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ASSESSING CHALLENGES IN THE TRAINING OF SECONDARY SCHOOL TECHNICAL SUBJECT TEACHERS THROUGH OPEN AND DISTANCE LEARNING

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Abstract

This study sought to unearth challenges that are besetting the implementation of the secondary technical subject teacher training programme at the Zimbabwe Open University. The descriptive survey design was adopted for this study to capture people`s perceptions on this issue. Questionnaires and interviews were used to solicit data from the respondents. The sample for the study consisted one National Programme Leader stationed at ZOU National Centre, seventy secondary school heads in Mashonaland west Region and two heads of training centres also in the same province. Results of the study go to show that the training of technical subject teachers is a very viable initiative bearing in mind the available resources in the schools and other training institutions. The majority of the schools and training centres were willing to provide their facilities to the Zimbabwe Open University to train technical subject teachers through Open and Distance Education. The evolvement of ZOU from the University of Zimbabwe placed it at an advantage due to the transfer of faculty and other resources such as modules. Basing on these findings it was recommended that ZOU should proceed expeditiously to introduce the secondary school technical teacher training programme. The university should forge Memoranda of Association with the schools and training centres in which ZOU should undertake to train the teachers and lecturers in the schools and colleges at concessionary rates. ZOU should however, upgrade and then make use of available infrastructure in the schools and other training institutions available in the region.

Key Words: challenges, training, secondary school technical subject teachers, Open and Distance Learning.

INTRODUCTION

Following the Nziramasanga Commission of Inquiry into Education and Training (1999), schools have heeded the call to introduce technical education. However, the endeavour has been hampered by lack of manpower despite the existence of teachers colleges meant to produce technical teachers. Because distance education has been seen as the panacea to addressing staff shortages, the Zimbabwe Open University has introduced degree programmes to offer teachers technical qualifications. With no infrastructural facilities, it is interesting to note that a number of challenges may militate against the full implementation of the technical programmes at the university. This study seeks to unearth challenges that are besetting the implementation of the programme which was earmarked to commence during the January to June 2011 semester but has hitherto been postponed to January to June 2012

BACKGROUND TO THE STUDY

According to the Herald Newspaper of 23 December 2011, Zimbabwe currently has 97000 teachers in post against a demand of 122 000 teachers. Mathematically, this gives a deficit of 26000 teachers that are required in order to meet the staff needs. On way of addressing such a deficit is to train teachers through distance education because those that are in post continue to execute their duties whilst they learn. Among the much sought after teachers are technical subject teachers who continue to be in short supply as evidenced by their being conspicuous in the country`s secondary schools were the implementation of technical subjects has been

hindered by staff shortages. Distance teacher education in Zimbabwe has however, tended to address shortfalls in general primary teacher education training especially were the curricula for the teachers was generally academic. The Zimbabwe Integrated Teacher Education Course (ZINTEC) is one such initiative that was meant to address teacher shortages through distance education.

With the intention of making provision for the technical subject teachers, the Zimbabwe Open University (ZOU), an Open and Distance Learning (ODL) institution, has offered teachers the opportunity to study at their workplaces through distance education. It is the Faculty of Arts and Education, Department of Teacher Development that has come up with the innovation that is meant to address the shortages of technical subject teachers in Zimbabwe. For a start, the department intends to introduce the Bachelor of Education Technical (Metal Technology), Bachelor of Education Technical (Wood Technology), Bachelor of Education Technical (Home Economics) and Bachelor of Education Technical (Building Studies). Thereafter the different Master`s programmes for the various disciplines will follow. However, with the launch of the degree programme being postponed several times, it this view, the current study, sought to establish the challenges confronting the launch as well as those that are likely to impede the smooth implementation of the technical teacher training programme through distance education in Zimbabwe, particularly at the Zimbabwe Open University.

