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THE UNIVERSITY OF ALBERTA

TEACHERS' EFFECTIVENESS AT THE ZAMBIA INSTITUTE OF TECHNOLOGY

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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ABSTRACT

The Zambia Institute of Technology (ZIT), which was created in 1975, is one of fourteen Technical Institutions in the Department of Technical Education and Vocational Training. The purpose of this study was to investigate the effectiveness of the Zambian Instructors, who were trained in Zambia and overseas (in Canada), and who have returned to work (in Zambia) at ZIT.

Initially, ZIT was staffed by non-Zambian Instructors, especially Canadians, as per memorandum of understanding between the two governments. As project ZIT was phasing out, more Zambians were to have been trained to replace their Canadian counterparts as instructors at this institution.

Responsibility for training new technical instructors rests with the Department of Technical Education at the Luanshya Technical and Vocational Teachers College. There is a lack of clear and adequate staff development programmes and a proper definition of goals by the Ministry concerned. As a result, the in-service training programmes offered overseas have had little impact on the trainees. Obviously, the level of preparation of the instructors needs to be upgraded.

The results of this study reveal that the Principals perceive their Zambia - trained instructors as lacking

training in their areas of specialization while the students graded them high on the following items: range of difficulty of examinations, instructors' grading system, and instructors' overall ability to arouse student interest and enthusiasm for the course.

This, of course, necessitated a re-examination of the method of certification, as well as of the general administration, to see how much they reflect the needs of the students, the teachers, the institutions, the society and the nation.

With the price of copper, Zambia's leading foreign exchange earner, down at very low levels, it is necessary that the administrators and officials in authority restructure the country's economic and technological priorities. Some suggestions and recommendations, especially in terms of technical and vocational education have been made in this study.

The study is based on documentary evidence, official and unofficial, and it is hoped the conclusions arrived at will be at least of some help to the government in its training programme for technical teachers.

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CHAPTER I

INTRODUCTION

0.1.1. Orientation to the Problem

People of Zambia, like those of any other country, believe that a good teacher is the product of a good education both academically and professionally. The best possible general training programme, as well as professional education to teachers in the training institutions are therefore, necessary. This means that those who educate and train teachers must themselves be highly competent and of superior quality, and that the teacher training institutions must have adequate and appropriate facilities to do their job effectively. A fair number of the youth in the country must also be attracted to teacher 'training' institutions to train as teachers.

0.1.2. Staff Development

To achieve the above goals the Zambian Government gave absolute priority to the development of an adequately trained force of teacher educators', since, as indicated above, the quality of education offered in schools depends greatly on the competence and skill of the teachers graduating from training colleges.

The effective implementation of the curriculum process is dependent on the skill of the teachers graduating from training colleges. They should be knowledgeable not only in their respective disciplines, but also in pedagogy relevant to the level of education for which they will be training students. There should be, therefore, short in-service and upgrading courses for teacher educators to ensure that they, too, keep up-to-date with new developments and techniques in their field. This can be fulfilled with a careful training programme which has as its objectives those of the Zambian Department of Technical Education:

> to train Zambians to meet the needs and requirements for skilled manpower to facilitate more meaningful development in the critical area of technological, industrial, agricultural and economic aspects of National Development. This programme must be shared with donor countries, in the form of technical co-operation, or technical aid. (Education Reforms, p.9).

0.1.3. Statement of the Problem

The specific problem of this study was:

1. To identify two groups of instructors:
   a. those trained in Zambia only,
   b. those trained in Zambia and Canada.
2. To compare teaching effectiveness in relation to the two types of training.
3. to compare the attitudes toward in-service training outside the country.

0.1.4. The Sub-problems

1. What are the perceptions of students and principals regarding teacher effectiveness?
2. Is there a relationship between students' and principals' perception of teacher effectiveness?
3. To what extent does training overseas affect the participants in terms of:
   a. skills and ability
   b. salary
   c. value and accomplishments
4. How do Zambian instructors react to the Canadian training offered in Canada?

0.1.5. General Objective

To evaluate the effectiveness of technical education instructors who are now working in Zambia at the Zambia Technical Institute of Technology after attending an in-service training programme in Canada.

0.1.6. Methodology

In order to achieve the major objective stated above, i.e. the "evaluation of instructor effectiveness", the following procedural objectives were followed:

1. An interview schedule-questionnaire was designed specifically for this study. This part will be dealt with later in Chapter III.

2. Two groups of instructors were identified:
   a. those trained in Zambia only;
   b. those trained in Zambia and in Canada.
3. The questionnaires addressed two areas:
   a. teacher effectiveness
   b. attitudes towards in-service.

0.1.7. Delimitations

The investigation was delimited to the instructors within the Department of Technical Education, but specifically those of the Zambia Institute of Technology.

0.1.8. Limitations

There were limitations due to:

1. Time constraint on the researcher to collect data during school holidays.
2. The school calendar of the Department of Technical Education which is on a quarterly basis. The number of graduates is reduced by school calendar.
3. The lack of reliable transport to facilitate the researcher's movements. (See geographical positions of institutions involved). Appendix VII.
4. The geographical locations (see map of technical institutions in Zambia). Appendix VIII.

0.1.9. Assumptions

The study assumed the following:

1. That the instructors involved in this study were competent in their subject area.
2. That the member of the two groups identified in this study would have little or no difficulty completing the research instrument.
3. That the students taught by these instructors were all from grade XII (or form 5, spring V), and therefore, would also have little or no difficulty completing the research instrument. (See tables)
4. That the modified evaluation instrument selected was appropriate to evaluate instructor effectiveness in institutions within the Department of Technical Education in Zambia.
5. That the participants (principals, instructors, and students) understood the questions in the research instruments, and that they gave valid responses concerning effectiveness of, and attitude toward in-service programmes in Canada. The Instrument of Evaluation of Teacher Effectiveness by Principals is found in Appendix I.

The Instrument of Evaluation of Teacher Effectiveness Students is found in Appendix II.

The Teacher Self-Evaluation Instrument is in Appendix III.

0.1.10. Validity Content

The Researcher assessed different evaluation instruments used in teacher evaluation (See Appendix IV). The selected and improved instruments (Engineering Education, February 1982, p.373) were further scrutinized and inspected for validity content by the following people:

1. In-service Zambian trainees at N.A.I.T.,
2. Dr. K. Puffer, Thesis Supervisor, and Specialists in post-secondary teacher education at the University of Alberta;
3. Dr. Illiot, Specialist in industrial arts teacher education at the University of Alberta;
4. Mr. Simpito, Vice-Principal, Z.I.T., Zambia, who inspected the instrument for ambiguity before it was administered.

0.1.11. Importance of the Study

This study, believed to be the first of its kind conducted in Zambia within the Department of Technical Education, has potential merit since it should:

1. Evaluate the effectiveness of training programmes offered both at Northern Alberta Institute of Technology (N.A.I.T.) as compared with both the Zambia Institute of Technology (ZIT) and the

Technical and Vocational Teachers' College (TVTC) of Zambia.

2. Provide advice to the programme's administrators and staff on ways to improve their services.
3. Help policy-makers to bring about basic changes in programme structures or programme funding.
4. Be useful to other developing countries which seek to train their staff both locally and overseas.
5. Improve teacher preparation.
6. Result in the adaptation of this instrument for teacher evaluation.

CHAPTER II

REVIEW OF LITERATURE

0.2.1 Background to the study

0.2.1.1. Plan of co-operation

A plan of co-operation between the Zambian and Canadian governments was approved by the Department of Technical and Vocational Training in Zambia on the 10/3/74 (see draft 127 appended). This plan was known as Project: Technical Education and Vocational Training.

The duration of the project was to be 64 months (April, 1973 - July, 1978). All the funds under the said project were to be contributed by the Government of the Republic of Zambia totalling K25,022,735.00.

0.2.2. Technical Assistance Programme

As part of this project a memorandum of understanding between the two governments (Zambia and Canada) was signed for an Institute of Technology. This memorandum stipulated the conditions governing Canadian personnel living in Zambia under the Canadian Technical Assistance Programme. In due course, the programme was well organized and a clear administrative understanding between the Canadian International Development Agency (CIDA) and the Department of Technical Education and Vocational Training (DTEVT) was signed

in Lusaka, Zambia in March, 1975. The terms of references were:

1. Within the existing programme of co-operation between the Canadian International Development Agency (CIDA) and the Department of Technical Education and Training (DTEVT), which has been approved by both the Government of Canada and the Government of the Republic of Zambia, it is understood that CIDA will provide, within existing financial parameters, for the 1975/76 and 1976/77 contract years (defined as August to August). The following:

   a. Personnel, up to eighty-six (86) man years, as detailed in Appendix A to this document;

   b. Fellowships, up to thirty (30) per year, to be awarded to Zambian citizens (normally these fellowships will be tenable in Canada and will be used, in so far as is possible, to further the Zambianization process of CIDA supported positions); and

   c. Construction Management and Supervisory Personnel, up to six (6) man years, to support the Canadian Architectural Firm engaged in the design of the Zambia Institute of Technology, Kitwe, in maintaining on-site the:

      1. Resident Engineer,

      2. Resident Mechanical Engineer Supervisor, and

      3. Resident Electrical Engineering Supervisor,

      In order to ensure successful completion of construction, and to complete and hand over to DTEVT Building Section as-built drawings and maintenance manuals.

Programme of co-operation."(SEQT)

2. The Department of Technical Education and Vocational Training will expedite all the necessary administrative procedures, including the following:

   a. ACCEPTANCE of CIDA nominated personnel:

   b. PROVISION OF WORK permits to Canadian personnel prior to, or on, arrival in Zambia;

   c. RECEPTION of Canadian personnel on arrival in Zambia ; and

   d. IDENTIFICATION AND NOMINATION of fellowship candidates.

3. This document is to be considered an administration understanding only, the purpose of which is to facilitate the implementation of the existing programme of co-operation."

