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PROMOTING TVETISATION AND INNOVATION THROUGH INDUSTRIAL ATTACHMENT OF LECTURERS: THE CASE OF ONEPOLYTECHNIC COLLEGE IN ZIMBABWE

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ABSTRACT

The study sought to encourage lecturers in the polytechnic institutions to continually undergo skills appraisal by engaging themselves in industrial attachment. By so doing lecturers can broaden their experience and keep up with the latest development in science and technology. Many times the criticism of polytechnic graduates by employers for being improperly trained may become a thing of the past. The researcher used an open ended questionnaires, focus groups and interviews as data collection methods. Purposive sampling was used to select 26 lecturer participants of the study in line with quantitative research approach used in data analysis. It emerged from the empirical findings of the study that there is need to develop strong partnership with industry to broaden the lecturers' competencies and help keep abreast with new equipment coming as driven by the wave of technology and globalization. Furthermore, the TVET curriculum is underfunded hence challenges of inadequate machinery are still dogging the polytechnic education. This critical scenario creates a gap on the part of the lecturer in synchronizing the use of old equipment with the new equipment in the industry. The government therefore needs to make robust policy initiative to improve the delivery and implementation of technical subjects and also improve funding. The study recommends a further research be conducted on the impact of TVET to graduates self-employment.

Keywords: Industrial attachment, TVET, partnership, technology and employers

INTRODUCTION

The existing technical skills gap between the graduates of TVE and the industry has become a perennial problem in the world of work. An alarm has been raised in the education circles and industry that the lecturers are to blame since they are the ones in first direct contact with the students in preparation of developing occupational skills. Employers of labour have continued to express their concern and worry over the quality of the current graduates of TVE programs in

Vol. 1, No. 02; 2017

ISSN: 2456-7760

their short of relevant skills required for employment (Idris & Rajuddin, 2012). As if it is like a blame game students lay the blame to poor attachment environment while the lecturers lament on the inadequacy of training equipment in Zimbabwe. Most Zimbabwean TVE graduates have to be subjected to several re -training program since most of the graduates are considered non-employable going by the quality of training acquired from their various institutions (Olorunfemi & Ashaolu, 2008). Various studies have queried the relevance and quality of the training which is started in the college by lecturers while the employers are simply complementing what the student has learnt under the auspices of the lecturer.

2.LITERATURE REVIEW

UNESCO refers TVET as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (UNESCO website).On the other hand Osifeso(2011) defines TVE as a type of education designed for preparing the individual and learner to earn a living (to be self-reliant) or increase his earning in an occupation where technical information and understanding of the laws of science and technology application to modern design production, distribution and services as essentials for positive change. The concept TVET is that education which is practically oriented and driven by the desire to equip the leaner with practical occupational skills to enhance the learner's ability to enjoy an array of employment opportunities in the world of work.

Throughout the world, and particularly countries in sub-Saharan Africa, Zimbabwe included, renewed efforts are made to promote TVET for skill formation that would enhance productivity and sustainable global competitiveness (Dasmani, 2011). The increasing importance that African countries now attach to TVET is reflected in the various poverty reduction strategies that governments have developed in collaboration with World Bank (African Union, 2007). According to African Union (2007), the most important feature of TVET is its orientation towards the world of work and the emphasis of the curriculum on employability skills. This notion has made TVET to become a subject of discussion due to the benefits that accrue from TVET beneficiaries. Zimbabwe has been hindered by myriad of factors such as funding, expertise, synergy with industry and the public perception of TVET. This also does not sideline lecturers' competences in the delivery of work meant to produce a fully tvetised employer-ready graduate. The synergy between TVET institutions and industry would greatly stimulate and enhance a partnership and lecturer's effectiveness in their teaching methods. According to Gumbari (2009), there is no issue that should be addressed as a matter of urgent national importance than that of skills acquisition by the lecturers considering the failure of our basic

Vol. 1, No. 02; 2017

ISSN: 2456-7760

education to yield the expected positive results. However, it is noted with serious reservations that polytechnic institution's training facilities are out dated and inadequate making practical training difficult to meet the modern trends in the industries. If this situation is prevailing it places lecturers in predicament circumstances in tvetising the learner in accordance with the new technology requirements in the industry.

