

# **Human Resource Development and Vocational and Technical Education at Kenyatta University, Kenya**

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This paper is based on an institutional linkage assignment (Spring, 1996 and Winter, 1997) between the University of Minnesota in the United States of America and Kenyatta University in Kenya. The Kenyan institution had plans to implement changes in its programs to include vocational and technical teacher education at both baccalaureate and graduate levels. Objectives related to physical education, social studies and citizenship education, and vocational and technical education were established for the linkage.

Two faculty members in the Department of Work, Community, and Family Education at the University of Minnesota (Gary McLean and George Copa) were asked to provide advice on the development and implementation of vocational and technical teacher education programs at Kenyatta University. This was to fulfil the following as stated in the linkage proposal:

...the primary goal of the vocational and technical education project is curriculum development and its accompanying program planning in order to establish Kenya's first Vocational and Technical Education Department. (Krotee, Benaars, Wamukoya, and Kerre, 1995, p. 5)

## Statement of Problem and Purposes

Kenyatta University has received considerable significant exposure internationally as a center of vocational and technical education, including such recognition from UNESCO. However, in spite of proposals to establish a Department of Vocational and Technical Education beginning in 1988 and culminating in the most recent proposal of 1994, no action had yet been taken to forward the proposal to the University Senate until further discussion could take place among the other departments in the Faculty of Education. Also, no new courses had been developed, and no faculty had been specified for such a department.

The departure of a senior faculty member left a void of faculty with a doctoral degree with training specifically in a field of Vocational and Technical Education and Training. This raised serious questions about the feasibility of such a program emerging at Kenyatta University. However, there appeared to be significant interest on the part of the faculty for both short-term and long-term development of such faculty expertise, and, with appropriate partnering arrangements and administrative support, was it possible for such a thrust to be developed and be successful?

## Research Question

The central research question for this study was: *What needs to be done about vocational and technical education at Kenyatta University based on the current situation and the needs of the Kenyan community?*

### Need for the Study

It was necessary for the faculty members from the University of Minnesota to appraise the resources and faculty at Kenyatta University and to identify the needs of the Kenyan community that could be served by Kenyatta University through the offering of vocational and technical education.

Collaboration between universities provides opportunities for faculty in developed countries to offer assistance with ideas and expertise to developing countries. However, it is important to recognize that programs that may have been a success in a developed country may not be of great value in a developing country. It was therefore necessary for the faculty from the University of Minnesota to understand thoroughly the situation in Kenya and Kenyatta University in order for them to offer useful advice.

### Objectives of the Study

The following objectives were accomplished in relation "to assist(ing) Kenyatta University in the development of curricula, course materials, programmatic plans for various degrees and training levels needed to fulfill its mandate" (Krotee et al., 1995, p. 12).

1. Reviewed the status of vocational and technical education and training in Kenya, based on existing and identified research and literature.
2. Made observations on vocational and technical education based on personal interviews and site visitations.
3. Made recommendations for establishing a vocational and technical education and training thrust to its existing programs, including suggested degree modifications.
4. Suggested the outlines for two new courses in Vocational and Technical Education and Training in Kenya.
5. Made additional recommendations to parties interested in vocational and technical education and training in Kenya other than Kenyatta University.

### Literature Review

To accomplish the objectives of the linkage, research and literature were identified and reviewed. Literature was reviewed in areas of general aspects of vocational and technical education, vocational and technical education in developing countries, and vocational and technical education in Kenya.

Overview of Vocational and Technical Education and Training. Kerre (1990) suggested that from a global perspective the framework for technology education for any given nation must be drawn from within:

(a) A widely recognized and acceptable national conceptualization of the role of technology and national development, the need to compete favorably in an international market, the elements of technology education curriculum and the emphasis to be given in the school

curriculum, a clearly defined and articulated vocational and technical training system that responds to the needs of society, industry and individuals.

(b) A clearly defined national policy framework that has legislative backing, identifies and encourages the development of appropriate technologies which will enable the nation to meet its national development needs as well as remain competitive in a technological international market, supports comprehensive and continuing vocational technical training, and encourages and stimulates employment creation through self employment in both the formal and non-formal sectors of the national economy.