0.2.3. Purpose of Objectives of Programme of Co-operation

The "Plan of Co-operation" states that:

PURPOSE

a. The purpose of the project is to improve and expand the programme of technical education and vocational training in Zambia.

b. The specific objectives of the project are:

   1. to design, construct, equip and staff the Zambia Institute of Technology at Kitwe, and to establish relevant training programmes to industrial technician and engineering technology students;

   2. to establish and maintain a co-ordinating organization for all technical and vocational training programmes in Zambia, including training for industry, business, and commerce, technical and commercial teacher training, and other formal or informal programs;

   3. to organize and establish an Occupational Standards and Certification Unit, within

the approved structure of the Ministry of Education, and the Department of Technical Education and Vocational Training, for the development of national occupational standards through examination and inspection.

c. This project provides for a five-year continuation of technical assistance by the Canadian International Development Agency in technical/vocational training in Zambia. It also provides for professional training of a specified number of local personnel to ensure a gradual Canadian withdrawal during the five-year contract period.

0.2.4. The Zambia Institute of Technology

The Zambian Institute of Technology was founded in 1975 under the Commission for Technical Education and Vocational Training. The new campus was completed in January, 1978. It was designed by Number Ten Architectural Group, Winnipeg, Canada. The work was carried out by contractors: Messrs. Minestone Zambia Ltd.

The Institute originally comprised three campuses viz: Luanshya, Kitwe City Centre and Luanshimba. The City Centre Campus, which was the last to shift, moved to the present campus, Riverside, in August, 1980.

0.2.5. Utilization of ZIT Campus

The auditors' report, 7 September (1982 p.3), says:

Zambia Institute of Technology Campus at Riverside was built to cater for 1,660 students, and since

inception full capacity of student intake has not been achieved. The average student intake from 1976 to 1981 has been as follow:

Year	No. of Average Students	
	Z.I.T.	UNZA
1976	823	--
1977	798	--
1978	976	84
1979	770	357
1980	626	334
1981	718	445

Many reasons were attributed to the failure to utilize all services. These were: mainly financial constraints to meet boarding expenses, and lack of academic staff, despite recruitment abroad. As a result of the above, various facilities such as staff houses, offices, classrooms and student hostels remained under-utilized. It took a long time before the language laboratory was utilized. The computer centre was still idle due to lack of funds, though air conditioning fittings and redesigned functional flooring had been completed. The cooler plant and computer hardware have not been purchased.*

Staffing: The plan of Co-operation 1975 states that:

...during bilateral discussions which led to the formalization of the administrative understanding covering the period from August 1975 to August 1977, it was agreed that D.T.E.V.T. should specify at the earliest possible time, the required level of support over a five-year period, during which time assistance would be phased out.

---

* In accordance with the University of Zambia programme to establish a University Campus in Ndola to cater for the School of Business and Industrial Studies, it was decided that the University be accommodated temporarily at ZIT campus in Kitwe, while awaiting construction of a permanent campus in Ndola. (Auditor's report (Appendix VI,p.3).

Canadian Personnel: One Hundred and Twenty-Two (122) man years made up as follows:

a. 1977/78 - Forty man years (40)

b. 1978/79 - Thirty-two man years (32)

c. 1979/80 - Twenty-four man years (24)

d. 1980/81 - Sixteen man years (16)

e. 1981/82 - Ten man years (10)

Fellowships (for Zambians who will be trained in Canada for Canadian replacement). - up to Twenty (20) per year Construction Management and Supervisory Personnel up as follows:

a. 1977/78 - Three (3) man years

b. 1978/79 - Three (3) man years

c. 1979/80 - One (1) man years.

Note: It must be understood that the above figures for the phase-out are preliminary.

There are 174 positions in the establishment at the Zambian Institute of Technology of which 10 are administrative posts. (Appendix VI).

0.2.6. Staff at Z.I.T.

The following is a list of statistics as per:

Institution	Approved Establishment	Zambian M	Zambian F	Non-Zambian M	Non-Zambian F	Total
1975 Z.I.T.	168	7	-	100	9	116
1976 Z.I.T.	168	4	-	82	4	90
1977 Z.I.T.	168	26	-	71	5	102
1978 Z.I.T.	168	26	-	66	6	97
1979 Z.I.T.	168	24	1	62	6	93
1982 Z.I.T.	162	34	6	67	6	103

1982 - The breakdown is given in the Appendix IX

0.2.7. Orientation to Zambia

The republic of Zambia, formerly known as Northern Rhodesia became independent on the 24th of October, 1964. It is entirely land-locked, by Zaire, Angola, Namibia (South West Africa), Botswana, Zimbabwe, Mozambique, Malawi and Tanzania. The area of Zambia is 752,620 sq. km. Appendix VII shows the geographic location of the Republic. Population figures for the last census taken in 1980 was 5, 670,808. The population by Provinces and Urban and Rural Areas is given in Table, Appendix XIII.

0.2.8. Manpower Development

In the third world, any country that acquires political independence is usually faced with a manpower problem that requires an immediate solution, Zambia is no exception:

> Zambia could not provide, from among her own citizens, the professional personnel and skilled workmen needed to run the government and push the economy ahead. (Manpower, 1966. Cap. p.1)

One way the Government of the Republic of Zambia thought of solving this problem was through careful national development plans. In these, priority was given to general education. Then in 1974 emphasis was specifically placed on technical education and manpower development, as advocated in the following statement:

> The First National Development Plan, has one of the major objectives, aimed to provide at least 100,000 additional wage jobs by 1970. In addition, it undertook to expand the opportunities so that Zambia can move progressively toward self-sufficiency in skilled and educated manpower. (Manpower, p 13)

0.2.9. Need for Trained Manpower

With the rapid growth in industry and society at large, the government quickly realized the need for more locally trained personnel in technological areas. This state of affairs is characteristic of the type of education offered before and after independence. A typical example is seen in the Appendix showing the number of apprentices indentured before and after independence. (Table B. Annual Report,

1975, p. 45) Manpower Planning 1966, has thus stated:

> The Vast majority work force at Independence consisted of Zambians, of course. Most jobs requiring post-primary education or special training, however, were occupied by non-Zambians, among whom citizens of the United Kingdom and South Africa predominated. Few Zambians had opportunity to advance as far as Form II (Grade IX). Africans had, until shortly before,been formerly excluded from apprenticeships and were only rarely accepted for other courses of intensive training for skilled jobs. Few had the opportunity to gain experience in responsible administrative positions.

This largely explains why Zambia lacked local instructors in secondary and technical institutions, and why they were filled by competent and well-trained non-Zambian teachers or instructors. The Zambian Government recognized this situation and sought ways to increase local trained personnel:

> Bursaries offered by the Zambian Government and by other sponsors enabled an increasing number to enrol in Universities. In 1966, more than two hundred students, most of them Zambians, were working on degrees in the new University of Zambia, and more than three hundred were in foreign Universities. (Manpower pamphlet).

0.2.10. Zambianization

Zambianization according to Kandeke (1977, p. 26) is " a way to eliminate both imperialism and neo-colonialism. This is done by either the state taking direct control of the economy through various para-statal organizations, or by ensuring that enterprises are managed or owned by Zambians, co-operatively or individually." This came about at the time

of the Presidential pronouncement on Zambian economic independence, in which His Excellency The President Dr. Kaunda said:

> "We must be very frank and look squarely into the face of this whole problem. Today our society is being exploited very badly indeed by some unscrupulous men and women who are driven to the extreme right by the 'profit motive'. A good number of them bring very little capital into Zambia, but because of their know-how they are able to build something locally on borrowed Zambian money and then send out of the country excessive profits after a very short time. It is difficult to stop such exploitation without first involving Zambians themselves." (Fortman 1969, p. 36).

On foreign participation in Zambia, His Excellency the President said:

> "Our task is now to identify those difficulties that make it hard for us to control our own economy and then to plan to do something about it... This is something which only we Zambians must do and no other person can do it for us. We must think and plan our own way and only when it comes to implementing it must we then throw doors wide open to international participation in accordance with our non-alignment policy." (Fortman, p.36).

In the above pronouncements, one of the major problems identified by the government was that of skill shortage on the part of Zambians.

0.2.11. Skill Shortage.

There are two dimensions to the problem of skill shortage. On the one hand, The economy has grown so rapidly

and has become so much more complex, that it has been difficult to meet, from any source, the demand for workers with adequate education and training. On the other hand, national pride, national security, and a proper respect for the economy called for earliest possible replacement of skilled foreign manpower by qualified Zambians. Zambia could not attain to true economic independence if there were not enough Zambians to replace the foreigners.

0.2.12. Education and Qualifications

In his paper on Education and Qualification, R. Ross (1976), suggests that developing countries and their (western) educated people are the "victims of a system of schooling without education". As he sees it:

> The effect of schooling the way it allows a man's capacity and will to do things depends not only on what he learns, but also on why he learns it. That is the basis of the distinction between schooling which is education, and schooling which is only qualification, a mere process of a certificating or "credentialling" as American sociologists have recently started calling it. (p.8)

He continues:

> In the process of qualification, by contrast, the pupil is concerned not with masterly, but being certified as having mastered the knowledge he gains. not for its own sake and not for once-and-for-all purpose of reproducing it in examination. And the learning and reproducing is just a means to an end- the end of getting a certificate which is the passport to a coveted job, a status and income. If education is learning to do a job, qualification is a matter of learning in order to get a job. (Educational Review, University of Zambia, p. 94)

Are these foregoing statements applicable to some of the scholarships offered to Zambians by donor countries? This question invites serious study. This will be done along with the research studies teacher effectiveness.

0.2.13 Rationale for Evaluation

The primary rationale of evaluation is to provide feedback. This is intended to promote learning. Other purposes of evaluation, which have received considerable attention in the press, include: determination of accountability, and concern over teacher competency (Selma Wassermann, p. 280).

As early as 2200 B.C., the Chinese Emperor instituted a form or test to be taken by his public officials as part of proficiency requirements. It has since evolved and Josephum Rice during the last century "devised and used achievement tests...to support his contention that school time was inefficiently used" (Guba, p. 1).