Statement of the problem

Distance education is believed by many to hold promise in addressing critical problems facing skills development at present, namely a lack of qualified instructors, 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 seeks to answer, therefore, is: What are the challenges confronting the training of technical subject teachers through 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. Are resources available for the training of technical subject teachers through distance education?
2. What are the stakeholders` perceptions of training technical subject teachers through ODL?
3. What is the level of ICT accessibility and availability in schools and tertiary institutions for use in the training of technical subject teachers through Open and Distance learning?
4. What is the effect of the developmental process of ODL institutions evolving from traditional institutions on the training of technical subject teachers through ODL?

LITERATURE REVIEW

Availability of skilled manpower to train the teachers through ODL

Hiring higher education faculty in technical education has been more problematic than in many other fields. The fields of technology education and vocational education are cited by Castle and Arends (2000) as having a lower than average number of applicants per position, with vocational education also showing a much higher than average failure rate (75%) for searches. Brown (2002), notes that there is a very low success search rate for faculty with technical qualifications to fill positions in technical education institutions.

Stakeholder attitudes

Distance educators still must confront a traditional misconception that distance learning is an inappropriate methodology for imparting vocational and technical skills. Still, distance education is generally regarded as most appropriate for post-secondary technical level studies rather than manual skills at the vocational level (Stevens, 2001).Distance learning is often seen as a threat to many instructors and faculty involved in more traditional education. Fear of technological change and job loss can present significant barriers to implementation. Distance learning can often entail a shift in job function and professional development of faculty, instructors, and support staff to enable them to support new models of delivery is critical. In Zimbabwe, currently odds appear to be tilting against distance education institutions particularly ZOU. There is

bad blood between ZOU and competitors from conventional institutions that feel they have lost clients significantly to ZOU, hence some programmes at the ZOU are being mysteriously suspended by ZIMCHE, the Higher Education watchdog which seems to favour the conventional institution over ODL.

ICT access and availability in schools and tertiary institutions

There is, at present, highly inequitable access to information and telecommunications technologies between the developed and developing worlds and even within the more advanced economies (Stevens, 2001). The potential of distance education to expand access to training will be increasingly predicated upon finding ways to democratise access to technology. A research by Bukaliya and Mubika (2011) revealed that another setback in ICT is that many educationists are still not fully ICT literate and do not use it in the instructional process. Studies by Ya'acob, Nor and Azman (2005) and So and Swatman (2006) also established that there is still a long way to go before schools can embrace modern technology. Countries of the Sub Sahara will need also to address challenges that are more specific to the region in their efforts to expand distance learning-based technical education. Technology has also changed the face of education. Advances in telecommunications technology has opened up the possibility of personal and group interaction in distance education (Galusha, 2008). According to Stevens (2001), the current levels of infrastructure and access in most countries of Sub-Saharan Africa are poor relative to nearly all other regions of the world. This lack of basic infrastructure limits, at least for the present, the options for distance delivery models.

Furthermore, Jeffries (2002) cited in Bukaliya and Dzimano (2011) acknowledges that educators are a key element in establishing the use of ICT in education and teacher education but many teacher educators themselves lack skills and training in the use of ICT or the equipment to apply and develop their knowledge and skills, once gained. This could, therefore, may militate against the training of technical subject teachers bearing in that ODL in the majority of institutions relies heavily on ICT.

Distance education development process and access to infrastructure

Research elsewhere shows distance education has relied on conventional institutions for its initial development. Stevens (2001) argues that there is need to acquire instructional content at first from other institutions during the initial stages of implementation. This has been the same at the ZOU which was a result of the transformation of the Centre for Distance Education at the University of Zimbabwe. Developing and sustaining distance learning systems will require investment in new skills and knowledge for learners, technical support staff, teachers and instructors, administrators, and policy and decision makers (Stevens, 2001).

In order to save on capital outlay, ODL institutions have to rely on available and existing infrastructure. Use of the existing pool of mainstream expertise and infrastructure should be considered so as to perpetuate the quality of ODL curriculum development and implementation so that the ODL system gets overshadowed by the traditional institutions (Bukaliya, 2011). That being the case though, there appears a situation whereby facilities and equipments, resource centers, and others are unavailable. The fact that the education sector is under-funded by the government means that the availability and quality or facilities in learning institutions is affected negatively. As argued by Kelly (1999), even the most basic infrastructure such as buildings, are inadequate due to underfunding.