All this augment may come to nothing unless lecturers are given enough space to effectively contribute to development of positive attitude and mind-set towards TVET principles. Industrial training of lecturers would bridge the gap of knowledge deficiency by undergoing industrial training. There may be a gap between the lecturers and the delivery of TVET related concepts and lecturers need to continually being appraised to keep pace with the changing technology. For instance, Agbamu (2011) stated that lecturers who teach TVET and Entrepreneurship Education courses should be more practical in their approach to teaching so that students could acquire practical skills and knowledge needed to function properly in the world of work.

The above position requires lecturers be competent not only in the pedagogical aspect for effective delivery of modules or in the technical aspect based on the discipline or area to be taught butalso the need of industrial experience for practical skills upgrading specific to industry practice and procedures(ILO/CINTERFOR, 2001). The pedagogical competences and technical competences can be improved through short courses, conferences and in-service training. In order to achieve an effective training programme that is hands on, integrated work learning is a necessity to fully equip the lecturers to anchor basic TVET skills upon which graduates will develop occupational skills in pursuit of employment opportunities in Zimbabwe and Africa as a region. The only way lecturers can gain up to date training is through industrial training attachment. Lecturers are bound to gain new experiences that could be translated into teaching strategies intended to benefit students during the teaching learning situations. In conclusion, the work based learning isimportant to provide opportunity to lecturers to gain structured training and learning process at actual work place(Mitchell, Henry & Young, 2001).

The foregoing research purports that the simulated work environment in colleges, however, differs significantly from that of the real workplace environment in which most students of our technical and vocational institutions will eventually be required to function(Roegge, Wentling & Bragg, 1996). There are certain skills in related disciplines which are difficulty to learn and master in the classroom but better understood in a practical working environment. Zegwaard and Hodges (2002) are of the view that some skills are best developed in the workplace via the work- based learning. So, because of the fact that changing technologies keep on changing almost on a daily basis making it difficult for polytechnic institutions to acquire all the necessary

Vol. 1, No. 02; 2017

ISSN: 2456-7760

machines and equipment required lecturers must undergo industrial attachment to remain viable and relevant in their related disciplines. Why is it so important for lecturers to promote tvetisation? There is rapid development of new technologies which requires TVET graduates or engineers and technologists to face new situations in their working environment. In order to meet these emerging needs, TVET institutions need to relentlessly modify and improve the quality of its programme and services by first all equipping the lecturer with relevant skills as the main change agent in the process.

The following are some of the best practical reasons that drive lecturers to undergo industrial attachment.

- Improve best and most relevant teaching/learning methods.
- Technology adaptation and appropriate integration in the TVET classrooms.
- Broadening the role for TVET educators' education; attention to in-service education of existing TVET Personnel on training on new technologies.
- Emphasis on lifelong learning for continual professional development of TVET educators.
- Developing professional technologists and top notch scientists.

A research by Omotayo, *eta'l.,* (2008) confirms that other challenges that hinder the skill acquisition of graduates of TVE institutions include: inadequate funding, poor planning (including inaccurate research data), teacher incompetence, and inconsistent monitoring and evaluation, poor materials and resources. The polytechnic lecturers are meant to shoulder the blame for poor students and graduates performance but quite a number of logistics need to be put right to encourage synergy between industry and colleges. A direct link and interaction between the industries and the technological institutions in research activities and manufacturing would improve partnership for economic development. A TVET—Industry partnership through work integrated learning would greatly improve the work-readiness (employability) of graduates. More strategies like college-industry workshops on TVET, conferences and symposium and trade exhibition shows would provide forums up on which lecturers are encouraged to develop partnership with industry. Such programmes are designed to support employability skills of graduates through activity discussion and reflection between lecturers and industrialists (Knight & Yorke, 2003).If lecturers do not appraise their knowledge with the current change in technology they remain unable to train skilled workers to meet the requirements of industries and they remain unaware of the need for continuing education. Polytechnic lecturers are critically warned to fuse their ideas and knowledge to keep abreast with demands of local industries. Zimbabwe Development Education Fund (ZIMDEF) an arm of the government is paying monthly allowances to students who are on attachment as a gesture to recognise industrial

