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RESEARCH ARTICLE

THE ROLE OF INDUSTRY AND COMMERCE IN SECONDARY TEACHER TECHNICAL/VOCATIONAL SKILLS DEVELOPMENT THROUGH ODL

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Abstract

The present study was a descriptive survey which aimed at establishing the role of industry and commerce in secondary teacher technical/vocational skills development through ODL. Being a descriptive survey, the study adopted the use of questionnaires and interviews to solicit data from the respondents. The population for the study consisted of personnel drawn from the agriculture, construction, banking and manufacturing sectors. The National Programme Leader for Technical Subjects was also a respondent in the study. The sample thus consisted of one National Programme Leader stationed at ZOU National Centre and 5 respondents each from the four sectors conveniently drawn from Harare and Marondera. This gave a total sample of 21 respondents. Results of the study go to show that the industries were willing to partner ZOU in the training of teachers. Industry and commerce were willing to provide their facilities and resources to the Zimbabwe Open University to train technical subject teachers through Open and Distance Education. The human resources in industry and commerce had the capacity to produce modules and readers as well as provide tutorials and supervision while on attachment for the teachers as they possessed the expertise required for such services. The study therefore recommended that ZOU should proceed expeditiously to introduce the secondary school technical teacher training programme. The university needs to tape the resources industry and commerce in terms of expertise, infrastructure and other resources needed for the training of secondary school technical subject teachers through ODL. ZOU should also forge Memoranda of Association with industry and commerce in which the industries should undertake to make provisions for loans and grants and industrial attachment for students training as technical subject teachers with ZOU.

Introduction

Technical and vocational education is extremely important in improving and progressing a nation's industries while supplying a capable work force (Zimbabwe Government, 2005). Vocational education, if cheap and widespread, can greatly reduce unemployment rates by giving people useful, moneymaking skills. Technical education can greatly improve efficiency in many industries and can lead to brilliant innovation in others.

Industry and commerce play a pivotal role as it partners ODL institutions in the training of secondary school technical subject teachers who can in turn prepare the youths for various production and service industry to the benefit of the nation. These two institutions, industry and commerce, can invariably equip the teachers with the requisite expertise needed for effective instruction. Thus the role of these institutions cannot be overemphasised. This study therefore, sought to establish the extent to which industry and commerce could be of assistance in the training of secondary school technical subject teachers through open and distance learning at the Zimbabwe Open University. Distance education is believed by many to hold promise in addressing critical problems facing skills

development at present, namely a lack of qualified teachers, the need to greatly increase the delivery of skills training on a wide scale, and the need to deliver training at much lower unit costs owing to constraints on financing (Stevens, 2001). However, that being the case, there are challenges militating against this noble innovation. The question the present study sought to answer, therefore, is: What is the role of industry and commerce in secondary teacher technical/vocational skills development through ODL?

Statement of the problem

Proponents of technical and vocational education have argued that this form of training is one of the most effective human resource development strategies that all countries, more so African countries, need to consider in their quest towards industrialisation. In the endeavour to industrial prosperity, schools also play a major role as they prepare learners with the much needed skills to make their abilities, knowledge, attitudes and skills match with industry. However, without the involvement of industry and commerce, this may remain a pipe dream. This study therefore sought to answer the question: What is the role of industry in the training of secondary school technical subject teachers through open and distance education?

Research questions

The present study sought to establish the challenges impeding the successful training of technical subject teachers through distance education. In order to answer the main research question, the following sub-questions needed to be answered:

1. What resources available in industry and commerce for the training of technical subject teachers through distance education?
2. How do the captains of industry and commerce perceive the training technical subject teachers through ODL?
3. What role can commerce and industry play in the training of technical subject teachers through Open and Distance learning?

Literature review

The concept of technical and vocational education

Technical and vocational education consists of technical education and training which in addition to its vocational aim cannot neglect the general objectives of education. Vocational training and education includes training on-the-job and in training centres. The comprehensive term TVET is used to describe Technical Education and Vocational Training as a whole. In Zimbabwe, this philosophy can be traced back to the colonial times (Zimbabwe Government, 2005). The then Southern Rhodesia government in the 1923's established skills centres at Tjolotjo and Domboshawa, mainly for crafts training in building, carpentry and Agriculture (Atkinson, 1972, 1985). Technical and vocational education transformation took place after the Education Commission Report chaired by Professor Judges (1962). This commission paved way for the introduction of the F2 system in the secondary education sector, starting with Musengezi Secondary School in 1966. However, due to the colonial nature of the initiative, the F2 schools were phased out at independence and converted into conventional schools in 1981. Since then policy options have been mainly to provide technical and vocational education in the mainstream conventional institutions and thereafter at tertiary institutions. All the efforts in the provision of technical and vocational education in Zimbabwe have been through government and donor agencies (Zimbabwe Government, 2005).