METHODOLOGY

The descriptive survey design was adopted for this study for it enabled the researcher to solicit people`s perceptions on the challenges besetting the introduction of the teacher training programme at the Zimbabwe Open University. Questionnaires and interviews were used to solicit data from the 73 respondents.

Sample

The sample for the study consisted of one National Programme Leader responsible for technical education stationed at ZOU National Centre and seventy school heads and two heads of training centres located in Mashonaland West Province. Schools were selected through simple random sampling based on district of location. The training heads automatically made it into the sample because they are the only training centres available in Mashonaland West province. All in all there were 73 respondents in the study.

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DATA PRESENTATION AND DISCUSSION

Table 1: Availability of resources for the training of technical subject teachers through distance education
In order to solicit data to respond to question 1, the Programme Leader responsible for technical education, provided the following information.

Resource	Available	Not Available
1. Trained/Qualified tutors	yes	
2. Workshops for practicals	yes	
3. Textbooks	yes	
4. Instruction books		No
5. Equipment for practicals	yes	
6. Materials for practicals	yes	
7. Funding	yes	
8. Modules	yes	

Table 1 shows that most of the resources required to introduce and sustain the training of technical subject teachers through ODL are available. These include the trained and qualified tutors, workshops for practical work, textbooks, equipment and materials for practicals and funding. Modules for the various courses were also readily available. The only resources not available were the instruction books. This therefore would imply readiness and preparedness in the implementation of the training of technical subject teachers through Open and Distance Learning.

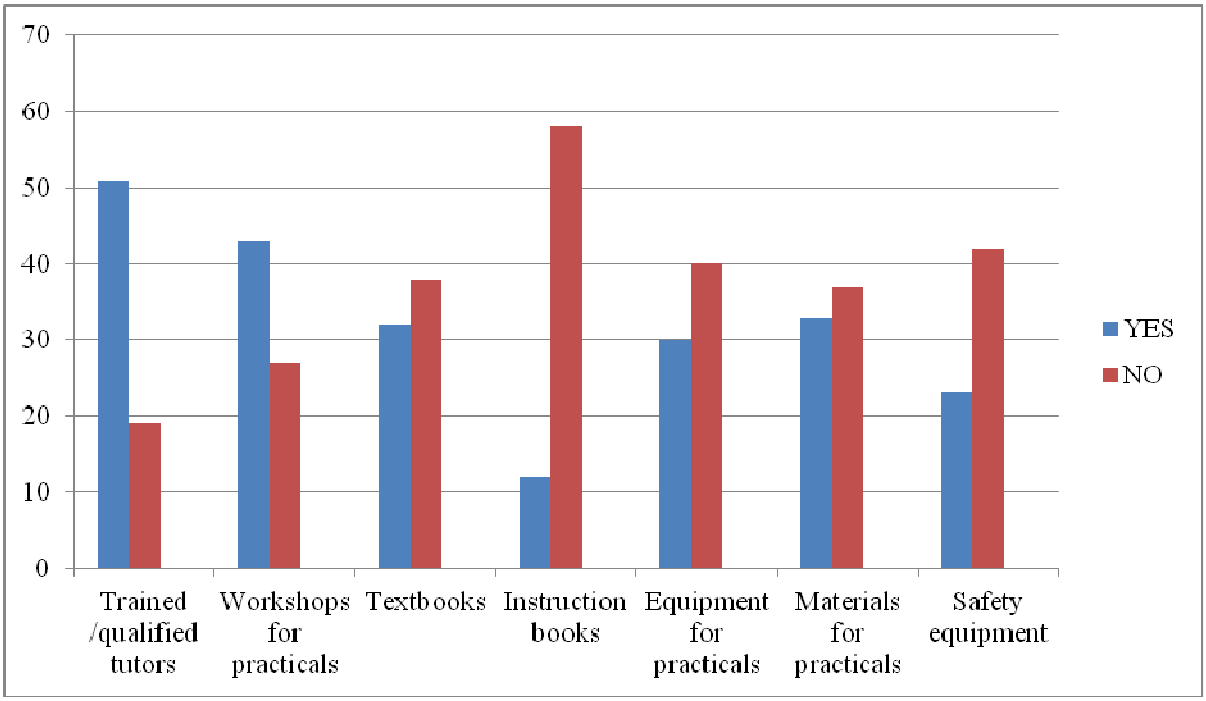

Figure 1: Responses from heads of schools on the availability of resources for the training of technical subject teachers through distance education