At the beginning of this century Alfred Binet published a series of tests in 1905 as a "means for screening mentally handicapped children from regular classroom" ... and since then ... "Two world wars greatly stimulated the testing movement and resulted in widely usable group tests of intelligence and other abilities." By 1945 Hildreth was able

to list 5,294 mental tests and rating scales in her bibliography". (Guba, p. 1).

From the beginning of this century, evaluation has evolved in a way that can be characterized as follows:

- First, evaluation and measurement were virtually interchangeable concepts...
- Second, both measurement and evaluation were inextricably tied to the scientific paradigm inquiry. John Stuart Mill in 1843 urged that scientific approach be adopted in the study of social phenomena ... An early study by Starch and Elliot (1912) of teacher training utilized a comparative design.
- Third, evaluation and measurement were focused on individual differences ... "The rush to measure individual differences was precipitated by Darwin's work.
- Fourth, evaluation and measurement had little relationship to school programmes and curricula ... Further schools were not yet under the gun of accountability, and there was little reason for believing that the curriculum was not exactly what it should be.
- Fifth, evaluation was oriented to standardized and objective measures that were norm referenced ... But if norms are to have meaning all subjects must be tested under identical conditions as objectively as possible, and in ways consistent with predetermined rules of administration.
- Sixth, evaluation and measurement as conceived in line with the prevailing industrial metaphor that was guiding the schools. (Guba, p. 2-3).

0.2.14 Defining Evaluation

Selma Wasserman (Guba, 1981), in her paper entitled "Evaluation Practices and the Emperor's New Clothes", defines evaluation this way: "to determine the value, or the worth of something or someone." To her, the problem with evaluation is that: "the value or worth of something rests safely in the eye of the beholder. As the wise old Indian told us, 'It depends upon where you sit on the medicine wheel'." Guba himself defines evaluation as "a process for describing evaluating and judging its merits and worth". (Guba, 1981).

There are numerous definitions of evaluation. To state a few: Gronlund defines evaluation as a "systematic process of determining the extent to which instructional objectives are achieved by pupils" (1976: p.6). Cronbach referred to evaluation as "the collection and use of information to make decisions about an educational programme" (1972: p. 23) Scriven provides the following definition:

> Evaluation consists simply in gathering and combining performance data with weighted set of goal scales to yield either comparative or numerical ratings, and in the justification of: a)the data gathering instruments, b) the weighting, and c) the selection of goals (1974, p.40).

McCowan and Mongerson (ACIATE, 1977) support the foregoing definition and define evaluation as:

Glass (1975) has offered the following paradox:

> Excellent teaching appears to emerge when teachers feel that they are not being judged and evaluated and when they feel that their worth as teachers is

> not contingent on how [illegible] on an administrator's grading scale. And yet, it appears that teachers approach excellence in their profession to the extent that they respond to evaluations of their teaching. (G. Mathews, p. 617).

0.2.16 Personnel Evaluation

Gorton (1976) in his paper on personnel activities, says:

> Personnel Evaluation is considered to be one of the most important tasks to be carried out by administrators. The reason behind it is to improve the performance of the employees and to provide a basis for deciding whether they should be retained, promoted or dismissed.

He say further:

> One of the critical issues in personnel evaluation is the question of which criteria should be used.
>
> As evidenced by a large number of evaluations used,

Schofield and Start (1979 - 1980) submit that:

> The basic problem in research on teacher effectiveness is lack of adequate theory of teaching to help make sense out of previous or current research findings or to provide useful hypotheses for future studies. p. 130.

To support this statement, Fawcett (1979, p. 101) believes that the problems of developing valid criteria can be traced, in part, to a lack of agreement on educational goals.

Doyle (1979) contends that the research on teaching has not sufficiently taken into consideration the impact of student behaviour and other aspects of the classroom environment on teacher effectiveness. Doyle also points out that:

> Several recent studies have produced findings that appear promising in identifying the behaviour of an effective teacher. (Peterson & Walberg, 1979). Questions continue to be raised (Coker, Medley & Scar, 1980) as to whether research has yet identified and validated such behaviour.

0.2.17 Supervision

There is an historical function related to supervision, that of inspection. Since supervisors know what good teaching is, they can for this reason utilize their expertise and experience to evaluate teachers. The evaluation function of supervision threatens many teachers. Blumberg (1980) reports studies by De Sanctis, Blumberg and Anillikan that support this position. These studies reveal that "teachers seek assistance form other teachers far more often than they call on their formal supervisors, consultants, and principals".

Cooper supports recent summaries of research on teacher effectiveness (Medley, 1977; Brophy, 1979). These show that effective teaching behaviour varies from context to context, and is affected by such factors as the socio-economics status of children, the grade level, and the subject taught. Thus, in his opinion, there is no such thing as effective teaching behaviour across all context. Rather, teaching effectiveness must be considered within the context of each classroom. He argues that many school districts which have developed forms to evaluate teaching apply the criteria uniformly across teachers and classrooms; as if good teaching were universal, rather than situation (National Education Association 1964).

Commenting on teacher rating forms, Guba and Bidwell (1957) state that principals' rating of teacher effectiveness is in reality an estimate of the degree to which a teachers fit the principals' expectations of the teacher role.

0.2.18 Types of Evaluation

J.A. Centra in his book, Determining Faculty Effectiveness, identifies the following (p. 16):

a. summative evaluation

b. formative evaluation

Stakes identifies a third: i.e. c. responsive evaluation.

a. summative evaluation: evaluation of faculty performance as it relates to using collected information to make personnel decisions.

b. formative evaluation: evaluation of faculty to improve performance, it is meant to help "form performance while it is in progress".

c. responsive evaluation: "An education evaluation is responsive evaluation if it orients more directly to programme activities than to programme intent, responds to audience requirements for information; and if the different value perspective present are referred to in reporting the success and failure of the programme (Stakes, p. 14)

The researcher preferred to use the last type as a model for his research.

0.2.19 Purpose of Evaluation

Teacher effectiveness evaluation is of great importance to three groups of decision makers (T.R. Watruba and Penny L. Wright, 1975)

1. Administrators, who are responsible for counselling faculty members and for evaluating them with respect to retention, tenure and promotion;
2. The members of teaching faculty themselves, whose purpose is to gain feed-back on their teaching ability so that they can improve themselves;
3. The students who, for whatever reason, seek information which will help them select instructors and courses.

It is with these three groups in mind that I will discuss the Evaluation of Teacher Effectiveness.

Nathan Gage (1958) makes a distinction among kinds of evaluation according to purpose. He noted that teaching can be appraised:

1. to provide a basis for administrative decisions on academic rank, tenure, and pay;
2. to provide a basis for self-improvement on the part of the teachers;
3. to provide a criterion for research on teaching.

Other authors have suggested a fourth purpose: to

provide a basis for advising students on course selection.

These four are the most often cited reasons for evaluating instructors (Doyle, 1975, p. 3).

0.2.20. Problems of Teacher Evaluation

G.A. Centra, (1979) has shown that a number of teachers resist evaluation, although most concede that some means must be found to prune the "dead wood" from their ranks. They base their resistance on two points:

1. The classroom is their personal realm and any attempt to assess what happens behind classroom doors is an invasion of privacy;
2. How they teach and what they teach is their responsibility alone.

Centra however, argues that "the classroom is no longer the sole domain of the teacher. Students also have rights, and colleges have a responsibility to ensure the quality of courses offered."

0.2.21. Subjectivity

There is a variety of rating instruments used today in education. There is also a large number of users, namely: superintendents, teachers, students, and even parents and board members. Filling out rating forms is probably the most common technique used to measure teaching behaviour; yet it

is alone one of the more problematic aspects of education. Ornstein (1980) in his study shows that, in addition to the problem of identifying the qualities in a teacher that facilitate learning, different groups who function as raters are markedly surprised in view of the fact that all humans are handicapped by their own personal biases and beliefs. He also feels that educational raters lack first-hand information concerning the classroom environment except for student rating. They also lack sufficient day-to day understanding of teaching or of the subject being taught to make sound judgement. Besides, various groups have different philosophies, goals, and job responsibilities, and therefore different attitudes about teaching.

Ornstein (1980) identifies some of the following as contaminating factors that effect the raters:

1. "halo effect", where the rater evaluates or reacts to each item in the direction of the general impression of the teacher;
2. "error of leniency", a tendency of the rater to rate high or low, no matter what the reason;
3. "error of central tendency", whereby the rater is reluctant to make extreme judgements about others;
4. "constant error", whereby the rater tends to rate others in the opposite direction of his attitudes and behaviours. (For example, the rater who is

business-like tends to rate the teacher as less business-like).

Other factors that tend to affect raters are:

1. sex
2. race or ethnicity
3. intelligence
5. understanding of directions
6. understanding of purpose
7. time to complete the rating
8. possession of the traits being measured
9. perception of the right or best answer
10. different criteria raters employ for assessing the same trait or behavior.

The teachers' and raters' frames of reference were also considered important since some raters have political agendas, and others are not always honest about their biases.

The conclusion therefore is that because raters are human, their judgements are imperfect for they are susceptible to selective perceptions, memory, and sensitivities.

0.2.22. How to Evaluate Teachers

There are many ways of evaluating teacher effectiveness.

Donald L. Haefale (1980) summarizes 12 approaches to teacher evaluation:

1. The teacher's competence is measured by performance of teacher's classes as standardized tests given at the end of the year.

2. Standardized tests are administered to students to determine how much they increase their learning over time.

3. Students in each grade or subject-matter area are tested at the beginning and end of each semester or school year. (p. 349). Gain scores are computed to contrast class performance gain or loss with classes of comparable ability. Teacher effectiveness is measured by proportion of "gainers" to "losers" (p. 349).

The above three approaches focus on students' performance on standardized tests.

4. Informal observations and ratings of the teacher are conducted by the principal and or other supervisory personnel. Comments by students, parents, and colleagues are incorporated in the final evaluation.

5. Systematic observation of the teacher is conducted by the principal and supervisor, using a rating form that lists characteristics or good teachers. The teacher evaluation score is compared to a school district standard.

