EMPLOYERS' PERCEPTIONS REGARDING THE QUALITY OF TECHNICAL EDUCATION AND TRAINING IN SOUTHERN AFRICA: A CASE OF THE BOTSWANA TECHNICAL EDUCATION PROGRAMME

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ABSTRACT

Providing quality Technical education and training has for a long time been an area of concern for most African countries, given the fact that every year governments allocate huge part of national budget to this sector. The study sought to determine the perceptions of employers regarding the quality of the Botswana Technical Education Programme (BTEP) graduates in terms of three main attributes, namely: survival, technical and employability skills. The main participants for the study were drawn from employers of BTEP graduates. Altogether 62 employers participated in the survey. The study found that although 50.7 % of employers rated survival and practical skills of the BTEP graduates as high, a much greater percentage (60 %) of them rated the level of occupational and employability skills as average. The study also found that while outcomes-based BTEP programme provides relatively high level of survival and practical skills, the level of most work related skills are still below the employers' expectation.

Keywords: employers' perceptions, outcomes-based education and training, quality, Botswana Technical Education and Training.

1. INTRODUCTION

Technical and Vocational education and training (TVET) has been used by both developed and developing countries as an instrument of development and as a way of preparing people for the world of work (Atchoarena and Andre, 2001). Over the past three decades many countries in sub-Saharan Africa have carried out major reforms in Technical and Vocational Education and Training (TVET) with the main aim of improving the outcomes of such training programmes. One such reform is the shift from the traditional rigid craft-based to competency-based education and training (African Union Report, 2007).
In the case of Botswana, TVET reform has been guided by the Report of the National Commission on Education of 1994 (Government of Botswana, 1997) and to a large extent Vision 2016 (Akoojee et al., 2005). In the two policy documents, the government of Botswana acknowledged TVET as crucial to the countries' economic diversification from agro-based to an industrialized economy (Richardson, 2008).

Thus, following the Revised National Recommendation on Education of 1997 and Vocational Education and Training Act of 1997 (GoB,1997) the Botswana Technical Education Programme (BTEP) was introduced by the Department of Technical and Vocational Education and Training (DTVET) in collaboration with employers in formal and informal sectors of the economy and the Scottish Qualification Authority (SQA).

The Botswana Technical Education Programme (BTEP) is by its nature a modularized outcomes based programme which is designed to be delivered flexibly in a variety of modes to a wide range of different learners using individualized, constructivist methodologies (Richardson, 2008). Its overall objective is: "to ensure access for all Batswana to high quality lifelong education and training, with a view to producing self-reliant, knowledgeable and skilled individuals who will engage in achieving Botswana's development goals, in particular and creation of employment, reduction of inequality and eradication of poverty" (Government of Botswana, 1994:186).

While the BTEP programme has registered some positive results by addressing the problem skill shortage, improving the quality of work skills is seen a major challenge for most Technical colleges in Botswana.

2. BACKGROUND TO THE STUDY

According to the United Nation Economic and Social Council (2005), the primary objective of Technical and Vocational Education and Training (TVET) programme in any country is to train skilled labour force which is adaptable to the requirements of the labour force. Such a key objective is difficult to achieve without quality vocational education and training programmes. Unfortunately quality technical education is difficult to define considering the various concepts about quality Everret et al (1999) argued that quality in technical education must be defined within the scope of the entire career and technical education system. According to Everret et al. quality in technical education is difficult to define because the programme serves two primary audience or clients: the students in the technical education and the employers.

Huba and Freed (2000) maintain that the first clients (the students) are expected to benefit from the teaching and learning offered by the vocational training institutions. They argue that in defining quality in vocational education it is important to recognise the degree to which teaching is learner-oriented. Learner orientation is the main reason for the recent paradigm shift away from traditional teacher-centred instruction to the learner-centred approach. The learner-centered approach is perceived as paying attention to performance rather than straightforward recollection or simple application of knowledge thereby allowing technical institutions to "aspire to become places where learning is continual, interactive, and self-renewing" (Rosenfeld, 2000:6).

In this model, students are believed to benefit from effective, flexible, assessable learning experiences that depend less on memorisation than on integration of skills. The model also considers learning not as the acquisition of isolated skills, but as the ability to apply a variety of learned skills sets to many job-relevant situations.

