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# Linking TVET Institutions and Industry in Kenya: Where Are We?

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ABSTRACT

Linking of the private sector and the education institutions is a major rising concern in many developing countries. International recommendations of the United Nations Educational, Scientific and Cultural Organization for the improvement of technical education and vocational training systems systematically referred to the need to forge closer links between training and the labor market. In the Kenya vision 2030 on education and training under the social strategy, the government intends to invest in its people by strengthening partnership with the private sector while in sessional paper No. 2 of 1996 on "Industrial Transformation and Development", the government of Kenya set the target of achieving newly industrialized status by the year 2020. TVET is the pillar in facilitating this and linking with Industry the key to achieving this. Adequate collaboration between Technical and Vocational Education and Training institutions and industries would lead to provision of relevant practical skills for industrialization. This paper focuses on linkages between industries and TVET institutions in Nairobi with the aim of establishing the extent of collaboration between TVET and industry. Survey research design was adopted for the study and simple random sampling technique was applied to select 340 respondents from the study population. Questionnaires were used in data collection. Data collected was analyzed using descriptive statistics in SPSS and results presented in tabular and graphical forms. It was found out that industrial attachment was the most pronounced linkage. Lack of initiative by TVET institutions and poor response from the industries were among the major challenges facing the linking of TVET and industry.

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## 1. Introduction

The demand of education for economic purposes due to the pressure of technological progress and modernization has been constantly on the rise in most countries during the 21st century. International comparisons have for some time highlighted the importance of increased productivity of human resources and hence to invest in education. The link between the rate of technical progress and the quality of human intervention has become increasingly evident as has the need for those active in the economy to be trained to use the new technologies to innovate. New skills are needed and educational institutions are required to meet the need by providing not only the minimum of schooling or vocational training, but also training for scientists, innovators and high level specialists (UNESCO, 1996)

Kenya has a vast network of technical and vocational institutions providing a wide range of programmes for all categories of school leavers. There are two polytechnic university colleges, two national polytechnics and one technical teachers college. There are 19 technical training institutes (TTI's), 17 institutes of technology (IT's), over 900 other vocational training institutions operated by private sector (Kerre, 2010). Besides, there are other tailor-made vocational and technical training programmes for school leavers run by Government ministries, state corporations, non-governmental organizations and industrial firms. (Republic of Kenya, 1988).

There is a marked expansion of vocational and technical training institutions in Kenya but despite this, the system has some marked shortcomings. There is no feedback from the employers to training institutions leading to a supply driven training skewed in favour of technologists. The technical graduates lack hands on experience and have poor work attitudes and are inflexible to change (Republic of Kenya, 2002) yet according to World Bank (1991), the reputation of TVE institutions is dependent on their ability to produce qualified young people who will be immediately operational in the work place.

According to the Republic of Kenya (1999), technical institutions should have close linkages with the world of work to solicit support of industry in the enhancement of practical training through such activities as donations of equipment and tools, staff exchange programmes and placement of students and staff on work experience attachment. This is because the nurturing of linkages between training providers

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and industry is essential for the provision of adequate and relevant skills development (Misko, 2001). According to the Republic of Kenya (1988), the industrial attachment program is meant to develop professional and occupational competencies.

## 2. Methodology

### *2.1. Research design*

This study applied constructionism as its epistemology. Constructivist epistemology holds that there is no objective truth waiting for us to discover it. Truth and meaning come into existence in and out of engagement with the realities of our world. There is no meaning without a mind. Different people may construct meaning differently even in relation to the same phenomena (Crotty, 1998). According to Creswell (2003), the goal of research carried out in this spirit is to rely as much as possible on the participants' views of the situation being studied.

In this research the researcher relied on the views of the participants' to assess the situation that existed in Nairobi as pertains to industrial attachment programme that was being offered through collaboration between TVET and industries. From the participants' views, analysis was done and conclusions made.

In this study, survey research was the methodology chosen. A survey is an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables (Mugenda and Mugenda, 2003). According to Babbie (1990), it can apply questionnaires or structured interviews for data collection. Survey design was chosen because it's economical and has a rapid turn around in data collection. It also has the advantage of identifying attributes of a large population from a small group of individuals (Babbie, 1990 & Fowler, 2002).