6. The teacher is systematically observed and rated by peers on the extent to which he exhibits important characteristics of good teaching.

7. The teacher's students use a rating form to judge the extent to which the teacher exhibits important characteristics of good teaching.

8. The teachers are required to take the National Teacher Examination (NTE) and achieve a predetermined standard composite score.

9. Periodically, the teacher is provided with an instructional objective, a sample test item measuring that objective, and information about the contents it covers. Teacher effectiveness is

determined on the basis of how well the students achieved the objective.

10. The teacher Perceiver Interview is administered to teachers. Teacher effectiveness is based on how well the teacher meets a predetermined criterion or norm-reference score.

11. The teacher is given written descriptions and/or shown films of typical classroom problems. The teacher's effectiveness is judged on the basis of answer quality.

12. The teacher, together with the principal and curriculum supervisor, establishes mutually agreed upon (negotiated) instructional goals and objectives for the year. Observation data and other sources of information gathered at regular intervals during the year are used to monitor and evaluate the attainment of goals. (Haefale, p. 350-358).

The last eight approaches focus on free, self and administrators evaluation. The major two groups are discussed in the next few pages.

0.2.23. Peer Rating

A review of the literature by Allan C. Orstein and Harry L. Miller shows that what teachers feel are important varies considerably with the age and teaching level of the teacher, and also with the size and location of the school. When teachers are asked to rate their peers, the ratings are more positive than the ratings of supervisors and/or students. A trend that seems to cut across the studies is that older teachers, secondary school teachers, teachers in large schools, and teachers in city schools tend to rate cognitive behaviours and controlling behaviours (enforcement of rules)

as being more important (p. 283). Conversely young teachers, elementary school teachers, teachers in small schools, and in sub-urban schools all tend to feel it is impossible to exhibit warmth, friendliness, and sensitivity.

0.2.24. What are the Characteristics of Effective Teaching

Many techniques have been used over the years to identify potentially useful items for inclusion in formal systems of rating (Perry and Beaumann, 1973, Hilderbrand, Wilson, and Dienst, 1971). In 1975 Wotruber summarized twenty-one studies in which various groups had been asked to identify qualities of effective teaching. His work is similar to that of Centra, (1979) and Elizabeth Harris, (1982). The resulting list of what would be found in most studies of this kind included ten most frequently named characteristics:

1. Communication skills-clearly interprets abstract ideas and theories;
2. favourable attitudes towards students;
3. knowledge of subject;
4. good organization of subject matter and course;
5. enthusiasm about subject;
6. fairness in examinations and grading;
7. willingness to experiment-flexibility;
8. encouragement of students to think for themselves;
9. interesting lectures-good speaking ability;

10. other characteristics were also identified but did not rank as high as the first 9.

This study is further supported by Ran Chormesh and Joseph Tzelgov, "The College Instructor as a Leader"; J.E.R. (1979).

Many recent studies favour student evaluation as an indicator of instruction quality; Ran Chormes and Joseph Tzelogov (1979) L. Orpens (1979), (1980):

> (1979) Faculty members, like any other occupational group, try to succeed in their role performance. Teaching is an important component of their professional activities and thus becomes potential targets for experimentation and evaluation...(students, being the closest role complements of instructors are a natural reference group for feedback purposes)..."The lecturer may be conceived as a leader who must gain audience's co-operation in order to achieve the objectives of promoting the students' knowledge, skills, values, or attitudes.

Christopher Orphen (1980) in his study, Student Evaluation as an Indicator of Instructional Qualitys : stated "A validity study, has demonstrated that student evaluation can be a useful means of assessing teaching quality. That students are able to provide reliable and valid evaluation of instructional quality has come to be recognized (Alemoni, 1978; Coting et al 1971). This is also further supported by Orphen, 1980; and Harris, 1982. W.Y. Mckeachie, Y Guanglin, and William Mann said the following about ratings of teacher effectiveness: "Within the past four decades student opinions of teaching have been gathered as a source of data

on teaching effectiveness." In connection with studies of the interaction of teaching methods and student motives in determining achievement, the Michigan researchers have had continuing interest in the use of student ratings of teacher effectiveness (e.g. McKeachie, 1957, McKeachie and Salemon, 1958; Carney and McKeachie, 1966). Certain stable dimensions of teaching as rated by students (Isaacson et al, 1963) have been established. More recently we have been concerned with determining the validity of the ratings in terms of criteria student achievement.

0.2.25. Evaluation of Teaching Effectiveness

How can teaching effectiveness be best evaluated? The most unreliable approach is the use of student test scores. Norman E. Gronlund (1981) states that:

> In some schools a teacher's effectiveness is judged by the scores pupils make on published tests. This is an extremely unfair practice because there are so many factors, other than teaching effectiveness, that influence test scores. Many of these, such as the level of ability of the class, cultural background of the pupil, previous educational experiences of the pupils, and relative difficulty of learning different course materials, cannot be controlled or equated with sufficient accuracy to justify inferring that the results derived solely, or even largely, from the teacher's efforts.

Even if such factors could be controlled, published test results would serve as a poor criterion of teaching success because of the two factors mentioned earlier " they are not closely related to the instructional objectives of particular courses, and they measure only a portion of the learning

outcomes teachers strive for in their instruction.

0.2.26. Coaching for Test-As Side Effects

There are effects in using published tests as the sole or main measure of teaching effectiveness:

> - Grandlund maintains that "teachers will obtain copies of the test and start teaching pupils answers to specific items. Although this unprofessional practice may begin with a few unethical teachers, subtle pressures (to avoid looking ineffective by comparison) soon cause the practice to spread. Such "coaching for tests" of course, not only will distort the measures of teaching effectiveness but will invalidate the test score for other school uses (p. 299).

0.2.27. Reliability of Student's Rating

The question most educators are concerned with is, can student evaluations be used to determine rank, pay, tenure and similar personnel decisions about individual faculty? A review of literature shows that Doyle 1976, J.C. Comer 1980, C. Orphen 1980, Ran Chormesh and Joseph Tzelgov 1980 agree on student evaluation of instructors' effectiveness. Mintzes (1979) says: "In fact, the only evaluation technique which seems on balance to have reasonable reliability is evaluation of teachers by students." Doyle (1976) says:

> Research on the reliability of student ratings points quite clearly to the conclusion that ratings obtained from typically responsible students on rating scales constructed to professional standards regularly achieve a very high degree of reliability.

This same statement is further supported by Harris, 1981.

Student ratings are routinely used for summative faculty evaluation in colleges and universities throughout the United States. Research over the past twenty years has produced a number of rating instruments that experts such as Aleamoni (1981), Centra (1979), Costin, Greenough, and Menges (1971) and McKeachie (1971) agree carry acceptable levels of reliability and validity for this purpose.

0.2.28. Conclusion

Perhaps the reason that educators cannot find agreement on this issue is that teaching is too complex a behaviour to assess accurately---the interactions are too rapid and multi-dimensional. Any attempt to observe what the teacher is doing in the classroom, or to rate the teacher on some fine established scale, is masked by a host of other behaviours and interactions with the students which cannot be categorized on the same instrument, put into words, or separated empirically.

0.2.29 Complexity of Teacher Evaluation

According to George Mouly (1973), teaching is a composite activity, involving teachers, pupils and subject matter, a dynamic interaction that is obviously too complex to be defined in terms of a simple set of teacher traits or procedures. Half a century of research into distinctive features and characteristics of good and poor teachers has consistently failed to provide a universal profile of the "effective teacher":

Although certain teaching patterns are undoubtedly better than others, there probably is not one single kind of good teaching that fits all teaching situations, all teachers, and all pupils. It may even be that teaching is so complex, so intangible, so subjective, and so bound up with the nature of teachers as unique individuals - as opposed to production machines - that it will never be possible to reduce its components to an identifiable pattern (Ornstein, p.276).

CHAPTER III

METHODOLOGY

0.3 In the previous chapter the background to the study was presented. This chapter presents the methodology used to collect the needed data for analysis.

0.3.1. Criteria Used to Select Participating Schools

As discussed in Chapter II, the Researcher limited his study to institutions within the D.T.V.E.T., specifically the Zambia Institute of Technology. For comparative purposes, three other institutions have been included: namely Evelyn Hone College, Lukashya and Lusaka Trades Training Institutes. However, there were time constraints and travel difficulties, because these institutions were not operating on regular term time -- it was the end of school terms and a good number of students had even been released two days before the official closing date. Two schools therefore were involved in providing pertinent data for this investigation, and two others were involved on a supportive basis.

The following criteria were used to select the participating institutions:

1. That students in participating schools were Form V school leavers (certificated).
2. That the nature of the programmes offered was post-secondary (e.g. similar to NAIT programmes).
3. That teachers were locally trained

4. That the institutions were under D.T.E.V.T.
5. That the teachers involved were Zambian
6. That instructors involved in this study were first trained at T.V.T.C.

Because of these guidelines and the geographical location of these institutions, it was felt that the two schools (E.H.C. and Z.I.T.) would provide the necessary data for comprehensive analysis. See Appendix V.

0.3.2. Population and Study

The population for the study was drawn from two institutions, as discussed above. The name of each school and its location can be found in Appendix V.

The only personnel from each school that were involved in providing data for the study were vice principals and heads of departments (administrators), the instructors' (understudy), Zambian instructors and students taught by these instructors. Appendix V also contains a list of administrators who completed the research instruments.

0.3.3. Collection of Data

The researcher travelled to Zambia and handed over the instruments to the administrators of each of the four institutions. Following the prescribed directions given in each research instrument.

(a) Each administrator gave his reaction to each item statement of the principal's perception of teacher effectiveness instrument.

In all, all eighty (80) teachers were evaluated: twenty seven (27) from Z.I.T. thirteen (13) from E.H.C., seventeen (170 from Lasaka Trades, and twenty-three (23) from Lukashya.