Ultimately, the student-centred approach indicates programme quality not only by internal means, (the grades that teachers give), but also by the student's performance away from the institution. Some writers have argued that the completion of a vocational education programme is only one indication of skills acquisition. What a student does with those skills is a much more compelling indicator of quality. For example, adult students, on the job or seeking employment, see the acquisition of skills as an objective at least as important as graduation. Thus, the assessment of a learner-centred post secondary curriculum must see the acquisition of skills as an alternative to graduation in measuring success.

The second client (the employer), hires students or promote them based upon the vocational education and training that vocational training institutions provides. Whereas, in the past businesses often offered internal training in the form of apprenticeship, companies are increasingly collaborating with public training institutions to prepare graduates for the world of work (Young-Hwa Kim, 2002).

Knowing the specific needs of the employers is critical to producing quality students, whether degree graduates or simply to upgrade employees, so that they can perform to the employer's satisfaction and fit the employer's long-term goals. In this regard, Lynch, (2000) maintains that quality technical education and training programmes must not only teach subject matter and skills, but also improve workplace performance. Thus, the quality of technical education should also embrace in part the quality and degree of involvement and cooperation between the institution and the employer in dealing with multiple needs; they must be partners in the planning, development, implementation, and assessment of all technical education, from degree programme to customised workplace training.

Drawing on qualitative insights from the employer case studies, it was found that there are characteristics, skills and knowledge and intellectual capability elements that are required for specific roles at workplace (Lowden et al., 2011; Griesel and Parker, 2009). A further similarity with the UK Commission for Employment and Skills (UKCES) report of 2009 was that employers and their representative organisations thought that specific definitions of employability were less important than the agreed focus on how to promote employability skills and attributes.

Contrary to other qualitative case studies, other authors argue that listing of gradates attributes cannot be done in simplistic manner because employability is a far more complex notion (Harvey et.al., 1997). In this regard, York suggests that: "….employability goes beyond the simplistic notion of key skills, and is evidenced in the application of a mixed of personal qualities and beliefs, understandings, skilful practices and the ability to reflect productively on experience in situations of complexity and ambiguity" (York, 2008:13).

According to York and Knight (2006:5), employability skills are influenced in the main by four broad and interrelated components: skilful practices (communication, management of time, self and resources, problem-solving and lifelong learning); deep understandings and grounded in a disciplinary base (specialised expert in a field of knowledge), efficacious beliefs about personal identity and self-worth and metacognition (self-awareness, and the capability to reflect on, in and for action). Drawing from this literature review it is clear that most employers value certain employability skill and attributes that are required for specific roles at the workplace.

3. AIM AND RESEARCH QUESTIONS

The main aim of the study was to determine employers' perceptions of the quality of the Botswana Technical Education Programme (BTEP) graduates in terms of four main attributes namely: basic skills and understanding, trade-related skills, and employability skills. In order to achieve the stated aim, the following research questions were proposed:

- Do graduates demonstrate academic skills to meet workplace expectations?
- Do graduates apply trade-related skills when dealing with workplace tasks?
- Do graduates display employability skills that are necessary at workplace?
- What are the Graduate skills and attributes that are valued by the employers?
- How do employers assess the effectiveness of BTEP programme?

4. STATEMENT OF THE PROBLEM

While Technical education and training offers more opportunities for most countries in sub-Saharan Africa to produce skilled workforce needed for job creation and economic development, the need to evaluate its fitness for purpose for this mode of education and training remain a major challenge. The rapid growth of technology in commerce and industry and globalisation impact demand that graduates must attain relevant practical knowledge and skills if they have to fit in the modern workplace (Griesel and Parker, 2009).

To achieve this goal, Technical training colleges need to work hard towards making the training they provide more relevant to the needs of commerce and industry. Numerous surveys has revealed that drawing conclusions based on graduates experience surveys alone is found to be inadequate as employers often perceive knowledge and skills from a different perspective to that of other VET stakeholders (Odora, 2006). Other empirical studies are needed to determine the level of competencies of graduates exiting from Technical Colleges. For any Technical Education and Training programme to be relevant, quality education and training as measured by the graduates' level of competencies is necessary. Additionally, Technical education and training without employers' input is bound to lose relevance to the world of work (Green, 2004). It was anticipated that the findings would help educators and policy makers to understand and respond to the needs of the employers as well as better support the graduates in acquiring the necessary skills needed in the work place.