Literature has shown that industry and commerce as the main employers play a major role in the training of tech/voc skills among youths and school leavers (Majumdar, 2008). This is so because a proactive private sector business entity should take the lead in training of technical and vocational skills against a background of human capital flight to the more attractive developed nations. Studies have also shown that there is need for school/business partnerships; school-to-work activities; and work force development to sustain employer and private sector commitment to education, training, and human resource development (InWEnt, 2005)..

The industry in some countries has play a key role in designing the curriculum, training methodologies and setting up facilities for training the trainers in the skill-based education sector mismatch (Afeti, 2012; InWEnt, 2005). Studies also show that almost all countries in Africa, large numbers of graduates coming out of the formal school system are unemployed, although opportunities for skilled workers do exist in the economy (UNESCO, 1999). This situation has brought into sharp focus the mismatch between training and labour market skill demands. This is

because critics argue that the lack of inputs from prospective employers into curriculum design and training delivery in universities and colleges is partly responsible for the mismatch (Afeti, 2012; InWEnt, 2005). Another reason that is often cited for the incidence of high unemployment among graduates is the absence of entrepreneurial training in the school curriculum (UNESCO, 1999). Mechanisms to involve industry representatives in formulating the curriculum and teaching and learning systems open productive platforms for industry-institute interaction. Collaboration, discussion and decision-making processes produce mutual agreements and understanding of the real conditions in the work place, the systemic functioning of industries and industry expectations.

Training for high-quality skills requires appropriate training equipment and tools, adequate supply of training materials, and practice by the learners. Other requirements include relevant textbooks and training manuals and qualified instructors with experience in enterprises (InWEnt, 2005; Afeti, 2012; Majumdar, 2008; UNESCO, 1999). Well-qualified instructors with industry-based experience are hard to come by, since such categories of workers are also in high demand in the labour market. But they could be suitably motivated to offer part-time instruction in technical and vocational schools. Majumdar (2008) states that establishing incubation centres allows for the shared access to infrastructures, practices, venture capitals and market information. In the context of technical and vocational education, business development or IT-oriented ventures, incubation centres allows for the development of a product of the academia for practical application. Incubation, as in technical development, facilitates concepts, research or laboratory process, practical application towards introduction for commercial purposes or release. Industry-institute cooperation at this level increases opportunities for hatching new innovations for the creation of new products (Majumdar, 2008; UNESCO, 1999)

Assuring the employability of trainees begins with effective guidance and counselling of potential learners in the choice of training programmes in relation to their aptitude and academic background (Majumdar, 2008). Employability presupposes the acquisition of employable skills that are related to the demands of the labour market. Labour market information systems and tracer studies which track the destination of graduates in the job market can provide useful feedback for the revision of training programmes so as to enhance the employability of trainees.

Research elsewhere has also shown that industry and commerce can play a major role in the provision of practical hands on skills while the colleges provide the theoretical skills required in a job (UNESCO, 1999; Majumdar, 2008). This entails industry and commerce providing apprenticeship training for those in and out of school. Afeti (2012) remarks that approximately, 70% of all school leavers, aged between 15 and 19 years undergo training under the dual system. The dual system promotes the linkage of vocational training to the world of work. The German model, for example, one of the most widely adopted models across regions, provides dual apprenticeship training which combines institute-based training and enterprise-based training; and is strongly oriented to the demand of the labour market.

Majumdar (2008) states that education should look at the general development of students that will give them a wide range of opportunities and choices to prepare them after graduation while industries look for technicians and employees with specific skills who will fit directly into the system. Having this seemingly obvious discrepancy in their respective purposes, there is a need to create a platform where institutes and industry can meet eye to eye, share ideas and regularly interact. Forms of interaction can take place with the aim to understand and jointly plan pre-employment and in-service training.

Majumdar (2008) and UNESCO (1999) both argue for close interaction between the institute and the industry/enterprise is seen as the platform for showcasing best practices, latest technological advancements and their implementation and impact on the industry. It is basically considered to improve the quality of technical and vocational education adequately to meet the needs of the industry and economy. Having a close interaction in place, industries are able to participate in technical and vocational education programmes, with the goal of cross-fertilising ideas for systems improvement.