(b) One hundred and eighty-nine (189) Z.I.T. and E.H.C. students in groups of seven participated in the evaluation of teacher effectiveness. Twenty-seven (27) of the forty (40) instructors from Z.I.T. and E.H.C. were evaluated. Fourteen of these had received training both in Zambia and Canada. Thirteen had received training in Zambia only; the rest either were untrained or had been trained in countries other than Canada.

Each student under the supervision of the administrator gave his reaction on the student's perception of teacher effectiveness instrument.

(c) Each teacher participant gave his reaction to each item on the instrument provided for teacher self-evaluation. Space was provided for comments on their teacher training in Canada or on their anticipated training overseas (Canada). These comments are included in this report and can be found in Chapter V.

The researcher also interviewed administrators of the Department Headquarters about the ZIT Project. A summary of the interview is part of Chapter V too, and the names of the interviewees can be found in Appendix VI B.

0.3.4. Reliability and Validity

The validity of these evaluation instruments rests on certain bases or fundamental assumptions. The most significant ones are:

1. There are different ways of evaluating programmes, and no one way is the right way (Guba, p.24).
2. The data obtained from the students, the teachers, and the principals would be most useful to the institutions involved.
3. The instruments used responded to audience requirements for information by reporting success and failure of the programme.
4. Data derived from administrators, teachers and students provided factual information, since the evaluators reacted to the instruments by making critical judgements of their day-to-day experiences.
5. The student evaluation of teacher effectiveness supported the recommendations statement of the teacher self-evaluation instrument.

As soon as these instruments were completed, each administrator returned them to the researcher who in turn returned them to the University of Alberta for analysis by computer.

0.3.5. Research Instruments

A modification of the Student Evaluation of Effective Teaching, Engineering Education, February 1982/373, was used for evaluation of students.

A modification of the instructors report card, University of Alberta, Winter Session, Term I, 1977 by Dr. K. Puffer, was used for skills and ability values on accomplishment by instructors.

Major components and sub-components of the instruments included:

1. Principals' Perception of Teacher effectiveness - 15 item statements
2. Students' Perception of Teacher effectiveness-15 item statements
3. Teacher Self-Evaluation (skills and ability) 6 item statements; and values and accomplishment: 12 item statements.

How each of the items on each of the three instruments was rated will be presented in a subsequent chapter of this report.

1. That the students' evaluation of their lecturers (instructors) can represent a useful means of assessing

the quality of instruction, as demonstrated by Orpen (Journal of Educational Research, p. 5, Oct. 1980, No. 1, Vol. 74).

0.3.6. Use of Research Instruments

The research instruments, Principal's Evaluation of Teacher Effectiveness and Student Evaluation of Teacher Effectiveness consisted of items which are characteristics of effective teaching (2.2.19, Centra, 1979). For each of these items the evaluator was expected to : make a judgement and rate each instructor participant in his institution in relation to the philosophy and objectives of the institution and to the needs of its clients. In rating instructors, based on the given key, each evaluator was instructed to indicate on the five-point scale his evaluation of the instructor's effectiveness, by drawing a circle to a corresponding number on that item in one of the five spaces provided.

The number 5 represented the UPPER EXTREME of the continuum - EXCELLENT, and 1 represented the opposite or LOWER EXTREME - POOR. Evaluators were asked to complete the item-rating instrument.

On teacher self-assessment inventory, the first part addressed instructors' skills, abilities, and salary. Evaluators were asked to rate each of the items by circling 1, 2, 3, or 4, depending on the extent to which they possessed the ability and skills.

The second part of this instrument addressed values and accomplishments. Evaluators were asked to respond to each item by indicating (by circling 1, 2, 3, or 4) to what extent their training helped them to achieve some of the criteria presented.

For the first and second part of this instrument, 4 represented the UPPER EXTREME of the continuum - TO A LARGE EXTENT, and 1 represented the opposite or LOWER EXTREME - NOT AT ALL.

The third part of Teacher Self-assessment Inventory addressed the evaluators' success in their professions. Each participant was asked to complete the evaluation instrument fully.

Space was provided on the research instrument where each evaluator was asked to give a brief account of his training in Canada. For those who had no chance to be trained in Canada, a comment on whether they would or would not like to be trained in Canada was solicited.

CHAPTER IV

RESULTS OF THE STUDY

The purpose of this chapter was to present the results of data analysis with respect to the sub-problems of the study. The chapter is divided into sections dealing with a single-sub-problem, or set of interrelated sub-problems.

0.4.1. Sub-problem 1

2. What are the perceptions of students and principals regarding teacher effectiveness?

3. Principal perception of teacher effectiveness.

To answer the above question, principals were asked to indicate on five point scale their response to the instrument in Appendix I; (Principals Perception of the Quality of the Instruction). The perception of principals was tested by Null Hypothesis: There is no significant difference between the two groups of instructors: those trained on both countries (Zambia and Canada) and those trained in Zambia only.

TABLE I

0.4.2. FINDINGS

0.4.3. Principal Perception of Teacher Effectiveness

Variable	Means and Standard Deviation	Means and Standard Deviation	Probability Significance P= 0.05	
Instrument Item		Zambia Trained	Canada Trained	Yes or Not
V 1	Teaching Effectiveness	3.6(0.6)	3.4(1.0)	0.3 Not
V 2	Value of Course	4,0(0.5)	4.0(0.2)	0.7 Not
V 3	Clarity	3.7(0.6)	3.4(0.9)	0.7 Not
V 4	Knowledge of Subject	3.8(0.5)	3.7(0.9)	0.5 Not
V 5	Enthusiasm	3.4(0.6)	3.3(0.8)	0.7 Not
V 6	Practice of what is taught	3.5(0.7)	3.6(0.8)	0.6 Not
V 7	Time Utilization	3.5(0.6)	3.4(0.9)	0.6 Not
V 8	Homework	3.2(0.8)	3.5(0.8)	0.2 Not
V 9	Pace of Presentation	3.5(0.5)	3.2(0.8)	0.06 Not
V10	Course Content	4.0(0.6)	3.8(0.3)	0.9 Not
V11	Text and Readings	3.9(0.8)	3.0(0.5)	0.4 Not
V12	Attitude	3.4(7.0)	3.5(1.2)	0.8 Not
V13	Training	3.5(0.6)	3.5(1)	0.7 Not
V14	Need for Training	4.1(0.5)	4.3(0.5)	0.01 Yes
V15	Teaching Methods	4.1(0.4)	4.4(0.4)	0.6 Not

Interpretation of the Findings

The only significant difference was accepted is on the item V14: Do you feel that he (instructor) needs further training in his area of specialization? Principals in Zambian Technical Education felt that:

- Zambian trained instructors needed further training in areas of specialization.

Therefore the null hypothesis was rejected at 0.05 level of significance P/0.05.

0.4.4. Student Perception of Teacher Effectiveness

Is there any significant difference between Instructors trained in both Zambia and Canada and those trained in Zambia only. To answer the above question, students were asked to indicate on five point scale, their response to the instrument in Appendix II; (Students Perception of the Quality of the Instruction

TABLE II

0.4.5. Students Perception of Teacher Effectiveness

Variable	Means and Standard Deviation		Means and Standard Deviation	Probability Significance	
Variables	Instruments Items	Zambian Trained	Canadian Trained	Significance	
S 1	Interest	3.7(1.1)	3.1(1.1)	0.2	Not
S 2	Knowledge	3.7(1.0)	3 (1.2)	0.4	Not
S 3	Preparation	3.5(0.9)	2.9(1.1)	0.4	Not
S 4	Questions	3.7(1.2)	2.3(1.1)	0.01	Yes
S 5	Help Student	3.5(1.0)	3.7(0.7)	0.3	Not
S 6	Relevance Homework	3.5(0.7)	3.2(0.8)	0.4	Not
S 7	Size of Homework	3.7(0.9)	2.9(0.7)	0.07	Not
S 8	Frequency of Homework	3.8(1.0)	3.2(0.9)	0.1	Not
S 9	Examination difficulty	3.9(0.4)	2.8(0.8)	0.0005	Yes
S 10	Grading	3.6(1.0)	2.7(0.9)	0.05	Yes
S 11	Use of Course Outline	3.6(1.0)	3.3(0.9)	0.6	Not
S 12	Use of course Objectives	3.5(0.8)	3.1(0.5)	0.1	Not
S 13	Communication	3.7(0.8)	3.0(0.8)	0.09	Not
S 14	Humour & Seriousness	3.6(0.8)	3.2(0.8)	0.2	Not
S 15	Enthusiasm	3.6(1.1)	2.4(1.0)	0.02	Yes

Findings and interpretations of results

On the following items:

S4: Instructors' treatment of questions in class,

S9 Range of difficulty of examination questions,

S15 Instructor's overall ability to arouse interest and enthusiasm for the course; the students' perception of teacher effectiveness, analysis of resultend to show that there is a significant difference between Instructors trained within Canada and Zambia and those trained in Zambia only. The results show a positive graphing in favour of the Zambian Trained instructors only.

The results show that there is no significant difference between the Instructors trained both in Zambia and Canada and those trained in Zambia only at 0.05 of significance level.

0.4.6. Sub-Programme II

Is there a relationship between students; and principals' perceptions of teacher effectiveness.

Pearson Correlation Coefficient (one way S1 to S15, Principal evaluation to students evaluation) reveal the following taking the country as constant.

mean = 0.3032 level of significance: P = 0.1 / 0.05

This shows that there is no relationship between the principals' perception and the students' perception of Instructors' effectiveness, at 0.05 significance level.

0.4.7. Sub-Programme III

To what extent does training overseas affect the participants in terms of:

1. Skills and ability
2. Salary
3. Values and accomplishments

TABLE III

0.4.8 Teacher Self Evaluation

In Terms of Skills and Ability

Variable	Instrument Item	Trained in Zambia	Trained in Canada	Significance	
V 16	Writing	3.2(0.8)	3.5(0.5)	0.05	Yes
V 17	Speaking	3.2(0.8)	3.5(0.5)	0.3	No
V 18	Supervisory	2.6(0.7)	3.2(0.9)	0.07	No
V 19	Persuading	2.6(0.8)	3.1(0.6)	0.09	No
V 20	Organizing Time	3.0(0.6)	3.8(0.3)	0.0004	Yes
V 21	Planning	2.8(0.7)	3.7(0.4)	0.0002	Yes
V 22	Communicating	3.3(0.9)	3.6(0.4)	0.2	No

Findings and intrepretations of results

Items V20 and V21 respectively---organizing time effectively and planning and organizing job related activities reveal that those trained in Canada were better equipped to organize and plan students' experiences as compared with the Zambia Trained instructors only.

