found in management courses.

TEACHING METHODS

- Since entrepreneurship education in South African engineering departments at TVET colleges would be a new phenomenon – we need to search for more efficient pedagogical approaches and theories of learning that would guide its teaching and learning (Karimi, et al. 2010).
- Lackéus (2015) categorised entrepreneurship education delivery methods as “teaching about” (theory-based), “teaching for” (basic skills for start-ups) and “teaching through” entrepreneurship (authentic).
- Thus, “teaching through” entrepreneurship is proposed as more relevant for inclusion in core subjects such as engineering division – where students would be given **experiential learning** to go through the entrepreneurial process (Lackéus, 2015; Rae, 2010).

CONCLUSIONS & RECOMMENDATION

- South African TVET sector seems to be continually misplaced, poorly structured and governed, under resourced and therefore providing poor quality qualifications and inappropriate and outdated skills to those required by the post-industry economy due to inadequately qualified teaching personnel and lecturer understaffing in these institutions (Maringe & Osman, 2016; Akoojee, 2008).
- In countries such as Pakistan, Bangladesh, Afghanistan, India and China – TVET sector is mostly offered at high school level therefore not meeting the current economic expectations of knowledge and information era that is booming (Agrawal, 2013; Akoojee, 2008).

CONCLUSIONS & RECOMMENDATION

- Majority of Asian countries have fairly developed TVET sector with Korea, Japan and Singapore among them classified as providing best TVET qualifications with world-class institutions evolving with new demands of economy (Agrawal, 2013) to keep their economy and employment rate flourishing.
- Thus, instead of doing N4 to N6 in almost 30 weeks, each of these levels should be offered in 10 months (year) period. Then universities of technology should then focus on four-year degree programmes.
- Since the TVET sector in South Africa has been placed under DHET, this calls for TVET colleges to offer higher education standards and world-class engineering studies – we believe graduates should be qualified to be absorbed anywhere in the world not only locally by small factories.

work in progress

THANK YOU