Kerre and Kwende (1995) specified three types of structures that could be used to implement such a policy: "the traditional approach where TVE is offered as a separate system in its own separate TVE institutions" (p. 3), "TVE is offered alongside general education in the same institutions but still on a separate trajectory" (p. 3), and "an integrated one where TVE curriculum is a requirement for all learners at certain levels and an option at higher levels" (pp. 3-4). They argued for the latter as it offers the widest opportunities possible for learners to pursue either general education or TVE, the demarcation between general and vocational education was minimized as learners experience the interrelationships between theory and practice, and it is feasible to focus on general aspects of education at the lower level with an increasing amount of vocationalization or training as the learner moves to higher levels.

This final point was reiterated in greater detail in Kerre (1991) and Kerre (1996). The argument is also consistent with that made by Young (1993):

A unified system does not separate academic and vocational routes but recognizes that to fulfill the aims of a highly qualified workforce, a wide range of different combinations of academic and vocational studies need (sic.) to be possible that do not separate students into distinct tracks at 14, 16, or 18. (p. 20)

Bennell (1993) echoed a similar caution about the vocationalization of the curriculum.

Young (1993) outlined four conditions for achieving a unified system as a wide professional consensus in the education community, strategic thinking on the part of industrial leaders and trade unionists, political will on the part of the national government, and a high value placed on education within the culture as a whole. Her final conclusion was that:

a unified system...is...the only future for any country, whatever its current circumstances. Academic and vocational divisions for all their embeddedness in our culture and our institutions are structures of the past which were developed in response to certain circumstances at a particular time. That time has passed. (Young, 1993, p.34)

Bowles (1993) echoed this caution:

an occupational skills focus for the school system--particularly at its elementary and

secondary levels--will prove an expensive and ineffective productivity development

strategy and will compromise the more general objectives of developing the capacity

for critical thought, collective action, and further learning throughout life. (p. 45)

Much of the developing world, in particular, has discovered this. Kenya's move into a new vocationalized curriculum appears to have borne little fruit, in part because the government did not anticipate the costs of the changes. As a result, over ten years later, almost no schools were equipped to offer the required practical components of the curriculum in vocational and technical areas at the primary and secondary levels.

Finally, in spite of (and, perhaps, because of) these cautions, UNESCO saw the need for vocational and technical education as significant to worldwide economic development and peace. This led to UNESCO (1989) being involved in the development of national policies for vocational and technical education.

Bennell (1993) presented principles related to industrial training that have been learned from the experiences of LICs (Late Industrializing Countries) and MICs

(Mature Industrial Countries). Among the principles is the realization that the formulation and implementation of industrial training policies is a complex social and political process that often has unintended consequences, the establishment of clear priorities in allocation of public resources, agreement with the training process, provision of high quality general education as an essential foundation, integration of industrial training with general education, decisive involvement of the state, and establishment of partnerships of work force quality. He added that the central objective of industrial training is improvement in productivity. Training needs to be relevant to the needs of employers, and automation has increased the need for retraining. He mentioned that small and medium enterprises need state assistance with training but cautioned that most levy-grant schemes have not worked well.

At the adult and continuing education level for technical and vocational education (ACTVE), in a conference sponsored by UNEVOC and UNESCO in 1995, as reported by Hobart (1996), the following basic principles, among others, were adopted:

1. There is a need for systematic policy on ACTVE in all countries. This policy must ensure that it is relevant to the following contexts: international; national; and sub-regional.
2. In order to create motivation for ACTVE among older persons and among the young, there should be no barriers to it, such as age, gender, religion, culture, and class. Integration of technical and vocational education skills and learning into the formal educational system.
3. ACTVE must be learner-centered, reason-oriented, user-friendly and recognize prior learning. It needs to contain a values-dependent perspective of people.

Vocational and Technical Education in the Developing World, with Emphasis on Africa. Valerien (1988), for example, highlighted structural difficulties encountered in education in

Africa; such as insufficiently controlled population growth, poor knowledge of social education demand, perenniality of large classes, insufficient control of students' and teachers' movements or flows (statistical machinery), and absence of school maps.