TABLE IV

In terms of Salary:

Variable	Instrument Item	Trained in Zambia	Trained in Canada	Significance	
V 23	Respon-sibility	2.6(0.9)	2.9(0.0)	0.4	No
V24	Leadership	2.5(0.8)	3 (1)	0.1	No
V25	Recognition	2.5(0.8)	2.7(0.9)	0.5	No
V26	Learning	2.7(0.9)	3.5(0.8)	0.03	Yes
V27	Approval	3.5(0.6)	3.5(0.8)	0.9	No
V28	Recognition	3.3(0.9)	3.3(0.9)	0.9	No

Findings and interpretations of results:

Item V26: Opportunity to learn new things, reveals that: those trained in Canada perceived themselves as having been given an opportunity to learn new things.

TABLE V

In Terms of Values and Accomplishments:

Variable	Instrument Item	Trained in Zambia	Trained in Canada	Significance	
V29	Writing	3.3(0.9)	3.8(0.3)	0.06	No
V30	Speaking	3.2(0.8)	3.5(0.6)	0.3	No
V31	Supervising	[illegible]0(0.7)	3.0(1)	1	No
V32	Persuasion	2.9(0.9)	3.0(0.7)	0.8	No
V33	Organizing Time	3.0(0.6)	3.9(0.2)	0.001	Yes
V34	Planning	3.0(0.8)	3.6(0.4)	0.01	Yes
V35	Communicate	3.4(0.8)	3.6(0.4)	0.4	No
V36	Job Respon-sibility	3.7(0.7)	2.9(0.8)	0.4	No
V37	Leadership	3.0(0.8)	2.9(0.9)	0.6	No
V38	Recognition	2.7(0.9)	2.7(0.8)	0.9	No
V39	Learning	3.0(0.9)	3.6(0.5)	0.07	No
V40	Approval	3.3(0.6)	3.6(0.8)	0.4	No
V41	Recognition	3.5(0.7)	3.3(0.9)	0.7	No

Findings and Interpretations of Results

The analysis of data (one way) in terms of values and accomplishments reveals the following about items V33,

organizing time effectively and V34 planning and organizing job-related activities, that there is a significant difference between instructors trained in Zambia only and those trained in both Zambia and Canada. The significance was registered at 0.05 level in favour of those who were trained in Canada.

0.4.9. Summary of Findings

The researcher after analyzing the data arrived at the following conclusion:

1. That generally speaking there was a significant difference between the 2 groups under investigation; namely those trained in both Zambia and Canada and those trained in Zambia only; and the study revealed the following:

   a. That principals perceived that Zambia-trained teachers lacked training in their area of specialization.

   b. That students perceived that there was a significant difference in the two groups investigated, and that on the following items, Canada-trained instructors scored lower than the instructors trained in Zambia only:

      1. Instructors' treatment of questions in class.
      2. Range of difficulty of examination questions.
      3. Grading

4. Instructors' overall ability to arouse student interest and enthusiasm for the course.

This trend was also seen in other items although not to a 0.05 level of significance.

CHAPTER V

DISCUSSION ON ZAMTEX PROGRAM

Generally speaking, each of the administrators interviewed by the Researcher about the CIDA-D.T.E.V.T. project, voiced specific areas of concern.

Among those interviewed were:

a. The Permanent Secretary, Ministry of Higher Education

b. The Director, D.T.E.V.T.

c. The Deputy Director, D.T.E.V.T.

d. The Assistant Director, Administration

e. The Assistant Director, Inspection and Curriculum Development

f. The Superintendent, Teacher Training

g. The Controller, Technology

h. The Superintendent, Building Section

i. The Inspector of Schools.

The following section will deal with the researcher's findings as expressed by the above officers.

0.5.1. Misconception about Z.I.T. Project

The majority of the Zambian people thought that the Zambia Institute of Technology was built and financed by Canadians. This may be due to the fact that by the late 70's the standard of education offered by the above institution was

at level next to, if not superior, to that of the School of Engineering, University of Zambia.

The truth of the matter was that the Zambian Institute of Technology was designed by "The Number Ten Architectural Group, Winnipeg, Canada" at a time when the Department of Technical Education was still a para-statal organization known as The Commission for Technical Education and Vocational Training. The architect and the consultant were Canadians but the building was constructed by Messrs. Minestone Zambia Ltd. of Zambia supervised by the Building Department, Ministry of Power and Works. The Zambian Government financed the construction. "During an audit review made in May 1982, it was revealed that the Institute's building complex had developed numerous cracks on walls and that the situation was worsened by a boiler explosion which occurred in June, 1978. This caused extensive damage to the floor wings of one of the Students' Hostel complex at site III and that some cracks extended to parts of site II of the campus...The cracks were caused by faulty design, and defective materials such as concrete mixture used and bad workmanship by the contractors (Messrs. Minestone Zambia Ltd) (auditors report, p.2)."

0.5.2 Staff Development

The issue will be dealt with in the following pages from two perspectives:

a. practical aspect of the programme

b. teacher effectiveness

0.5.3. Selection of Candidates

C.I.D.A. instructors, who staffed Z.I.T., stipulated that only the best students who graduated from Z.I.T. would be selected to go to (T.V.T.C.) Technical and Vocational Education Teachers College to learn how to teach. Such graduates went to Canada for an in-service training course that was generally of two years' duration. They were supposed to learn both the theoretical and practical aspects of teaching and learning in their areas of specialization.

0.5.4. Theoretical and Practical Aspect of the Programme

Judging by individual performance, graduates from Canada appeared to have little difficulty in handling the theoretical part of the programmes for the following reasons:

1. They were generally the best students all coming from the same institution
2. They had the same programme in Canada. The only difference was that programme offered i Canada was enriched by the equipment and material used: both software and hardware were in the favour of the Canada-trained instructors.

For the above reasons, the courses offered in Canada were repetitive. Therefore the recipients tended to be in an advantageous situation.

0.5.5. Practical Aspect of the Programme

Attachment to an industry did not take root. The reasons

were:

1. political pressure: Unions were putting pressure on industries so that the students could not be accepted among Canadian workers (Canadian Immigration Policy).
2. lack or scarcity of jobs
3. timing

Because of the above the practical aspect of the programme became irrelevant to the clients in their field of specialization.

This called the staff development programme into question. For example:

- how were the initial objectives of the programme achieved?
- how best could these programmes have benefitted the clients, the institutions, and the nation?

These questions will be treated in the last chapter where the suggestions and recommendations for future staff development programmes have been made.

0.5.6. Teacher Effectiveness

As regards T.V.T.C. trained teachers the requirements were as follows:

a. a complete diploma course at Z.I.T.
b. a complete diploma course at T.V.T.C.
c. work for 2 years

d. training in middle management in Canada

e. return to Zambia to teach

During the two years of work, Interim Teacher Certificates were issued by T.V.T.C. once the Department of Technical Education was satisfied, beyond any doubt, that the students were suitable for classroom teaching.

Later the Permanent Teacher Diploma was issued once two Inspectors from the same Department had given their endorsing signatures.

It was at this point that selection of these certificated candidates for training in Canada was supposed to take place.

Since the steps (a) to (e) outlined above were not always observed, some students did not even go through steps (a),(b), and (c),before they were sent to Canada (Step (d)). This, therefore made it difficult for the Researcher to assess teacher effectiveness.

In Conclusion, Teachers are expected to be more knowledgeable, experienced and of higher calibre than their students but this does not seem to be the case, with both Canada-trained Instructors and their counterparts (the instructors trained in Zambia). For all their training the results point to craftsmen teaching craftsmen, technologists teaching technologists.

0.5.7. Organization of Staff Development

What might be the best way to organize the Staff Development Programme? I would be necessary:

1. to draw up the Staff Development Programme not in view of Zambianization only, but also in line with the number of staff required of the non-Zambian Calibre.
2. to find out the academic and professional level of the non-Zambians.
3. to train Zambians to the level of the non-Zambians so that the same standard can be maintained once the non-Zambian has been replaced.
4. to draw up a well-defined programme in line with (3)
5. to follow religiously the well-defined comprehensive Staff Development Programme
6. to allocate a specific number for the overseas training
7. to train Zambian not only in areas that already exist, but also in new areas of technological advancement
8. to upgrade the standards of in-service teachers at all levels.

0.5.8 Foreign Aid

Donor countries should be less rigid in determining field of training required by Receiving Countries. The latter should not be dictated to on areas of priority.

There are cases where some courses are offered continuously regardless of the Receiving Countries pressing areas of priority. In Zambia, the present areas requiring consideration are: civil engineering, geology, mining, computer science. Repeating the same courses offered such as those in electricity could result in a surplus of these trained personnel and a scarcity of such jobs.

I would therefore recommend that the Donor Countries:

1. ask which fields of training are in high demand at the particular moment
2. ask how best staff development can be accomplished (example: through exchange programmes, industrial attachment, in-service)
3. have a list of priorities drawn up by the Receiver Countries.

0.5.9. Teachers' Observations

On the extra sheet of paper provided--instrument on Teacher's Self Assessment Inventory: Appendix III---, teachers were asked to give a brief account of their training in Canada. For those who have not been to Canada, to give some good reasons as to whey they would or would not like to be trained in Canada.

0.5.9.1. Observations:

Name: Stabnis Nataala

Course: Electrical Technology (Z.I.T.)

Use the space provided for your observations.