5. METHODS

The research design

This study is based on descriptive research design utilising both quantitative and qualitative methods of data collection. Mixed methods was chosen for this study to serve the dual purposes of generalisation and in-depth understanding of employers' perceptions regarding the quality of BTEP graduates in terms of their skills and attributes.

Participants

The population for this study consisted mainly of employers in the following trades: Building construction, Mechanical and Electrical Engineering, ICT, Hospitality, Operation and Tourism, Hair dressing and Clothing Design and Textiles. Altogether 86 employers were sampled for the study using simple random sampling method. Since the population of the employers in the trades mentioned was quite small, a simple random sampling method was used. The findings shows, the small population sample in some trades did influenced the responses given to each statement in the questionnaire.

Instruments

The data for this study were collected using structured questionnaire consisting of closed and open-ended questions and face-to-face interviews. The questionnaire was developed based on the checklist provided by Zirkle (1998). The questionnaire consisted of general biographical information about the participants and a checklist of skills derived from three graduate attributes: academic skills, Technical/Occupational skills and Employability skills. Each statement had a Likert scale for rating each statement on a scale of 1 to 3 where 1 is low, 2 is average and 3 is high.

Procedure

Data collection procedure was through self-completed questionnaire. Depending on the location of the employer, questionnaire were sent either by post or delivered personally by the researcher. Enclosed with the questionnaires was a letter that described the purpose of the study, and soliciting the voluntary participation of the participants. Altogether 120 questionnaire were sent to the employers.

6. RESULTS

In this study, the quality of BTEP graduates were assessed based on three quality indicators, namely academic knowledge and skills, occupational and technical skills and employability skills. In all the first three questions the respondents were asked to rate the skills levels of the graduates using a Likert scale of 1-3 where: 1 = low; 2 = Average; and 3 = High.

A. Biographic summary of the respondents

Table 1 provides demographic data of the employers for each of the following trades: Building construction, Mechanical Engineering, Electrical engineering, ICT, Hospitality Operation and Tourism, Hair dressing and Beauty therapy, Clothing Design and Textile, Multimedia and Accounting. Initially 86 participants were sampled and of this number only 62 of them actually participated in the study.

Table 1: Employers per trade area

Trade area	Frequency	%
Building construction	5	8.1
Mechanical Engineering	15	24.2
Electrical Engineering	7	11.3
ICT	8	12.9
Hospitality Operation and Tourism	5	8.1
Hair dressing and Beauty Theraphy	9	14.5
Clothing Design and Textiles	4	6.5
Multimedia	1	1.6
Accounting	8	12.9
Total	62	100

Of the 62 participants, 15(24.2%) were found to be in Mechanical Engineering. It was also found that only 2 participants actually completed the questionnaire. It was obvious from Figure 1 that the number of participants varied from trade to trade.

The low number of respondents in some trades could be attributed to lack of employment opportunities in those trades.

B. Do graduates demonstrate academic skills to meet workplace expectations?

This section addressed six items relating to academic skills. An overview of items and descriptive statistics is provided in Table 2.

Table 2: Academic skill

	%	%	%
Responses	Low	Average	High
Technological literacy	9.7	48.4	41.9
Technical writing skill	9.7	43.5	46.8
Numerical skill	4.8	46.8	48.4
Computer skill	14.5	45.2	40.3
Oral communication skill	6.4	37.1	56.5
Reading skill	4.8	32.3	62.9
Average	4.3	42.2	49.5

The findings revealed that over 50% of the respondents rated graduates' competencies in reading and oral communication higher than other academic skills. Only a small percentage of participants (48.4%) rated graduates' competency in numerical skills as high, followed by technological literacy (40.4%) and computer skills (33.95%). On average 47.5% of the participants feel BTEP graduates as the necessary academic skills.

C. Do graduates apply trade-related skills when dealing with workplace tasks?

This question consisted of six elements. Employers were asked to rate each item on a three point Likert scale where 1 = low, 2 = average, and 3 = high. An overview of items and descriptive statistics is provided in Table 3.

Table 3: Trade-related (practical) skills

Responses	Low	Average	High
Health and safety skills	12.9	37.1	50.0
Machine operation skills (e.g. workshop or office machines)	11.3	38.7	50.0
Trade-specific reading skills(e.g. technical or business literature)	9.7	46.8	43.5
Work quality control skills	16.2	53.2	30.6
Work management skills	24.2	50.0	25.8
Average			

Descriptive data indicate that employers' perceptions regarding trade related skills were generally low. In particular, the findings point to Technical Literature interpretation skills, Maintenance of work quality and Work management skills as the lowest skill level. In the three items mentioned above, only a small percentage (34.9%) of the participants rated as high.