Vol. 1, No. 02; 2017

ISSN: 2456-7760

attachment of students. The component of partnership is still at its lowest level to improve the attachment of lecturers. The insufficient equipment training has created a gap between the learner and what he/she is expected to learn before getting into the industry for industrial attachment. Where present, the equipment in workshops and laboratories is often out-of-date, bearing little resemblance to the technologies presently used by industry (NICHE, 2010). It is therefore important to collaborate by engaging captains of industry as partners to participate in TVET curriculum development so that both the lecturers and industry will be talking the same language to spearhead economic development through Tvetisation in order to breach the gap between training and world of work. Mitchell (1998) gives the following counsel in his words that Public training institutions may seek the advice and assistance of enterprises on curriculum development, the setting of quality standards, or performance evaluation, as well as the provision of information on training needs and planning, donation of equipment, vocational guidance and counselling, recruitment of successful trainees, or the organization of industrial attachments to give trainees or trainers practical experience. On the backdrop of the above discussion lecturers are required to undergo industrial attachment to improve the effectiveness in tvetising for socio-economic development.

2.1Research objectives

1. To explore the importance and ways of promoting tvetisation and innovation through industrial training attachment of lecturers.
2. To establish strategies to strengthen the public-private partnership in TVET sector in Zimbabwe.

2.2Research Questions

1. What is the importance of industrial training attachment to polytechnic lecturers?
2. What strategies can be adopted to strengthen industrial attachment of polytechnic lecturers in Zimbabwe?

The Purpose of the Study

The purpose of the study was to establish ways of promoting tvetisation and innovation through industrial attachment of lecturers.

3. STATEMENT OF THE PROBLEM

Despite a lot of praise and effort towards TVET, there are arguments surrounding its role and effectiveness on economic growth, development and poverty reduction (Filmer & Fox, 2014). These arguments originate from the failure of TVET to provide well qualified skilled labour to drive the economic development process in Africa (UNESCO, 2006). The polytechnic lecturers are not short of the blame levelled against their competences in delivering of the quality teaching

Vol. 1, No. 02; 2017

ISSN: 2456-7760

and quality TVET education. However, there is the allegation and counter-allegation that TVET courses are not properly handled by lecturers who lack the new technological skills needed in the industry. Lecturers may be required to undergo industrial attachment to beef up the knowledge gap when delivering TVET related courses. This study is therefore undertaken to establish the importance of lecturer attachment in order to promote tvetisation and innovation in Zimbabwe.

4. METHODOLOGY

This study adopted a case study research design and was carried out at one polytechnic college in Zimbabwe which offers Technical Vocational Education and Training (TVET) programmes like other polytechnics in Zimbabwe. Both random and purposive sampling techniques were employed in selecting 26 lecturers who teach TVET courses in their areas of specialisation. The respondent-lecturers came from divisions namely Commerce, Engineering, Information Technology, Education and Applied Arts. A structured 26-item questionnaire and interviews were used for data collection. The questionnaire was face-validated by three randomly selected experts from three divisions. The questionnaire was structured on afive-point likert scale. The internal consistency of the items of the questionnaire was ascertained through Cronbach Alpha technique which yielded a coefficient of 0.87 considered high enough for the study. The data collected were analysed using mean ($\bar{x}$)standard deviation. Research questions were answered based on the cut-off point of3.50. Any item with mean response of 3.50 and above was accepted while any item with mean below 3.50 was not accepted.

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5. Data Analysis and Discussion of Results

Table 1: Sex Distribution of the Respondents. N=26

SEX	NUMBER	PERCENT (%)
FEMALE	**16**	**58**
MALE	**11**	**42**
TOTAL	**26**	**100**

Source: Filed Survey 2016

The analysis on Table 1 shows that 16 (58%) and 11(42%) of theparticipants were females and males respectively. This clearly shows the randomization as per the gender of theparticipants. However, female respondents were the majority.

Vol. 1, No. 02; 2017

ISSN: 2456-7760

Research Question 1*:* What is the importance of industrial training attachment to polytechnic lecturers?

Table II: Mean ratings and standard deviation of respondents on the importance of industrial attachment to lecturers.