I have had my training in the electrical field locally. Whether or not I would like to be trained in Canada largely depends upon the nature of the training offered. On the basis of what I have learnt from those who have received some training in Canada, I feel that relevance of the training would also depend upon one's background. For instance, I believe sending Zambians who have obtained Diplomas in their respective fields locally for yet another similar diploma abroad is economically unsound and a waste of time. Looking the limited training facilities available in our local institutions, I don't think there is a single Zambian who wouldn't value training outside the country where better training facilities are provided. The problem locally is that even some basic equipment and instruments which students would come across in industries are not available in institutions of learning (local). By training Zambians abroad, it would give them an opportunity of understanding how much and what would be done for local institutions if they have to achieve an acceptable level of performance. Of course, this would be a partial solution to the problem since there are other factors involved.

Name: B.A. Chibuye

Course: Communication Skills Z.I.T.

Use the space provided for your observations.

I would like to learn more on how best to teach my subject and if Canada, or any other country for that matter, can offer me such an opportunity it would be most acceptable indeed. This the best reason I can think of for wishing to study in Canada.

Name: Joshua B. Phiri

Course: Physics/Math Z.I.T.

Use the space provided for your observations.

Given the opportunity, I would like to train in Canada Because I would be exposed to a lot of modern equipment in the field I would like to pursue. I would be able to do a lot of instrumentation, interfacing of microprocessors and a lot of digital electronics with their applications which at present I cannot do in my home country, due to lack of adequate facilities.

Name: G. C. Ngoma

Course: Civil Engineering Z.I.T.

Use the space provided for your observations.

I would only accept to train in Canada to do a degree course in the field of my specialty (sic). The only reason

for this is that the training I will get will be in English so I need not learn some strange language before commencing with my studies.

Name: Siachalisa Muchimba

Course: English Z.I.T.

Use the space provided for your observations.

Qualifications:

1. B.A. (with Education) Zambia (UNZA)
2. Diploma in Education-Zambia (Nku T. College)

On page 14, you ask the question why I would or would not like to train in Canada. If a scholarship had come my way, I would definitely have loved to study in Canada. The main reason is that while there, I would be able to go to church, as I am sure the New Apostolic Church is also there much as it is in Zambia.

Name: Chandra Kasula

Course: Political Education Z.I.T.

Use the space provided for your observations.

I would very much like to be trained in Canada. During my days at the University of Zambia I was exposed to comparative politics and economic studies but I feel that this was not comprehensive. Besides that I have further studied Marxist-Lennist Philosophy, Political Economy and Scientific Communism in an advance socialist state. I have travelled

extensively to socialist countries and seen the system (i.e socialist) practically at work. I am sure that study in a western country would very much help me with the tools with which I would be able to make comparatively objective analyses of political systems and trends. My students would benefit more from my experiences besides myself.

Name: Serenje Mark

Course: Electrical Z.I.T.

A degree course in Electrical Engineering would have been better as compared to Technology Course planned. (At Cambrian College of Applied Arts and Technology). Impressed by Industrial experience (although without wages) and ability of a student to work individually most of the time. Good aids in Electrical Labs. Note: will not go to Canada for teacher training but to specialize in Electrical field. So most of the questions referring to teacher training are not applicable.

Name: Jones M. Bangili

Course: Electrical Technology Z.I.T.

Use the space provided for your observations

Theoretical Training

I worked at INCO Metals for three months during which I was alternately attached to the following departments: Power generation, Power control, Metering and Telephone. My work

with this company was about 60% observation and 49% physical participation. This was because I, like my colleagues, was a non-unionized employee.

Practical Teaching Attachment

Mr. Dholaicia was my host lecturer form September 1980 to May 1981. During this period I was responsible for supervising students in the electrical machines laboratory. I was also assigned to teach electrical machines theory as well as general electrical theory from time to time. However, I would have like to be left alone to teach both theoretical and practical courses for a much longer period than was the case.

Name: Simukanga

Course: Marketing Research Z.I.T.

Use the space provided for your observations.

Since I haven't been in the teaching profession for long it is difficult to view your form scales objectively and much of the rating has been done by basing it on values and accomplishments in previous works. I wouldn't like to be trained in Canada because so many people have already been trained there. To have a better comparison with the Canadian trained lecturers I'd rather I train elsewhere, perhaps in any country in Europe.

Name: Dickson Mwaba

Course: Telecommunications Z.I.T.

Use the space provided for your observations.

I have been trained in Canada not as a teacher but as a "special student" in my field. As a 'special student', the training involved lecturing, industrial orientation and studying special subjects such as computer, digital communication, network planning, etc. The training was very beneficial and I would like to further do it at a higher level in Canada or any other country.

Name: Caitumbo E. Lwendo

Course: (Chemistry) Chemical Technology Z.I.T.

Use the space provided for your observations.

I successfully followed a chemical technology course at Cambrian College, Ontario. The programme has been very helpful in relation to my job. Firstly, it has upgraded my working knowledge. Secondly, the practicals provided in this course were quite detailed and made me responsible for the results obtained (one of the most important criterial in education, one has to feel confident of the results he obtains and be able to defend them if required to do so). Given a choice, I would have preferred to do the same level than diploma. (sic). If the participants could be given this chance it would be of great service to the nation. A degree enables on to work with more confidence and with a degree more

easily than one with a diploma. (This doesn't mean that we, I, am not accepted-no, but with a lot of hard work to prove that one is better). The three phase programme should be scrapped. Participants should only be concerned with normal college work plus the industrial attachment and not worry about the teaching part of the programme since serves no purpose.

Name: Ntengwe Felix William

Course: Engineering Thermodynamics and Chemistry

The above written is the programme that I went through at Cambrian College in Sudbury, Canada. The positive aspects of the programme are:

1. The courses are covered in quite a good depth.
2. The equipment for the programme are sufficient
3. The availability of materials, e.g. Chemicals, all sorts of glassware, etc. is not a problem.
4. Safety is highly observed during the execution of the programme
5. Canada, CIDA, CIDA co-ordinator, the Dean and the Chairman of the programme and the lecturers did a good job.

The negative aspects of the programme are very minimal. When I arrived at Cambrian, in August 1980, the College exempted me from the first year of academic studies in the program

because of previous background. I then took academic studies in the second and third years only. The passing of all the courses I took in both the two years resulted in my graduation in May 1982. About 17 months of the 21 months that I stayed in Sudbury, were used for the Industrial attachment at International Metal Company (INCO) in the same town. The teaching part of the special programme was cancelled and academic studies were taken instead.

Name: Goodwin Malenga

Course: Architectural Technology

Use the space provided for your observations.

My training in Canada was worthwhile to a large extent. I attended a diploma course in Architectural Technology at the Northern Alberta Institute of Technology in Edmonton from September 1978 to March 1980. My first few weeks in the country were not easy both at School and outside. We had to look for our own accommodation and my thanks to the friendly attitude of the people of Edmonton. They were very helpful. At school much of the problem was to get used to the Building Regulations and the method of construction as these are very different to our traditional mode of construction here at home. Outside the traditional construction of houses, everything else was alright. I learnt a lot in all different fields. During the summer I had the opportunity to work with

the Engineering and Home Design Department of the City of Edmonton where we prepared booklets on Research into solar homes as well as build presentation and structural models. I also had a chance to work with Lukay Research and Development Company Limited, where we prepared working drawing and supervised on-site construction. I learnt a lot while working with these two establishments. I found it relatively easy to adopt to the Canadian system of education because it is a lot similar to ouf system here in Zambia. The staff and fellow students were very friendly and helpful which made my work and study a lot easier. A lot of teaching and training materials were readily available and the staff were very friendly and helpful which made my work and study a lot easier and the staff were always there to help when necessary. As far as my profession is concerned it was two years well spent.

Name: Gilbert S. Mabula

Course: Architectural

Use the space provided for your observations.

Sept. 80 - Jan. 81

Attended a Civil Engineering Technology Course at Cambrian College of Applied Arts and Technology - Sudbury, Ontario, Canada.

Feb. 81 - August 81

Industrial attachment with an architectural firm (towned Stefura Baleshta and Nicholls) Sudbury, Ontario, Canada

Sept. 81 - May 82

Attended an Architectural Technology Course at St. Clair College of Applied Arts and Technology - Windsor, Ontario, Canada. All was in order except that I didn't have a chance to do teaching practice.

Name: Kooma Thaddeus

Course: Chemical Engineering Technology

Use the space provided for your observations.

All the subjects taken at Cambrian College, in Canada, were relevant to the type of job I am now doing here at Z.I.T. I had access to laboratory instruments like Atomic Absorption, Nuclear magnet resource (MNR), Infrared Spectrophotometer (I.R.) etc. This was very good exposure to these instruments indeed. However, I would like to be more useful (technically) to Z.I.T. than I am right now. I am therefore, asking you to kindly consider me for a degree course in Chemical Engineering. I passed my Chemical Engineering Diploma Course with honours and right now I strongly feel I would do equally well in chemical engineering degree course, if given a chance.

Name Shitimali B. S.

Course: Electronics

Use the space provided for your observations.

Training in Canada

The training in Canada was divided into three parts:

1. academic
2. industrial break
3. teacher training

Academic

The academic training was quite good and very interesting. all the course materials were prepared in advance. There was a lot to learn. All instructors were assigned to two subjects to teach in their own fields. They were always aware of the modern technologies. They organized at least enough industrial tours which were part of the training.

Industrial Break

This was organized for me. I worked for the Ministry of Environment, Toronto. Although there wasn't much to do, I learnt how to measure noise and vibrations. Work habits in Canada are strongly governed by unions. This, however, made it difficult for our supervisors to give us challenging tasks.

Teacher Training

Usually, Canadians shun the outsiders especially in their training and working sections. Teacher training was not effective. However, I worked with Mr. Carr and Mr. Hogom in the laboratories, supervising the students, assisting them in laboratory work, and marking their laboratory assignments. I did not attend any academic meeting.

Name: M.M. Sililo

Course: Communication Skills Z.I.T

Use the space provided for your observations.