D. Do graduates display employability skills that are necessary at workplace?

Employability skills as defined in this study are those skills that allow one to perform efficiently in an industrial/commercial work environment. A total of twelve employability skill areas were identified and used in the study. The response to the level of employability skills and descriptive statistics is provided in Table 3.

Table 4: Employability skills

	%	%	%
Responses	Low	Average	High
Interpersonal skill	3.2	40.3	56.5
Decision-making skill	32.3	48.4	19.3
Problem-solving skill	25.8	45.2	29.0
Teamwork	9.7	25.8	64.5
Self-management skill	29.0	30.6	40.3
Leadership skill	29.0	48.4	22.6
Time management skill	24.2	35.5	40.3
Trustworthiness	9.7	24.2	66.1
Negotiation skill	32.3	37.1	30.6
Creative thinking skill	33.9	38.7	27.4
Adaptability to work environment and technology	33.9	38.7	27.4
Enterprising skill	22.6	51.6	25.8

The highest number of participants rated high the following employability skills: teamwork and trustworthiness (66.1%) and interpersonal skills 56.4%). On the other hand, 71.4% of the respondents rated as low to very low the following employability skills of BTEP graduates: decision-making skills, problem-solving skills, leadership skills, negotiation skills, creative thinking skills and enterprising skills.

E. Graduate skills and attributes that are valued by the employers

Semi-structured-interviews were conducted with the employers of BTEP graduates.

Major themes emerged around the issue of employability skills. The interviews with the employers of BTET graduates found that there are characteristics, skills and knowledge and intellectual capability elements that are required for specific roles. In addition, combinations of transferable skills were also deemed particularly relevant. Most employers mentioned some or all of the following employability skills outlined by Lowden et al (2011). These are: teamwork, problem-solving, self-management, knowledge of the business, literacy and numeracy related to the job, ICT knowledge, good interpersonal and communication skills, ability to use own initiatives but also follow instructions and leadership skills. In addition to these skills the employers also highlighted the need for particular attitudes and outlook including motivation, principled-minded and committed to work.

F. Employer Assessment of the Effectiveness of BTEP programme

Semi-structured-interviews were conducted with the employers of BTEP graduates. Major themes emerged around the issue of effectiveness of BTEP programme in terms of preparing students for the world of work. Findings not many employers understand what BTEP programme is all about and what it intend to achieve. Comparing BTEP programme with the old Craft Certificate programme, most employers are of the view that the latter programme provided graduates with the necessary workplace skills. Also the programme provided higher academic achievement, higher employment rate and relevant work experience.

The few instructors that were interviewed highlighted the following problems related to the implementation of BTEP programmes. One instructor observed: ".. the programme should have been piloted first before expanding it to other Technical colleges".

Another instructor noted: "The artificial achievement pass of 100% does not reflect the true level of competence as required by the employers …. Such achievement model should be replaced with assessment model based on true performance of the student."

Another instructor noted: "…this is too basic stuff with shallow content. Teaching technical courses is not fun anymore as more time is wasted on repetitive tasks of assessment and report writing". The findings from the interviews were found to be consistent with previous study by Raynold and Sharpe, (1992) found that while most students viewed competence-based education and training positively, most teachers experienced pressure to pass students despite questionable mastery of the work on the part of the students and they also experienced difficulty with the implementation of competency-based programmes due to limited resources.

7. DISCUSSION

The main aim of this study was to determine employers' perceptions of the quality of the Botswana Technical Education Programme (BTEP) graduates in terms of four main attributes namely: basic skills and understanding, trade-related skills, and employability skills. Several important issues emerged from this study the most pressing of which revolves around employability skills. The results indicated a highly favourable rating of academic and trade-related (practical) skills especially in the area of reading skills and oral communication skills.

On the contrary, the findings revealed that the majority of the respondents believe that most BTEP graduates have very low skill level in almost all trade-related (practical skills and employability skills such as decision-making skills, problem-solving skills, leadership skills, negotiation skills, creative thinking skills and enterprising skills. The relatively lower rating by the respondents of graduates' practical skills and employability skills are congruent with employers' impressions in other countries of deficiencies in term of work and other so-called “soft skills” which generally include most of the employability skills include individual's interpersonal, communication, and work ethics competencies (Kara and Rogers, 2008).