N=26

S/NO	Item Statement	$\bar{x}$	SD	Remarks
1	TVET education is capable of producing employable graduates from colleges.	**4.73**	**0.15**	**Agreed**
2	Industrial attachment enhances TVET lecturers' skills.	**4.50**	**0.33**	”
3	College equipment used for teaching TVET may be out dated.	**3.96**	**0.75**	”
4	Lecturers must undergo industrial training attachment to bridge knowledge gaps.	**4.46**	**0.32**	”
5	Attachment of Lecturers helps overcome lagging in new technology available in industry ceteris Paribas.	**4.38**	**0.31**	”
6	The quality of TVET training in polytechnics prepares students adequately for the world of work.	**4.38**	**0.31**	”
7	Lecturers and TVET institutions follow employer standards, policies and procedures.	**3.57**	**0.67**	”
	Lecturer attachment helps to equip the leaner with practical			”

Vol. 1, No. 02; 2017

ISSN: 2456-7760

8	occupational skills to enhance the learner's ability to enjoy an array of employment opportunities.	**4.26**	**0.29**	
9	The synergy between TVET institutions and industry would greatly stimulate and enhance a partnership and lecturer's effectiveness.	**3.92**	**0.74**	”
10	Industrial attachment equips the educator with new methods of teaching TVET education for graduate employability.	**4.31**	**0.32**	”
11	If Lecturers do not go for attachment theycannot cope with new technology students encounter at work.	**3.96**	**0.47**	”
12	Appropriate agreements are signed by employers and TVET institutions to facilitate lecturers' attachment.	**3.57**	**0.67**	”
13	When lecturers meet with employers on attachment; employers are informed of polytechnic requirements and expectations.	**3.96**	**0.47**	”
14	Industrial attachment amongst lecturers, students and employers captivates openness and teamwork.	**4.12**	**0.36**	**Agreed**

Source: Field Survey 2016

The data presented in Table 1 indicate the mean range between 4.12 to 4.73 This data agreed to a lager extent that it is important for lecturers to go for industrial attachment while the mean range between 3.57 to 3.96 agree on the same note but to a lesser extent. This implies that all the respondents were in agreement that all the items in the table subscribe to the fact that lecturer attachment is important from low to high extent. The standard deviations of each of the items as well as the overall standard deviation ranged from 0.47 to 0.75 are closely together to a greater extent, while 0.15 to 0.36 are closely together to a lesser extent which implied that the opinions

Vol. 1, No. 02; 2017

ISSN: 2456-7760

of all the respondents are closely together that lecturer attachment plays a significant role in improving the teaching of TVET courses.

The study found that lecturers who go for industrial training attachments are better off in terms of knowledge and competence, pedagogical delivery is made easier and palatable. It emerged that lecturers are totally responsible in producing TVET graduates that are work ready hence the need to improve strategies to implement the TVET curriculum. The following views illustrate the views of the individual lecturers.

> *Lecturers' attachment has been long overdue. It is another key that helps to unlock better ways of preparing the students to fully comprehend specific discipline competences. No wonder why many industrialists complain of mismatch between our TVET graduates and what the industry expects. If lecturers at one time become attachees then we would fully become conversant with the needs of the industry, as our attachees would become of. One may not even understands how some new equipment in the industry would work, so industrial training attachment of lecturers is very important to improve our final products (graduates).*

Such comments were made from the focus group interviews.

Research Question 2

What strategies can be adopted to strengthen the public-private partnership TVET institutions and industry in Zimbabwe?

Table III. Mean ratings and standard deviation of respondents on the**s**trategies to strengthen the public-private partnership in TVET sector in Zimbabwe.

	N=26			
S/NO	**Item Statement**	$\bar{x}$	**SD**	**Remarks**
15	Experts from industries can be used as part-time trainers; guest lecturers in the TVET institutions.	**4,31**	**030**	**Agreed**
16	College-industry workshops can enhance partnership with industry.	**4,12**	**0.36**	**"**

Vol. 1, No. 02; 2017

ISSN: 2456-7760

17	Lecturers and industry should participate in conferences tailor-made to promote partnership between colleges and organisations.	**4,46**	**0.32**	”
18	Work integrated learning can improve effective partnership with industry.	**4,27**	**0.29**	”
19	Polytechnics that exchange notes with industry are bound to cement relationships that culminate in producing graduates being sought by employers.	**4,73**	**0.15**	”
20	Symposium functions are one of the best strategies to improve public-private partnership, these become arenas for learning from each other in terms of expectations.	**4,27**	**0.59**	”
21	Formal apprenticeship can be introduced with the assistance from the industry sector to provide the TVET lecturers with workplace learning and work experience.	**4,04**	**0.49**	”
22	TVET curriculum needs to be updated continuously in line with current demands from the industrial.	**4,38**	**0.73**	”
23	Polytechnics should hold trade exhibitions in which various employers would attend and make exchange programmes in what the industry wants and what the colleges are able to do.	**4,23**	**0.65**	”