The Kenyatta University faculty, however, have noted that African values are changing, particularly in urban settings. For Africa, in particular, the situation is serious. Holman (1993) concluded that Africa has been gripped by a fundamental struggle for economic recovery against mounting odds. Castro (1996) also highlighted the problem of viewing training non-systematically by reminding readers that there exists a strong myth that "training creates jobs," even when graduates of vocational schools cannot find jobs.

In an excellent synthesis of twelve case studies based on both English and French speaking nations of Africa, Kerre (1995) concluded that most countries in Africa generally support the general objectives of vocational and technical education as follows:

To provide, alongside general education, knowledge and skills in technical and vocational fields in order to meet national manpower requirements in agriculture, business, industry and other technical services. (p. 15)

He went on to list 10 specific objectives. These objectives were related to exposure to a wide range of practical activities at the basic education level; interpretation, application, and translation of basic knowledge and understanding of fundamental facts and principles of scientific process and techniques to be able to produce and use tools and labor-saving devices; and inculcation of an appreciation of human labor as an invaluable resource. The objectives also include equipping the students with relevant productive and entrepreneurial skills; the provision of skilled labor; the refinement of indigenous artistic and technological skills; the acquisition of skills to protect, utilize, and conserve the environment; and increasing scientific and technological literacy among youth. Finally, the objectives include encouraging equal access and participation of girls and women in technical and vocational education and the provision of a sound foundation for further education and training.

It is generally conceded that efforts at providing effective vocational and technical education and training in Africa (as in some other developing countries) have not succeeded. Kerre and Kwende (1995) explained that the absence of professionally trained TVE experts limits the effectiveness of TVE initiatives in developing countries of Africa.

Kerre (1995) provided a list of the major challenges facing the development of technical and vocational education in Africa. The need for political stability; the low status for vocational and technical education; changing needs of societies; the shortage of teachers; lack of accessibility by the handicapped, the poor, girls, and women; and lack of cooperation with enterprises.

Kerre and Kwende (1995) concluded that Africa could also benefit from TVE and TVT. However, this will only be possible if the governments and senior policymakers and planners show a more practical commitment to the importance of TVE and TVT. This can only occur when VTET is established within the accepted academic environment (including the universities), competent teachers are being prepared and upgraded by the universities, and policymakers at every level are familiar with the theories and practices of vocational and technical education and training.

The bottom line may be, however, as stated by Kerre (1995): "It is now recognized that no amount of education and training will be sufficient to provide gainful employment without specific government policies aimed at creating an enabling environment for business and industry to expand." (p. 42)

Vocational and Technical Education and Training in Kenya. Another history of vocational and technical education and training in Kenya up to the end of the decade of the 1980s is not necessary here. Sifuna and Shiundu (1988) and Omulando (1988) provided an excellent presentation of the history. An update of the past ten years would be extremely useful, especially as very little literature during this period has been identified. Perhaps it is sufficient to remind readers that in colonial days (pre Independence in 1963), black Africans were excluded from "academic scholarship" and were limited to rural and industrial manual education (vocational and lower-level technical education) for service to the white settlers. It was also heavily influenced by evangelization, driven by the need for minimal literacy to read scriptures. Thus, at the time of independence, black Africans rushed to throw off the "shackles" of vocational education to receive the academic and higher-technology education and training from which they had been systematically denied previously.

The image of vocational and technical education has not yet recovered from such a tainted image. While this attitude was widely shared in interviews and repeated in several articles, it does not account for the similar poor image of vocational and technical education and training in countries not sharing this history. Interestingly, Ngome (1992) concluded that "...after independence, the same vocational education that was rejected during the colonial era has been embraced again as a measure of curbing school leavers' unemployment" (p. 14).