In addition to concerns towards work-related skills, some employers expressed concerns about the overall pedagogical preparation of the BTEP graduates. By its nature, outcomes-based education is restricted by a set of learning outcomes and assessment criteria. This type of curriculum structure does not create adequate opportunities for flexible learning, as learning is limited to the achieving the stated outcomes. Although there is now formal, pre-service pedagogical training for most BTEP instructors, there is still a shortage of qualified instructors in some trades. The disparity in qualification and experience leads to a wide disparity in the quality of the teaching force. Instructors interviewed have indicated heavy assessment workload which often impacted negatively on classroom teaching. They were also concerned about limited placements for students who are required to undergo work integrated learning as part of students' practical training.

The debate about the effectiveness of the impact of outcomes led qualifications framework and quality assurance in formal education and training has been mixed. Alias (2006) argue that the National Qualification Framework (NQF) does not create adequate opportunities for flexible learning, as qualifications designed are being driven mainly by industry's immediate needs for skills development, rather than the requirements of the new national policy guiding sustainable development.

To further emphasise the concerns, Parker and Walters (2008) argued that South African's move to Outcomes Based Education (OBE) as the template for the whole education and training through the use of outcomes statements to create a communication's platform for portability of learning between different knowledge and occupational fields have not succeeded. Also as a result of massive decline in apprenticeship and other work based learning in South Africa, NQF has not met the expectations of business with respect to improving the supply of appropriately trained skill labour with respect to increasing access to educational and occupational opportunities. According Matseleng (2002), even South Africa with established training policies has achieved very little in terms of integrating education and training. The report noted the main reason for the limited progress in achieving NQF objectives as lack of common understanding about 'an integrated framework' which has resulted into the drivers of the NQF and their partners to interpret this concept in different ways.

In general, the views expressed by most respondents (employers) tended to further strengthen the perception that although outcomes-based BTEP programme provides a range of courses, the outcomes (quality of graduates) in term of academic and employability skills are still wanting. While the survey data indicated the majority of BTEP graduates are exiting Technical colleges with the qualifications necessary to successfully transition into the workforce, data from the interviews point to a need to a holistic programme review with the view to imparting the necessary skills required in the workplace.

8. CONCLUSION

In summary, the following findings emerged: Most employers surveyed perceive the skills level of BTEP graduates as less satisfactory. The skill areas in which BTEP graduates appear to have low competencies include technological literature, reading, writing and numerical skills. The findings also indicate that BTEP graduates are weak in the following areas of occupational/technical skills: machine operation; trade-specific reading skills (e.g. technical/business literature); work quality control; and work management skills. The findings also indicate insufficient knowledge and skills in many areas of employability skills such as decision-making skills, leadership skills, self-management skills, creative thinking skills and adaptability to changing work environment and technology.

The study makes it clear that there is a real need to address gaps between employer expectations and the BTEP training outcomes. This is largely to do with a strong collaboration between Technical colleges and industry in order to address the issue of graduate skills other attributes relevant to the world of work. The study also demand a better understand by the employers of the aims of BTEP programme and the role they are expected to play which underscore the need for engagement between employers and technical colleges about ways in which to “narrow the skill gaps”.

This will entail developing a common understanding, in the first instance, of the nature of perceived gaps; and secondly, of ways in which the gaps can most effectively and creatively be addressed on both sides of the interface between BTEP training and the world of work. This requires scrutiny of work based and work placed learning and Technical education institution based learning to understand better graduate skills and attributes that are valued by employers.

9. REFERENCES

Allais, S. 2009. The Rise and Fall of the NQF: A Critical analysis of South Africa National Qualification. Unpublished Doctoral Thesis, University of Witwatersrand, Johannesburg, South Africa

African Union Report, 2007. Strategy to Revitalize Technical and Vocational Education and Training (TVET) in Africa, Addis Ababa Ethiopia info.worldbank.org/etools/.../TVET%20Strategy%20in%20Africa.pd...

Akoojee, S. Gewer A. and McGrath S. 2005. Vocational Education and Training in Southern Africa: A comparative study. HSRC Press: Pretoria

Everett, J, Gershwin, M, Hayes, H, Jacobs J, and Mundhenk, R. 1999, How should quality of Education and Training be defined? A paper prepared for the office of Vocational and adult Education, USA Department of Education. http://www.cccco.edu/divisions/esed/cte/programs/techprep/tp0203_rpt.pdf Accessed on 27/6/2011.