Vol. 1, No. 02; 2017

ISSN: 2456-7760

24	Polytechnic institutions may seek the advice and assistance of enterprises on curriculum development, the setting of quality standards, or performance evaluation.	**4,27**	**0.29**	**”**
25	The employment rate will only improve when synergies between TVET providers, lecturers and employers are fostered.	**4.08**	**0.28**	**”**
26	Industry is organized on sectorial lines to provide specific advice on occupations and skills in demand.	**4.08**	**0.28**	**Agreed**

Source: Field Survey 2016

With reference to questionnaire items 15 – 26, in Table II, all items received mean scores of 4.04 and above. The implication here is that the above strategies are so significant in that they promote the attachment of lecturers through public-private partnership between TVET institutions and industry in Zimbabwe. The standard deviation of each item and the overall standard deviation ranged from 0.15-0.73 which implies that all the respondents have similar opinions that all the strategies presented in the Table promote and strengthen lecturer attachment through public-private partnership between TVET institutions and industry in Zimbabwe. This is a key important element to allow lecturers to have the access to current life in the industry.

6. DISCUSSION

The need for lecturers to undergo industrial attachment in Zimbabwe has received overwhelming results as revealed in this study. The results have noted very high positive response levels, for instance from 4.38 to 4.73 which is way above the cut-off point of 3.50. Out of the 26 respondents in this study only six of them moderately feel that lecturers should go for industrial attachment while twenty of them strongly felt that industrial attachment of lecturers is the way to go to improve quality of service delivery. This finding is in line with Mitchell, Henry & Young (2001) that industrial training is important to provide opportunity to lecturers to gain structured training and learning process at actual work place so as to improve the quality of teaching for quality graduates. Such high and positive response rate may imply that lecturers in Zimbabwe do not go for industrial attachment rather it is something that has been long overdue. The lack of employability skills in Zimbabwe’s post tertiary education graduates particularly TVET

Vol. 1, No. 02; 2017

ISSN: 2456-7760

graduates may be attributed to poor delivery skills among lecturers and lack of collaboration of TVET institutions with business and industry.

This study also revealed many strategies that can be adopted to promote industrial training attachment by lecturers in Zimbabwe these include incorporating work integrated learning in Higher Education Examination Council (HEXCO) national policy and the TVET curriculum; college-industry workshops on TVET, conferences and symposium and trade exhibition shows would provide forums for lecturers to develop partnership with industry. Such programmes are designed to support employability skills of graduates through activity discussion and reflection between lecturers and industrialists(Knight and Yorke, 2003). While improvement of synergy between industry and colleges is important there is also need for an adequate orientation between employers and lecturers on the benefits of TVET to graduates and community at large. These findings are in agreement with UNESCO (2009) that industries and employers should be encouraged to get involved in the provision of TVET service delivery and teacher training through public-private partnership with government and TVET institutions. Collaboration, feedback and partnership should remain the way to go to harness economic development through TVET education

7. CONCLUSION

Industrial training for lecturers in TVET institutions in Zimbabwe has been long overdue. There is a gap of knowledge acquisition by both students and lecturers this is said to be contributing to poor employability skills among many graduates of TVET institutions. It is therefore believed that if lecturers undergo industrial training they may improve in the way they deliver their lecturers and improve on students' employability skills. Research abounds that if lecturers undergo industrial attachment it would improve their competences and improve the quality of graduates from TVET institutions. It is concluded that lecturers should be acquainted and competent in new technology in the industry and in the TVET content in order to impart the saleable and marketable skills on students for the world of work after college life.

8. RECOMMENDATIONS

- Adequate funding of TVET and industrial training programs should be provided by government and through community and other stakeholders support.
- Lecturers should be trained and retrained in order to keep them abreast with the current trends in technology and industrial development for effective service delivery.
- Polytechnic institutions should be encouraged to hold international conferences, workshops, exhibitions and symposium to expose the lecturers for their academic and professional development.

Vol. 1, No. 02; 2017

ISSN: 2456-7760

- Olugbenga (2009) affirmed that for effective training of lecturers to take place and to create skills that are relevant to the future during industrial attachment, institutions of training must have up to date technology.

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Vol. 1, No. 02; 2017

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