The provision of scholarship schemes has also been advocated by proponents of TVET (Majumdar, 2008; UNESCO, 1999). The introduction of development funds in the form of scholarships, stipends, insurance and even sponsorships by the industry encourages students to continue embarking on study and training programmes. This also proved to be effective in drawing the best talent for the industry. In countries where effective industry support mechanisms are in place, companies sponsoring graduate scholarships have the privilege for the right-of-first-refusal in employing new graduates (UNESCO, 1999).

Methodology

The study adopted a pragmatic paradigm in which both qualitative and quantitative views were adopted. The research design adopted was the descriptive survey. The survey being the best designs to adopt where perceptions, views and beliefs of subjects are sought was the most appropriate for the current study. Descriptive surveys describe and interpret what it is concerned with, conditions or the relationships that exist, opinions that are held, processes that are going on, effects that are evident or trends that are developing (Fogelman in Coleman and Briggs;2004; Leedy, 1997; Best and Kahn, 1993), which is what the this study aimed at doing. In order to solicit data from respondents, the study adopted the questionnaire and a structured interview schedule. The two instruments were pre-tested on a sample of 25 respondents and eventually adopted for the study after amendments.

Population and sample

The population for the study consisted of top management personnel drawn from the agriculture, construction, banking and manufacturing sectors. The National Programme Leader for Technical Education was also a respondent in the study. Thus the sample thus consisted of one National Programme Leader stationed at ZOU National Centre and 5 respondents each from the four sectors conveniently drawn from Harare and Marondera. This gave a total sample of 21 respondents from whom data were successfully solicited through a combination of questionnaires and interviews.

Presentation and discussion of findings

In order to establish the role of industry and commerce in the training of technical subject teachers through ODL, the following sub-questions needed to be answered:

1. What resources available in industry and commerce for the training of technical subject teachers through distance education?
2. How do the captains of industry and commerce perceive the training technical subject teachers through ODL?
3. What role can commerce and industry play in the training of technical subject teachers through Open and Distance learning?

Sub-question 1 was stated as follows: What resources available in industry and commerce for the training of technical subject teachers through distance education?

The study first sought out first to establish the willingness of the respondents from industry and commerce to assist ZOU in the training of technical subject teachers. There was an overwhelming response in favour of offering assistance to ZOU. Out of the 20(100%) respondents, 19(95%) stated that they were willing to assist the university in its endeavour to skill the technical subject teachers if approached.

The respondents from industry and commerce were asked what resources they had to assist in the training of teachers through ODL. Data obtained from the Agriculture, Construction, Banking and Manufacturing sectors are presented in the table below.

Table 1: Respondents` views on the resources available in industry and commerce for the training of technical subject teachers through distance education

SECTORS			
AGRICULTURE	**CONSTRUCTION**	**BANKING**	**MANUFACTURING**
• Workshops • Equipment • Skilled manpower • Tools • Opportunities for agriculture practicals	• Workshops • Equipment • Skilled manpower • Tools • Opportunities for building studies practicals	• Opportunities for attachment for business studies teachers • Skilled manpower	• Workshops • Equipment • Skilled manpower • Tools • Opportunities for industrial attachments

Table 1 shows that the agriculture industry was prepared to avail workshops, equipment, skilled manpower opportunities for agriculture practicals and tools. The construction industry on the other hand offered also offered workshops, equipment, skilled manpower opportunities for building studies practicals and tools. The manufacturing sector had workshops, equipment, skilled manpower, tools and opportunities for industrial attachments. Observations at some of the sites indicated as prospective training sites for the student teachers show that the majority of these training sites especially work shops were well equipped by modern machinery and tools. The workshops and training sites we also located in the vicinity of some of prospective technical subject teachers. As far as the skilled manpower available in these sectors, the following table shows this human resource base that can be made use of in the training of technical subject teachers through distance education. The banking sector had opportunities for attachment for business studies teachers and like the other sectors it also offered skilled manpower. The National Programme Leader concurred with these responses by remarking that there was generally untapped resources in the private and public sector business units. These could be used in the training of teachers. This is line with the propositions by InWEnt (2005), Afeti (2012), Majumdar (2008) and UNESCO (1999) as they have argued that training for high-quality skills requires appropriate training equipment and tools, adequate supply of training materials, and practice by the learners. Other requirements include relevant textbooks and training manuals and qualified instructors with experience in enterprises. This therefore, puts ZOU at an advantage as all the necessary resources could be provided for by the various sectors of the economy.

As far as the human resource base available, Figure 1 below shows that most of the surveyed industries had well trained experts who could provide assistance in a variety of ways such module writing, tutoring and supervision of students while on attachment.