### *2.2. Target population*

The population for this study constituted a universe of approximately 3,100 constituting of 1280 third year and higher national diploma students of the 6 public Post- secondary technical institutions in Nairobi, 450 TVET providers and finally 1370 co-ordinators from the industry.

### *2.3. Sampling and sample size determination*

A sample of respondents was picked from each of the groups above and the sample size was determined using the table by Mitchell and Jolley (1988) which gives the required sample sizes for various population sizes against selected confidence levels and sampling errors.

| Confidence level | 95% | 90% | 85% | 80% | 95% | 90% | 85% | 80% | 95% | 90% | 85% | 80% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sampling error | 5% | 5% | 5% | 5% | 3% | 3% | 3% | 3% | 1% | 1% | 1% | 1% |
| Size of Universe | | | | | | | | | | | | |
| 50 | 44 | 42 | 40 | 39 | 48 | 47 | 46 | 45 | 50 | 50 | 50 | 49 |
| 100 | 79 | 73 | 167 | 63 | 92 | 88 | 85 | 82 | 99 | 99 | 98 | 98 |
| 200 | 132 | 116 | 102 | 92 | 169 | 159 | 148 | 140 | 196 | 194 | 193 | 191 |
| 500 | 217 | 178 | 147 | 126 | 343 | 302 | 268 | 242 | 476 | 466 | 456 | 417 |
| 1,000 | 278 | 216 | 172 | 145 | 521 | 434 | 365 | 319 | 907 | 873 | 838 | 809 |
| 2,000 | 322 | 242 | 188 | 156 | 705 | 554 | 447 | 380 | 1661 | 1550 | 1443 | 1357 |
| 5,000 | 357 | 261 | 199 | 163 | 894 | 664 | 516 | 429 | 3311 | 2897 | 2545 | 2290 |
| 10,000 | 370 | 268 | 203 | 166 | 982 | 711 | 545 | 448 | 4950 | 4079 | 3414 | 2970 |
| 20,000 | 377 | 272 | 205 | 168 | 1033 | 737 | 560 | 459 | 6578 | 5124 | 4117 | 3488 |
| 50,000 | 381 | 274 | 207 | 168 | 1066 | 754 | 569 | 465 | 8195 | 6055 | 4697 | 3896 |
| 100,000 | 383 | 275 | 207 | 169 | 1077 | 760 | 573 | 467 | 8926 | 6445 | 4929 | 4054 |
| 1,000,000 | 384 | 275 | 207 | 169 | 1088 | 765 | 576 | 469 | 9706 | 6842 | 5157 | 4207 |
| 100,000,000 | 384 | 275 | 207 | 169 | 1089 | 765 | 576 | 469 | 9800 | 6889 | 5184 | 4225 |

Source: Mitchell and Jolley 1988: 303

From the table, since the population size was about 3,100 and the researcher wanted 95% confidence and 5% sampling error, a sample size of 340 was deemed appropriate since it lies between 322 and 357 which correspond to 2,000 and 5,000 size of universe. The sample size of 340 was distributed such that 140 were students, 150 were industrial training co-ordinators and 50 TVET providers.

The study employed simple random sampling to select the respondents. The simple random sampling technique refers to selection of samples without bias from the target population. It's mainly used to select a random (representative) sample. In the study it was preferred because it was to ensure that each member of the target population had an equal and independent chance of being included in the sample (Kothari, 1985).

### *2.4. Data collection instruments*

Two research instruments were applied in this research. A self-administered questionnaire in which the respondents complete the questionnaires themselves and a Researcher administered questionnaire where the researcher uses the questionnaire to interview the respondent (Mugenda and Mugenda, 2003). For the third year students a self-administered questionnaire was used because of their numbers and the possibility of finding them in one place while for the TVET providers and industry coordinators, a researcher-administered questionnaire was used because they were located differently and each had to be visited individually. Both questionnaires were having structured and unstructured questions. The questionnaires were pre-tested for reliability using third year students from Eldoret Polytechnic and industrial coordinators from Raiply and Coca cola companies in Eldoret.

Data was analyzed using the Statistical Package for Social Scientists (SPSS). The objectives were analyzed using descriptive statistics and results presented inform of frequency tables and graphs. The SPSS was chosen because it was time saving and accurate in performing computation on data. It was used to code the questionnaire responses, tabulate the data in form of frequencies and percentages.