The 8-4-4 system of education (8 years of primary, 4 years of secondary, and 4 years of college or university) was introduced in Kenya in 1985, replacing the previous system of 7-2-3-3. A primary objective of moving towards the 8-4-4 system was to increase the vocationalization of the curriculum and to retain students in schools longer so they would be more mature as they leave school and enter the job market. Specifically, in introducing the system, the Ministry of Education, Science and Technology specifically gave rationale for the new system as the need for a more relevant practical oriented curriculum and an emphasis on technical and vocational education. It was hoped that this would ensure that graduates of every level have some scientific and practical knowledge for either self-employment, salaried employment, or further training. (Kenya, Republic of, 1984, p. 1)

It is not surprising that Kenya took this step, along with many other developing countries. As Fisher (1993) observed:

There is an intuitive appeal, underpinned by political and economic considerations, to the claim that schooling should be made more 'relevant' to the world of work and the requirements of the economy. This claim has been particularly strong in developing countries where, from colonial times, governments have tried to curb educational 'over-production,' limit the demand for higher education, inhibit the drift from the rural areas to the towns and strengthen the contribution of the education system to economic growth. (pp. 77-8)

An assessment of the impact of the 8-4-4 system on vocational education in the secondary schools, however, was not encouraging. Kibera (1993) observed that the new curriculum had

not positively influenced students towards self-employment, technical, and farm-related occupations and that the desire for white-collar jobs was unabated. Sifuna (1992) agreed with this assessment. A possible explanation was offered: "...most teachers handling prevocational subjects in the schools were generalists and they were therefore ill equipped intellectually to pass on technical knowledge and skills to their pupils" (p. 143).

Another evaluative study, which explored intake criteria for technical secondary students and then followed them up for three years (Lauglo, 1989), found that the schools were popular with students. It was also found that marks/grades in technical subjects, except for those at the top of Division I, had no bearing on future employment. The study, however, was done coincident with the introduction of the 8-4-4 curriculum; thus, it probably has little relevance today.

It was for these reasons, and others, that Fisher (1993) argued for "a late selection, high participation, integrated curriculum" rather than "an early selection, low participation, differentiated curriculum" (p. 77). Such a conclusion is consistent with the policy change of the World Bank (1991) as it shifted its priorities from prevocational courses and secondary vocational training to strengthening general education. It claimed that such a shift was reflective of "an emerging international consensus about the high costs of vocationalization and the relative failure of school-based vocational programs to achieve their intended goals" (pp. 78-9). The estimate was that "technical education can be twice as expensive as traditional schooling. Capital costs for vocational education may be five or six times higher than for general education" (p. 86). Lack of planning, especially relative to costs, was also blamed for the failure of the 8-4-4 system by Muya (1993) and Kerre (undated). These cost problems exist even though the government spends 40% of its budget on education (Aduda, 1994).

In jua kali (informal business, often set up on the side of the road) arrangements, training is only a by-product of the production process. It was also generally observed that masters mostly pass on their skills and knowledge to apprentices, but they rarely create new knowledge. The absence of any formal instruction favors acquisition of practical skills vital to production and management, but limits theoretical understanding. Apprentices learn enough for commercial survival, but not enough for significant improvement in productivity. The impact of apprenticeships on the economy is limited by the number of masters willing to take on apprentices (Sifuna, 1993). Twoli and Maundu (1993) explained the process of training within the jua kalis to be step wise, starting with simple tasks, such as painting and cutting, and progressively handling more advanced and difficult tasks like welding and soldering.

With this system of master teaching apprentice in the way that he (usually) was taught, there has been little infusion of new technology and new designs into the jua kalis (Ng'ethe & Ndua, 1992). One way to overcome this was through the use of regular seminars and exhibitions located close to the jua kali sites for the purpose of encouraging "skill innovations, sensitization to new or changing business trends..., administration of Jua Kali business, and boosting Jua Kali business" (Twoli & Maundu, 1994, p. 62).

Finally, a common finding in the research done on this informal sector is that those involved in the sector have little background or understanding about how to do business (Ng'ethe & Ndua, 1992; Oirere, 1996; Twoli & Maundu, 1993, 1994). Twoli and Maundu (1994) recommended that a forum be developed to assist jua kali artisans in such skills as "general

record-keeping skills, sales and accounting skills" (p. 62). To this list, Twoli (1992) added "improved PR and effective supervisory techniques" (p. 87).