Government of Botswana 1993. Report on National Policy on Education

Government Printer, Gaborone, Botswana.

Government of Botswana, 1994. Revised National Policy on Education.

Government White Paper. Government Printer: Gaborone, Botswana.

Government of Botswana 1994. Study on the access to vocational education and training for students with disabilities. Department of Vocational Education and Training (DVET) Ministry of Education, Government Printer: Gaborone, Botswana.

Government of Botswana 1997. National Policy on Vocational Education and Training: White Paper. Government Printer: Gaborone, Botswana.

Government of Botswana 2004. Feasibility study report for “The Effective provision and expansion of technical and vocational education and training in Botswana”. Government Printer: Gaborone, Botswana.

Government of Botswana 2003. Vision 2016: A Long term Vision for Botswana. Government Printers: Gaborone, Botswana.

Green A. 2004. High Skill Competitiveness and Social Cohesion in Asia. Presentation for Conference on Competitiveness: Challenges and Opportunities for Asian Countries Bangkok, Thailand.

Griesel H and Parker B. 2009. Graduate Attributes. A baseline study on South African graduates from perspective of employers. SAQA and HESA Publication.

Griffin, P. 1998. Outcomes and profiles: Changes in teachers' assessment practices. Curriculum Perspectives, 118(1), 9-19, April 1, 1998. ACSA, Canberra.

Harvey L, Moon S, and Geall V, 1997. Graduates' work: Organisational change and students' attributes. The University of Central England in Birmingham, Centre for Research in Quality.

Harris, Kara S. H and Rogers, G E. 2008. Soft Skills in the Technology Education Classroom: What Do Students Need? International Technology Education Association (ITEA). USA: Reston.

Huba, M. E. and Freed, J. E. 2000. Learner-centered assessment on college campuses. Boston: Allyn and Bacon.

Lynch, R. 2000. High School Career and Technical Education for the First Decade of the 21st Century. Journal of Vocational Education Research, 25(2), 155-198. Association for Career and Technical Education Research Publication.

Lowden K. Hall H. Elliot D. and Lewin J. 2011. Qualitative insights from the employer case studies in Edge SCRE Centre (2011): Published by Edge Foundation 2011.

Matseleng, S.A, 2002. The National Qualifications Framework in South Africa: a democratic project trapped in a neo-liberal paradigm? South African Institute for Distance Education (SAIDE), University of Kwazulu-Natal. www.ukzn.ac.za/ccs/files/allais.pdf . Accessed on 4 October 2011.

Odora R.J. 2006. Analysis of the quality of the Botswana Technical Education Programme, Central University of Technology, Free State, South Africa.

Parker , B. and Walters, S (2008) Competency Based Training and National Qualifications Frameworks: Insights from South Africa South African Qualifications Authority in Asia Pacific Education Review Copyright 2008. Education Research Institute, 9 (1), 70-79.

Richardson, A. M, 2009. Crossing the Chasm Introducing Flexible Learning into the Botswana Technical Education Programme: From Policy to Action. International Review of Research in Open and Distance Learning, 10(4). www.irrodl.org/index.php/irrodl/article/view/700/1327 Accessed on 23 July 2010

Rosenfeld, S.A, 2000. Learning Now: Skills for an information economy. Washington DC: Community College Press.

UK Commission for Employment and Skills (UKCES) Report of 2009. Ambition 2020:World Class Skills and Jobs for the UK.

United Nation Economic and Social Council, 2005. Development strategies that works. Countries Experiences. ECOSOC Report, UN New York. http://www.un.org. Accessed on May 2011.

York, M. and Knight, P.T. 2006. Embedding employability into curriculum. York: The Higher Education Academy.

Young-Hwa Kim, 2002. A State of Art Review on the Impact of Technology on Skill Demand in OECD Countries. Journal of Education and Work, 15(1), 89 109.

Zirkle, C. 1998. Perceptions of Vocational Educators and Human Resource/Training and Development Professionals Regarding Skill Dimensions of School-to-Work Transition Programs. Journal of Vocational and Technical Education http://scholar.lib.vt.edu/. Accecced on 12 April 2010.

The Botswana Federation of Trade Unions (BFTU), 2007. Policy on Education in Botswana, Gaborone Botswana. library.fes.de/pdf-files/bueros/botswana/04922.pdf. Accessed on 12 April 2010.