Figure 1 above shows that 51(73%) respondents remarked that trained tutors were available to train technical subject teachers. Another majority of 43 (62%) indicated that workshops for practicals were available while only 27 (38%) thought otherwise. As far as textbooks are concerned, a majority of 38 (54%) said textbooks were not available with a minority of 32(46%) indicating that these were available. Instruction books were not

available in the 58 (83%) schools with only 12 (17%) school heads indicating that these were available in their schools. Equipment for practicals were available in 30 schools whilst 40 (57%) schools did not have such equipment. Materials for practicals were available in 33 (47%) schools whilst the majority of schools, 37 (53%) did not have the materials. Safety equipment was not available in the majority of schools while only 28 (40%) had such equipment.

Two training centres were identified in Mashonaland West Province. However, these are located in one district making the two accessible only to those in their vicinity. The institutional heads provided the following data.

Table 2: Responses from heads of training centres on the availability of resources for the training of technical subject teachers through distance education

(N=2)

Resource	**Available**			
	YES		**NO**	
	Number	**%**	**Number**	**%**
1. Trained/Qualified tutors	2	100	0	0
2. Workshops for practicals	2	100	0	0
3. Textbooks	1	50	1	50
4. Instruction books	0	0	2	100
5. Equipment for practicals	2	100	0	0
6. Materials for practicals	1	50	1	50
7. Safety equipment	2	100	0	0

In both training centres under study, trained tutors, workshops for practicals, equipment for practicals as well as safety equipment were available. Textbooks and materials for practicals were not available in one of the centres whereas instruction books were not available in both centres.

Due to the fact that the only university and the two agricultural colleges in the province viewed ZOU as a competitor, they could not provide their facilities to a competing institution.

Stakeholders` perceptions of training technical subject teachers through ODL

A number of stakeholders on the issue of training technical subject teachers were identified. These included the major ones such as high schools, universities, agricultural colleges and training centres.

Stakeholders were interviewed on the following:

1. Is the training of technical subject teachers viable through ODL?
2. Are you willing to collaborate with the training institution in the training of teachers through ODL?
3. Of what benefit of the type of the training to the stakeholders?
4. What is quality of the product type produced through ODL?
5. What are likely challenges you are likely to encounter in the provision of services to the training institution?

Table 3: ICT accessibility and availability in schools and training centres for the training of technical subject teachers

(N=72)

ICT STATUS	YES		NO	
	Number	%	Number	%
Computer hardware is available	42	58	30	42
Computer equipment is accessible to all	40	56	32	44
Staff has knowledge of software and hardware in CAD	10	14	62	86
ICT training among staff is adequate	29	40	43	60
Attitudes of teachers to technology is positive	50	69	22	31
Electricity to power ICT gadgets is available	33	46	39	54
Staff is ICT literate	30	42	42	58

Table 4 shows the status of computer accessibility and availability the training institutions. Forty-two (58%) institutions indicated that computer hardware was available, with 30 (42%) stating otherwise. Computer equipment was accessible to all according to 40 (56%) respondents while 32 (44%) indicated otherwise. An overwhelming majority of 62 (86%) stated that staff had no knowledge of software and hardware in CAD while only 10 (14%) indicated that staff had such knowledge. According to only 29 (40%) ICT training among staff was adequate whereas the majority of 43 (60%) mentioned that ICT training was inadequate. Attitudes of teachers to technology was positive according to the majority of 50 (69%) while a minority of 22 (31%) thought otherwise. Electricity to power ICT gadgets was available in 33institutions with the majority of 39 (54%) not having the electricity. According to the majority of 42 (58%), staff was ICT illiterate whereas according to 30 (42%) respondents, staff were ICT literate.