In general, Swainson (1993) found that in the informal sector there were a number of approaches to indigenous apprenticeship systems which include the extension model, day release at formal VT institutions, and community development. He concluded that it "is widely agreed that training interventions in the informal sector are not likely to be successful unless all aspects of the support package are carefully integrated, i.e., credit, technical and managerial" (p. 114).

Training and Development in Multinational Corporations. No literature was identified that provided any overview or status of human resource development or training and development within Kenya, regardless of the type of organization in which it was to be found. Thus, for this report, comments will need to be made relative to a single organization, BAT Kenya Ltd., to which a field visit was made.

Management development and executive development were coordinated from the UK Group office and the Republic of South Africa. Technical training was the responsibility of each function--production, marketing, leaf crops, and finance. Training of trainers was available in the market or overseas. The ideal person for the training officer position is a person who has both a trainer's background and technical skills. BAT Kenya wants a manager/trainer who is aware of organizational effectiveness. There was a feeling that many managers would like to learn more about OD in short courses (especially Coaching and Mentoring). It was possible for Kenyatta University to become a center of excellence in HRD for BAT. It could also become a partner in HRD with many other multinational corporations and organizations.

Teacher Education. As recently as 1986, Kerre argued that "the subject (of vocational education in Kenya) has not received any substantive attention by scholars" (p. 2). While this situation has changed somewhat since that time, only a few names (Kerre's primary among them) surfaced in a review of the literature since that time. Perhaps that was because vocational and technical education is not firmly established in any university in Kenya.

Kerre (1986) envisioned the establishment of graduate and post-graduate programs in vocational and technical education in Kenyan universities that would foster commitment to excellence in disciplined inquiry, personnel development, and service. He concluded that, though "programs of vocational education are a major part of Kenya's educational and training systems, it is surprising to note, however, that our national universities do not have any vocational teacher education programs" (p. 15).

At a comprehensive level, this comment remains true. For individual subjects, however, this statement is not accurate. For example, the Faculty of Education at Kenyatta University offer B. Ed., PGDE (Post-Graduate Diploma in Education), and M.Ed. degrees in Business Education (Accounts and Commerce), Fine Arts and Crafts Education, Home Science Education, and Secretarial Studies Education, all of which are considered part of vocational education in Kenya. Egerton University offers similar degrees in Agricultural Education.

Kenya Technical Teachers College, while not offering degrees, does offer Diplomas in several areas of vocational and technical education and an Advanced Diploma in Electrical Engineering and Entrepreneurship Education. As of 1989, KTTC was the "only institution in Kenya that produces professional technical teachers at the moment" (Ayot, Patel, Kiminyo,

Orwa, Okech and Godia, 1989, p. 329). At that time, it produced an average of 190 teachers per year, "far short of demand" (Ayot et al., 1989, p. 331). A tour of the facility revealed a spacious campus and well-maintained facilities. The workshops, however, were "virtually unused," as technical courses were no longer offered. The Dean of Students explained that this was caused by a shortage of hostels, so that more students could not be accommodated. It was our judgment that a shortage of qualified faculty and the age of the equipment in the workshops were more relevant explanations. This was in contrast to the Ayot et al. (1989) findings that considerable energy went into training at technical levels rather than at teacher/trainer levels. Most of the faculty have only PGDE or BEd degrees.

Kerre (1987) made the case for the need in Kenya to develop a high number of new teachers with a vocational and technical education background. He concluded that, among the three problems causing serious constraints in the schools for vocational and technical education (facilities, equipment and materials, insufficient and poorly trained teachers), "the most serious constraint faced by both primary and secondary schools is the availability of qualified vocational teachers" (p. 42). He went on to argue that "up to a minimum total of 5 vocationally trained teachers are (sic.) required for each of the 12,943 primary schools in the country" (p. 42). When secondary and post-secondary schools were added to this total, it is clear that there is definitely a need for attracting and training vocational teachers.