## 3. Findings

A sample of 150 respondents were picked randomly from the industries and were first asked if they had linkages with TVET institutions of which 74.7% of the respondents said they had linkages while 25.3% said they had no linkages. Then they were asked to specify from a list the linkages that existed between them. The results of the analysis of the linkages are shown in table 1.

**Table 1.** Linkages between industries and TVET institutions in Nairobi Province.

| Linkage | Response | | Percentage yes (%) | Rank |
|---|---|---|---|---|
| | Yes | No | | |
| Staff exchange | 5 | 145 | 3.3 | 6 |
| Research collaboration | 6 | 144 | 4 | 3 |
| Student attachment | 122 | 38 | 74.6 | 1 |
| Instructors industrial experience | 6 | 144 | 4 | 3 |
| Equipment sharing | 6 | 144 | 4 | 3 |
| Others | 7 | 143 | 4.7 | 2 |

The results showed that 3.3% had staff exchange, 4% had research collaboration, 74.6% had student attachments, 4% had instructors industrial experience, 4% shared equipments while 4.7% had other collaborations which included sharing of new research findings published material, and physical facilities. The major collaboration cited was industrial attachment (74.6%).

A sample of 50 respondents was also selected randomly from the TVET providers and were also first asked if they had linkages with industries of which 100% of the respondents said they had linkages. They were then asked to specify the kind of linkages that existed between them. The responses were analyzed using descriptive statistics and table 2 shows the results of the analysis.

**Table 2.** Linkages between TVET institutions and industries in Nairobi Province.

| Linkage | Response | | Percentage yes (%) | Rank |
|---|---|---|---|---|
| | Yes | No | | |
| Staff exchange | 4 | 46 | 8 | 2 |
| Research collaboration | 2 | 48 | 4 | 5 |
| Student attachment | 50 | 0 | 100 | 1 |
| Instructors industrial experience | 3 | 47 | 6 | 3 |
| Equipment sharing | 3 | 47 | 6 | 3 |
| Others | 2 | 48 | 4 | 5 |

The results showed that 4% had research collaborations, 8% staff exchange, 100% student attachments, 6% instructors' industrial experience, 6% equipment sharing while 4% had other collaborations which included industrial visits and workshops. The major collaboration therefore was only student attachments (100%). Figure 1 presents a comparison of the results.

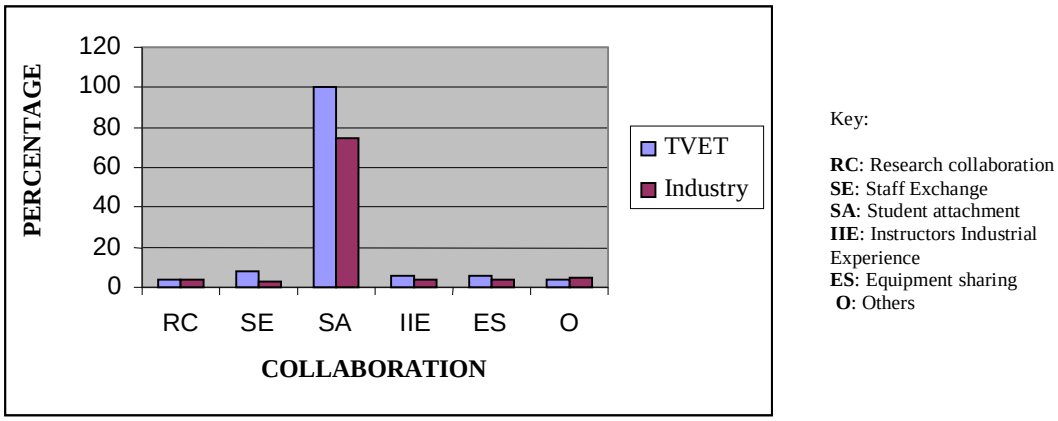


**Figure 1.** Linkages between TVET institutions and industries in Nairobi Province.

## 4. Discussion

Linkages between TVET institutions and industries are key to timely response and relevant curriculum which will assist students in the institutions to quickly adjust to the fast changing work environment. Today, there seems to be little disagreement with the fact that technological innovation proceeds as a complex interaction between research, design, production and marketing and takes place in a seamless web of interactive learning between a variety of actors at all levels in the economy (Lundvall, 1992); multiple sources of information and pluralistic patterns of collaboration seem to be the rule rather than the exception. TVET institutions and industries in Nairobi had linkages in research, staff exchange, student attachments, equipment sharing and instructors industrial experiences.