The effect of the developmental process of ODL institutions evolving from traditional institutions on the training of technical subject teachers

In order to solicit responses on the issue, stakeholders were interviewed if the evolvement of ODL from conventional institutions had any effect on the training of technical subject teachers through ODL.

1. What is the effect of acquiring course content and material from parent conventional institution on the training of teachers?
2. To what extent is this scenario beneficial to the training of technical subject teachers?
3. What is the effect of ODL institution accessing available infrastructure?

Interviewees were of the opinion that since the Zimbabwe Open University evolved from the University of Zimbabwe, there was a tendency of being reliant on the parent institution for support in form of staff and other material to be used in the training of teachers. This is supported by the fact that some of the staff members who man programmes at the Zimbabwe Open University were transferred from the University of Zimbabwe. Some of the modules adopted by ZOU still bear the University of Zimbabwe logo. This therefore, means that the transfer of faculty from the parent was beneficial to ZOU. There is overwhelming evidence from the responses that the training of technical subject teachers through Open Distance Learning can benefit immensely from the evolvement of ODL institutions from conventional/traditional education systems. As indicated above, modules and faculty were adopted by ZOU meaning the new institution had a very good foundation and springboard from where to start. The use of already existing resources therefore places the new institution in a point of advantage as it does not start from scratch. The training of technical subject teachers through Open and Distance Learning therefore benefits from the scenario.

Training technical subject teachers through ODL, according to one interviewee requires that the training institution gets into synergies with the already existing institutions so that there is no heavy capital outlay to put in place infrastructure.

CONCLUSIONS

From the above findings, the present study concludes that:

1. There is overwhelming evidence that there is a lot of appropriate infrastructure to use in the schools and training institutions in the region.
2. The training of technical subject teachers is a very viable initiative bearing in mind the available resources in the schools and other training institutions.
3. The majority of the schools and training centres were willing to provide their facilities to the Zimbabwe Open University to train technical subject teachers through Open and Distance Education.
4. The evolvement of ZOU from the University of Zimbabwe placed it at an advantage due to the transfer of faculty and other resources such as modules.

RECOMMENDATIONS

Drawing from the conclusions cited above, it is recommended that:

1. Since there is overwhelming evidence that appropriate and adequate infrastructure is available in schools and training centres, ZOU should proceed expeditiously to introduce the secondary school technical teacher training programme.
2. The university should forge Memorandum of Associations with the schools and training centres in which ZOU should undertake to train the teachers and lecturers in the schools and colleges at concessionary rates.
3. ZOU makes use of available infrastructure in the schools and other training institutions available in the region.
4. ZOU makes use of trained and qualified tutors already in existence in the schools and training centres in the region.
5. While in the process of using the existing infrastructure and manpower in schools and training centres, ZOU should work towards upgrading both these resources in line with modern demands.

REFERENCES

Brown, D. (2002). Supply and demand analysis of industrial teacher education faculty. Journal of Industrial Teacher Education, 40(1), 60-73.

Bureau of Labor Statistics.(2006). Occupational outlook handbook, (2006-07 ed.),

Teachers—Post secondary. U.S. Department of Labor. Retrieved December 12, 2011 from http://www.bls.gov/oco/ocos066.htm

Castle, S., and Arends, R. I. (2000). Vacancies and applicant pools: Results of the AACTE faculty supply and demand survey. New Orleans, American Educational Research Association.

Jeffries, M. (2002). Research in Distance Education, London: Routledge.

Kelly, J. M.. (1999). The Development of Education in Zambia. Lusaka: Image Publishers Limited.

Stevens, G. (2001). Distance learning of technical and vocational education in Sub-Sahara Africa: Challenges and Opportunities, AFTH4,The World Bank.

Ya'acob, A., Nor, N., and Azman, H. (2005). Implementation of the Malaysian Smart

School: An Investigation of Teaching-Learning Practices and Teacher-Student Readiness. Internet Journal of e-Language Learning & Teaching, 2(2), pp. 16-25.