Kerre (1986) had earlier suggested that:

Post-Graduate Diplomas in Education should be awarded to prospective vocational teachers who already hold diplomas or bachelors degrees in vocational and technical areas. Masters and Doctoral programs in vocational education should emphasize professional skills in research and evaluation and curriculum development in vocational fields. (p. 20)

One of the difficulties that will be faced in implementing a vocational and technical education and training program in a Kenyan university, however, will be the generally poor condition of higher education in Kenya, as in many other developing countries. Mazrui (1994) highlighted some of these factors as poorly stocked libraries, lagging behind in computer revolution, and direct interference by the government in university affairs. All these factors were personally experienced, observed, or heard during the visit to Kenya.

Another article by Tunbridge (1995) concluded that Kenya's higher-education system was the envy of many poorer African countries two decades ago, but political interference and mismanagement have brought Kenya's universities to the brink of collapse. Nevertheless, this is reality, and the context for a teacher education program in vocational and technical education will have to be taken into account in carrying out the recommendations that follow.

Supply and Demand of Personnel for Vocational and Technical Jobs. The current National Development Plan (Kenya, Republic of, 1994) appropriately pointed to the necessity of having good data on employment and personnel supply and demand in order to make good decisions in terms of development. It pointed to the necessity of providing information on the requirements, availability, and distribution of human resources. This would be based on the understanding of the present and future situation regarding supply and demand of manpower and their implications.

Because of this perceived importance, the Plan committed that the Ministry of Labor and Manpower Development and Organizations will carry out periodic and regular manpower and production surveys to generate the necessary database to facilitate a comprehensive manpower planning process. Manpower policies were to be formulated in relation to national needs, and appropriate educational and vocational training systems were to be planned. In spite of such a commitment, it appears that, at the end of the Plan's term, no such report or databases had been developed. A library search produced no such report. A visit to the library of the Central Bureau of Statistics confirmed that the most recent Labor Force Survey and the most recent Manpower Planning report were both published in 1988, much too old to be of much relevance in planning almost ten years later.

Because of problems associated with such projections, however, failure to provide such a report may not be significant. Kraak (1993) warned that manpower planners cannot accurately forecast future occupational requirements. This was because of the high degree of substitutability among related occupations, fast moving technologies, and unpredictable fluctuations in economic production. Short of such statistics, however, the Plan, itself, did contain information on employment and expected changes in employment. However, it was not at all clear, as Kraak (1993) warned, as to the source of the projections, except that they appear to be intuitive on the part of the report writers. They claimed, for example, that "the modern sector of the Kenyan economy will only absorb a small portion of job entrants" (Kenya, Republic of, 1994, p. 214).

On the other hand:

The informal sector was expected to play a major role in job creation for many of the new entrants into the labor market. There was need to develop more advanced technical and entrepreneurial skills for those who have the means to start their own businesses. Retiring professionals need management skills, like business planning, record keeping, cost accounting, procurement and inventory control, market analysis, communicating, supervision and credit management for their entrepreneurial engagement. All these should be preceded by training needs assessment to determine among other factors the target group, level of training, nature of skills and facilities for training. (Kenya, Republic of, 1994, p. 203)

During the period of the Plan, the labor force (defined as members of the population who were economically active and aged between 10 and 69 years of age, either working or searching for work) was expected to grow from 9.4 million in 1990 (population about 22.8 million) to 11.5 million (population about 28.2 million) in 1996 (Kenya, 1994, p. 203).

### Research Methodology

To assess the need for a vocational and technical teacher education program, including human resource development (HRD), interviews were conducted with faculty at Kenyatta University, leaders in secondary and other tertiary institutions in Kenya, and government officials. An assessment was also made of resources available from many sources. Literature on vocational and technical education and vocational training in Africa, and in Kenya, specifically, were identified and exhaustively reviewed. Official government publications were also reviewed in order to get an understanding of the official position on vocational and technical education and training. An HRD leader in a private company was also interviewed

in order to find out what Kenyatta University could do for business and industry. Interviews were conducted in a conversational and unstructured manner and were recorded manually and later word-processed. Care was taken to record objectively what the interviewees said during the interviews. The literature reviewed, the interviews conducted, and the observations from visits were all used to develop a description of the status of vocational and technical education in Kenya in general and Kenyatta in particular.