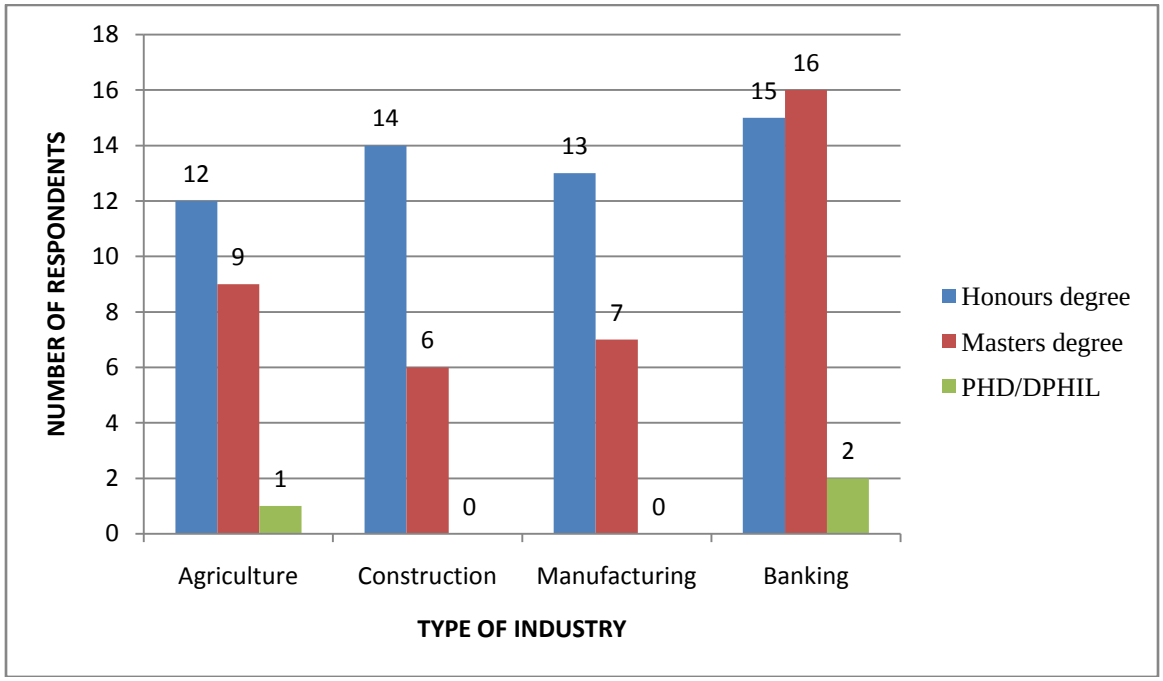

Figure 1: The human resource base that can be made use of in the training of technical subject teachers through distance education

Figure 1 shows that agriculture had 12 graduates with honours degrees, 9 had masters` degrees and I had a PHD in Agriculture. The construction industries which took part in the study had 14 graduates with honours degrees and 6 who had masters` degrees. The manufacturing industries had 13 honours graduates and 7 who held masters` degrees while the banking sector had the highest number of honours graduates which stood at 15 and masters` degree holders who were 16 in total and 2 were PHD holders in finance and accounting.

From the above data, the National Programme leader stated that this showed that there was indeed a wealth of expertise in these sectors. These could really come in handy in the provision of guidance on the curriculum and

module writing as well as providing tutorials. This is in concurrence with what UNESCO (1999) argued for by remarking that there should mechanisms to involve industry representatives in formulating the curriculum and teaching and learning systems and open productive platforms for industry-institute interaction.

Sub-question 2 was stated as follows: How do the captains of industry and commerce perceive the training technical subject teachers through ODL?

To address this issue, the interviewees were asked how they thought the training of technical subject teachers ought to be done in Zimbabwe, specifically at ZOU. To begin with, all the 20(100%) thought that the training of teachers through the involvement of industry and commerce was very viable. This had happened in other countries as the cooperation between industry and commerce on one hand and training institutions on the other had created dual apprenticeship training which combines institute-based training and enterprise-based training as is the case with the German model (Afeti, 2012).

The majority of 18(90%) respondents seemed to concur on the suggestion that there was need for the Zimbabwe Open University to work in collaboration with all sectors of the economy. These were the people on the ground to determine the direction of the programme. One interviewee remarked that ZOU was at an advantage because of it alumni which was scattered all over. These former students were occupying posts of high responsibilities in different sectors of the economy. They were therefore, aware of the issues that need to be addressed at ZOU as well as being in possession of information about the degree programmes that in demand in industry and commerce. That being the case they could provide the much needed guidance even for the training of technical subject teachers in the various subjects. In line with these findings, Majumdar (2008) hails the establishment of collaboration which has in other countries resulted in the formation of incubation centres for the shared access to infrastructures, practices, venture capitals and market information.