The most pronounced linkage was in industrial attachment programme for students. According to the findings of the study, all the public TVET institutions in Nairobi Province had linkages with industries. From the industry perspective, 74.7% had linkages with the TVET institutions. This finding disagrees with Ogola et al. (2005.) who pointed out that there was lack of existence of technical institution and industry linkages. This might be due to the timing when he carried out his study, year 2005, whereas this study was carried out in Nairobi after two projects, Otto Essien Young Professional Industrial Attachment Programme and Industrial Attachment Pilot Project had been launched within the past five years. However the study agrees with his findings that there is lack of a formal forum where technical trainers, professionals and employers should meet to exchange views on the relevance of training and the way forward. The low innovation levels may be attributed to lack of initiative by TVET institutions and also the poor response from the industries. If the TVET institutions managers and providers were sensitized on importance of linkages, a lot that is at stake may be corrected in time.

Studies carried out by Choi (2001) in Korea showed that linkages between schools, vocational colleges, junior colleges and industry also revolved around the provision of workplace training for students. Perkinson (2006) indicated that in China collaboration between TVET and industry was also low and pointed out that in order to create a vision for a modern TVET system, there should be collaboration between the industry and TVET providers and the key challenge for policy makers in China being creation of stronger connection between providers and industry.

According to Amissah (2006), in Ghana, TVET Linkages with industry in terms of input for curricula development are weak resulting in mismatches of supply and demand of skills. To address these, the Ghana government in collaboration with industry has developed a TVET Policy Framework to guide policy makers and to sensitize the public on the Government's focus on a new vision for Technical, Agricultural and Vocational Education and Training. This policy provided for the establishment of a National Council for TVET to regulate and give direction for the effective management and the development of competency-based curricula for Polytechnics and Technical Institutions. The TVET National Council was established in 2006 by an act of parliament.

UNESCO (2006) pointed out that among the issues where TVET needed reform was on improving relevance and linkages to employers and other stakeholders and hence recommended that stakeholders should have more influence on VET and VET should focus more on partnerships. This includes increasing cooperation and voluntary participation based on perceived benefits and value.

It's emerging therefore that linkage between TVET institutions and industries is an area of great concern and the Kenyan TVET sector and industries in consultation with the government should set up policies to help better link up this two institutions. Although industrial attachment seems to be high among the linkages existing, it still needs proper management for it to attain optimum results.

## 5. Conclusion

This study investigated the collaborations between TVET institutions and industries with special regard to existing linkages between TVET institutions and industry. The findings have shown that TVET institutions and industries are still far below the expectations in their collaborations as compared to the developed countries that should be emulated in many respects since their systems have attained desired results. The other linkages are almost non-existent and this has led to a big gap between training and the labour market skills demanded. This may be the reason for many firms retraining their new employees immediately after recruitment. If proper mechanisms and links are established, this problem will be much reduced and TVET graduates will come out with skills immediately relevant and applicable to the job market.

For Kenya therefore to have a TVET sector tailored to meeting the demands of the country and also be abreast with the global changes in technology, major reforms need to be carried out especially in formally linking up TVET institutions with the industry. Kenya will only be industrialized by the year 2020 if a match is obtained between training and industrial needs through formalized links fostered by policies laid down by the government in consultation with the respective stakeholders. Success in promoting this collaboration will depend on the ability of these three stakeholders (institutions, industries and government) to uphold a common vision and shared conviction and commitment for the future of our country. The outcry by parents, employers and students for quality and relevance of the programmes as noted by Kerre (1996) will cease if this is done. All this will be achieved if enterprises are actively involved in theoretical and practical training of those preparing for occupations through linking up with educational institutions regarding such training as noted by UNESCO (2002).

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## Recommendation

Following the findings of the research, the following recommendations were made:

i. The Kenya government should set up policies requiring compulsory linkages between institutions and industry for all existing and upcoming industries in relevant areas in order to foster employability skills among the TVET graduates.
ii. The TVET curriculum should be reviewed collaboratively by TVET and Industry every two years so as to cater for new developments in the world of work otherwise the skills imparted may be rendered obsolete in a short time.
iii. TVET institutions should take the lead in initiating formal linkages with industries in their localities in order to solicit their support in develop of the missing linkages so as to better develop the nation.

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