To validate the findings of the interviews, literature review and observations, students from Kenya at the University of Minnesota were given copies of the report and were involved in the interpretation of the data collected. They were also involved in the revision of the reports.

### Findings

It was found that Kenya had from time to time attempted to reform its education system in order to respond to the cultural and development needs of the country. Early in the formative years of the newly independent country, a more academic curriculum was preferable to a vocational and technical education for historical reasons. However, unemployment of persons with academic education forced the rethinking of the education system. The need to provide a more relevant practical-oriented curriculum was felt.

The new 8-4-4 education system was implemented specifically to meet the needs of a more vocationalized curriculum at all levels (elementary, secondary, and tertiary) of education. Pupils in the later years of the primary school cycle had opportunities to learn eleven courses in vocational and technical education. The secondary school cycle of the new education system offered even more opportunities.

It was found that Kenya had many post secondary (tertiary) institutions offering vocational and technical education and training. A vocational and technical education and training curriculum was offered at three national polytechnics, nineteen institutes of science and technology, thirteen technical training institutes, a technical teacher training college, youth polytechnics, formal and informal apprenticeships. Most of these institutions were identified from writings by Kerre (1986) and from additional readings and conversations. In addition, there were many other post-secondary institutions catering to specific vocational and technical training needs, such as surveying, mass communication, farming/agriculture, aviation, and many more.

The national universities had very limited participation in vocational and technical education. Even with the 8-4-4 curriculum, the universities lagged behind in the implementation of vocationalized curriculum. The universities were not directly involved in human resource development for the private sector, though fledgling efforts were under way at Moi University in Eldoret. Multinational corporations and other corporations were found to be responsible for their own training and development, general management skill development, technical training, and training of trainers. The private sector looked forward to opportunities to participate in HRD programs at universities whenever they became available.

### Conclusions

The following conclusions were reached from the available information obtained through interviews, observations, and perusal of documents:

1. Kenya needs a more highly developed system of vocational and technical education and training which will develop only with appropriate leadership.
2. Human resource development has great potential for growth and impact on business and industry in Kenya.
3. Kenyatta University has the potential in personnel and other resources to take a leading role in vocational and technical education and training in Kenya.

### Recommendations for Kenyatta University

The following recommendations were made for Kenyatta University:

1. As one of UNESCO's regional centers for the promotion of technical education, take a leading role in the country's efforts at vocationalization of the curriculum at all levels of education.
2. Include HRD in the implementation of vocational and technical education at Kenyatta University.
3. Make changes in the existing programs in order to incorporate VTET curricula.
4. Form linkages with other tertiary institutions in order to tap the human resources already available in the country.
5. Develop faculty to handle vocational and technical education at baccalaureate and graduate levels.
6. Modify all education courses to include vocational and technical education and training as it applies to content of the courses.
7. Add Agricultural Education, Health Education, and HRD as expertise increases.
8. Allow newly created courses in VTET to be available as electives.
9. Improve facilities in all content areas supporting the VTET thrust.
10. Offer PGDE and M. Ed. in Vocational and Technical Education and Training.
11. Offer Ph. D and Ed. D degrees when there is sufficient faculty base and student demand for the programs.
12. Begin planning for a Department of Vocational and Technical Education and Training.
13. Plan for partnerships with Kenya Technical Teachers College, Kenya Science Teachers College, and Egerton and Moi Universities.
14. Provide leadership in research, scholarship and policy development in VTET for Kenya, including offering opportunities for school-based and nonschool-based institutions and instructors.
15. Establish an advisory committee with members from business and industry, faculty and administrators, representatives from ministries, labor union leaders, influential politicians, and citizens.
16. Seek government funding for its programs.
17. Reaffirm to UNESCO its interest in continuing as a regional center for VTET.

### Follow-Up

Kenyatta University administration was in agreement with both the conclusions and the recommendations. The implementation process was to be handled by the authorities at Kenyatta University. A chair for the department was identified during the project in 1997. However, the current situation of retrenchment and cost saving strategies has put the implementation process on hold.

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