Sub-question 3 was stated as follows: What role can commerce and industry play in the training of technical subject teachers through Open and Distance learning?

Respondents were asked what they thought industry and commerce could provide to the secondary school technical subject teacher training.

Table 2 Respondents` views on the role of commerce and industry in the training of technical subject teachers through Open and Distance learning
(N=20)

ROLE	NUMBER	%
Provision of skilled manpower to teach the teachers	15	75
Module writing	11	55
Provision of opportunities for internships	19	95
Curriculum development	17	85
The provision of scholarship schemes	5	25
Supply of training materials	15	75

Table 2 shows that the different respondents had different roles which they suggested could be played in the training of technical subject teachers through distance education. Fifteen (75%) respondents indicated the provision of skilled manpower to teach the teachers while 11(55%) stated that they could offer services in module writing. Nineteen (95%) said they could also provide opportunities for internships for the trainees. Seventeen (85%) would services in curriculum development as these were the people on the ground who had information on what requirements were by employers in their different sectors. A minority of 5(25%) respondents stated that they could provide scholarship schemes for trainees while 15(75%) could assist in supplying training materials.
A follow up question was made on why quiet a good number were not in favour of scholarship schemes. This is then in contrast to what has been advocated for in other countries where the provision of scholarship schemes is the prerogative of employers of tech/voc graduates (Majumdar, 2008; UNESCO, 1999). Responses from 10(50%) show that since the trained teachers were not in any way going to assist in the industries concerned, this could be waste

and misdirection of resources. One of the respondents retorted that these teachers were already in employment hence they could fund their own studies but other issues related to sponsoring of the materials for the programme were not an issue. These were in disagreement with the National Programme Leader who indicated that most students despite being employed, are struggling to pay fees in all the programmes and if the technical teacher training. If the training programme was to achieve desired outcomes there was need for scholarships to kick start the training of technical teachers are in short supply in schools. The National Programme Leader also advocated for grants so that these could revolve in a national purse to cater for the other students coming on board.

Conclusions

From the results presented in the study, it can therefore be concluded that:

- Industry and commerce were willing to partner ZOU in the training of teachers and the training of technical subject teachers through ODL was a very viable option.
- Industry and commerce had the necessary expertise, infrastructure and other resources needed for the training of secondary school technical subject teachers through ODL.
- Industry and commerce were willing to provide their facilities and resources to the Zimbabwe Open University to train technical subject teachers through Open and Distance Education.
- The human resources in industry and commerce had the capacity to produce modules and readers for the teachers as they possessed the expertise required for material development, tutoring, supervision of students on attachment and the provision of guidance and counselling to prospective students, among a host of other services.

Recommendations

In view of the results presented in this study, the following are the recommendations:

- ZOU should proceed expeditiously to introduce the secondary school technical teacher training programme through distance education because of its viability.
- ZOU needs to tape the resources industry and commerce in terms of expertise, infrastructure and other resources needed for the training of secondary school technical subject teachers through ODL.
- ZOU needs to utilise the human resources in industry and commerce which have the capacity to produce modules and readers and provide other services such as tutoring, supervision of students on attachment and the provision of guidance and counselling to prospective students.
- The university should forge Memoranda of Association with industry and commerce in which the industries should undertake to make provisions for sponsorship of student through loans and grants and industrial attachment for students.

References

Afete, G. (2012). Technical and Vocational Education and Training for Industrialization.

Atienza, T. (2008). University-Industry Collaboration: A Strategy for Sustainable Quality Education. Proceedings of the Public-Private Partnership in TVET: Issues, Challenges and Best Practices, organised by CPSC, UNESCO-UNEVOC and InWEnt, December 1-2, 2008. Manila.

Best, J. W. and Khan (1993) Research in Education, Seventh Edition, London: Allyn and Bacon.

InWent. (2005). Financing Technical and Vocational Education and Training. Bonn: InWent.

Leedy P.D. (1997**)** Practical Research Planning Design 5th Edition New York: McMillan Publishing.

Majumdar, S. (2008) "Emerging Trends in Asia Pacific region and their Impact on SMEs" Tokyo: ADBI and CPSC.

Majumdar, S. (2008). Work Force Development in India: Policy & Practices. Tokyo: ADBI Publication.

UNESCO (1999). New Trends in Technical and Vocational Education Series: "Getting the stakeholders involved; Partnership at work in three countries from Africa, Asia and Eastern Europe." Paris: UNESCO.

Zimbabwe Government (2005). Report on the Technical and Vocational Education and Training Policy Review Framework February 2005, Ministry of Higher & Tertiary Education, Harare: Government Printers.