I did a TELF Diploma in Cardiff. I would like to take a communication skills course or something to do with teaching English for special purposed course in Canada in particular for two main reasons. The first being that Canada has a situation more or less similar to Zambia in that it is a bilingual community. Therefore, the overall experience of living and studying in Canada would be a great help to my understanding of the advantages and disadvantages faced by a person living in such a community. Secondly, most of the Zambian lecturers in the 'content' courses in the department [illegible] have been in Canada or have been taught by Canadians. This somehow affects their teaching and the students. My British background seems to clash with the Canadian background of this institution. I feel an understanding of the Canadian learning situation and Canadian literature would go a long way in creating an excellent learning situation in my communication skills classes. Last and 'least' in importance is the fact that I love academic life. I love learning and teaching and any new experiences in this field are most welcome.

Name: Laube Frank

Course: Political Education (E.H.C.)

Use the space provided for your observations.

I have had my teacher training in Zambia. My major teaching subjects are Commerce, Principals of Accounts, Typewriting and Book-keeping, at secondary school level. I took a further course in Political Education which I would call supplementary because after this course, I was then able to redirect my ability into this new subject also. As a teacher specializing in commercial subjects, I would think some training in Canada would be of an advantage because the facilities offered for learning are much better than ours, and there would be an added advantage of exposure to a highly developed economy, which actually is what is most talked about in commerce. Canada's system of education should not be much different from Zambia's since both countries still follow the British system in most respects.

Name: Ruth Lishimpi

Course: Shorthand Typist

Use the space provided for your observations.

I have not yet been trained outside the country. However, I would like to be trained in Canada if chance allows. The main reason being, to improve my teaching ability and to take up a course which would enable me to take up a higher position of responsibility. That is in administrative work. It would

also give me a chance to have the different teaching methods provided by another college. Furthermore, I think once I have further training the students whom I would teach would benefit a lot. They can do better in their final exams.

Name: Banda H.H.L.

Course: Communications Skills (Lecture)

Use the space provided for your observations.

I would like to be trained in Canada for the following reasons:

1. Canada is an English/French speaking country. I can speak and write English very well, and I have working knowledge of French which I did at secondary school.
2. From the reports I have had from friends who've been to Canada, it seems the Canadian Government is serious about assisting the African and other developing nations in achieving self-sufficiency in various categories of (trained) manpower.
3. Have been made to believe that the Canadians are a warm-hearted and open-minded people. I would very much welcome the opportunity to sample this Canadian 'recipe'!

Name: Mr. Ngalande

Course: Business Studies (E.H.C.I.)

Use the space provided for your observations.

I would like to be trained in Canada in order to widen my experience. That is, educational and socially.

Name: K.K. Kamawu

Course: Pharmacy (E.H.C.)

Use the space provided for your observations.

Applicable if related to my profession-physiotherapy-otherwise it is of no use.

Name: Mulenga L.N.

Course: Political Education (E.H.C.)

Use the space provided for your observations.

Positively, I wouldn't hesitate to be trained in Canada once such a chance is granted. Their programmes are very flexible and accommodating - thus being aware of the various demands made by other countries. Though their system is not exactly like ours, they are academic and the student can easily adjust to fit in the local demands unlike other places where institutions might be dictated on what to import-the Canadian system is free and open-ended. Though my comments might not be the required materials, Zambia like the Canadian society is democratic and open to criticism these trainees are supposed to be aware and be prepared to accommodate such

variant personalities. This is one key to progress and maturity. Therefore a pulling factor from the Canadian institutions.

Name: G.C. Chishala

Course: English (Communication Skills (S.H.C.)

Use the space provided for your observations.

I have very little to contribute on this point. I have always been trying to go for refresher courses but there are no such chances because the people who are taken on such coursed are those who have been there previously.

- I feel I don't need any training at all because the courses offered outside Zambia are so junior or rather below somebody's previous certification standard attained.
- Secondly, offers are inadequate.
- Thirdly, offers go to wrong ages; those who could just do other non-academic stuff as a result degrading someones experiences.
- Learning is willingness and not a travelling opportunity, etc.
- Selection system requires a new approach where by:
  a. Courses offered should go with matter content to be covered.
  b. Certification done looks to be a weak one in that those who do the courses seem to be carried out and

have very little to offer. Some do well but others show plainly that little was achieved because somebody was taken on a much lower course than expected.

Name: Syulikwa S.C.

Course: (N.O.R.T.E.C.)

Use the space provided for your observations.

1. I have never been to Canada.
2. I wished to train in Canada for a degree course but I have had no chance to get a scholarship to Canada.

Name: T.K. Mwanza

Course: Related subjects (Maths [illegible] bwe T.T.I.)

Use the space provided for your [illegible]vations.

While I agree in principle that there are numerous chances of advancement in the D.T.E.V.T. for dedicated men and women, I have a feeling that there is unjustified and unfair distribution of authority in the department resulting in some of us feeling frustrated and disillusioned. Some people have had more opportunities of advancing in terms of salary and sponsorship for training either abroad or locally which is denied some of us. The non-availability of teaching aids in our training institutions tends to wane the interest of a teacher towards work. And hence the falling standards of performance by both teachers and students. Unfortunately or

fortunately I have never taken my training in Canada and I have never stepped foot in Canada. I took my training in Zambia. During the time I was training, there were plenty of training materials unlike the present time. I would love to go and train in Canada if afforded a chance as long as the course content has a direct relationship to my field of operation.

Name: W.O. Phiri

Course: Mathematics

Use the space provided for your observations.

Never been to Canada and feel local further education would help me obtain necessary basic requirements as I would learn with the problem. Canadian Training seems to be invalid as those who have returned discuss the same ideas as they had before going for training abroad. No new techniques come forth with the so called trained abroad people.

Name: Banda

Course:

Use the space provided for your observations.

Not stretched enough according to my capabilities-teaching here-i.e. not enough material to work on.

Name: Chatembo

Course: Trowel (Lusaka T.T.I.)

Use the space provided for your observations.

Why I would like to be trained in Canada

In comparative terms the Canadian system of training is more efficient than other countries and have contributed to Zambia in the field of industrial and commerce with manpower planning and agriculture training.

Name: N.P. Mutale

Course: Machinist (Lusaka T.T.I.)

Use the space provided for your observations.

I was trained in Canada With the help of CIDA from 1975 to 1976. The type of training was worthwhile but to my way of looking at the course content, the whole course was a bit low and very easy. I was hoping and expecting to have and indeed do an advanced engineering course up to a degree level. All the same I am still looking forward for another chance of doing an advanced course in a country like Canada hopefully. I believe there are lots of prospects if you are seeking for help.

Name: J.K. Mukanda

Course: Hotel and Catering (Lusaka College Hotel)

Use the space provided for your observations.

I would like to train in Canada because their type of tuition is very commendable and further more I would benefit more as an individual.

Name: G.W. Nhlovu

Course: Plumbing and Sheet Metal (Lukashya)

Use the space provided for your observations.

1. I have never been to Canada for any course in my field. Reasons being that I graduated in December 1976 and that it was just too early for me to go out of the country without first getting appointed. The second reason is that I wanted to get experienced in the teaching profession.
2. I would like to train in Canada provided the course I would go for is not a repetition of what I had done here. Secondly, I wouldn't mind going to Canada so long as the course is at an advanced level within my field.

CHAPTER VI

DISCUSSION AND RECOMMENDATIONS

0.6.1. Discussions

Evaluation of Teacher Effectiveness at Z.I.T. is considered to be a complex issue because of many factors.

1. The two groups identified for this study (those trained in both Zambia and Canada, and those trained in Zambia only) do come from different academic and prefessional backgrounds. Selection of these candidates to go to T.V.T.V. is at times not up to the expectations of the colleges where they later will be sent to lean or to teach.
2. Some come to Canada without any teaching experience. Others are qualified and certified teachers according to D.T.E.V.T. standards.
3. Programmes overseas range from one to two years with a shift in emphasis, based on:
   a. government expectations,
   b. the individual's expectations.
4. Programmes offered, duration of programme and certification are not the same for at least two of the five groups trained at N.A.I.T. A good guess is that some applied to other similar institutions of higher learning for the reasons listed above.
5. At N.A.I.T., these changes are characterized as follows:

a. 73/74 - 1 year programme, 50% in upgrading; 50% in

Teacher Training upgrading.

- a pre-service diploma was issued on top of that a certificate in upgrading was issued in addition to a pre-service diploma.

b. 74/75 - Basically the same, but the programme this time included and industrial tour of 10 days duration.

- Suitability of programmes was identified by the N.A.I.T. instructors and In-Service Instructors from Zambia.

6. Based on the new approach from results obtained at N.A.I.T. where a Study on Individualized Concentrated programme was conducted on a student from Peru, and on a report submitted by Mr. Merkly who was allowed by CIDA to visit Zambia for 10 days (1976), a new programme came into being. It involved:

a. Formal upgrading

b. Internship

c. Industrial Secondment

7. At this time (77/78) it was found that;

a. No waste of effort and time were encountered,

b. 100% of time spent in industrial upgrading

c. A certificate of Achievement was to be issued

8. One of the major findings of Merkley's Report was that:

- Perception of goals of participants was not congruent with individual aspiration of students. In other words the Government's perception of goals

is not in line with students' aspiration, and this can be well explained by looking at points 1, 2, 3, 5, 6.

9. The social, cultural, intellectual similarities encountered by the Zambian instructors played a positive role in their acceptance by Canadian students and workers. But at times it has created difficulties in solving the former problems, e.g.

- Zambians displayed very high skills in handling hand tools: this won them respect.
- They are known to be extremely polite.
- They are also known to be hard workers, enthusiastic, motivated and will to work.

10. The Zambian Instructors at N.A.I.T. are exposed to high technology at N.A.I.T. and in industries. In most cases the experiences acquired do not help them to solve local technological programmes.

11. The benefits derived from this exposure to the Zambian Institutions can not be transferred directly to the operations of shops and laboratories because shops and equipments are different, for there exists a difference in production between developed and underdeveloped countries.

The reason for this is: his newly acquired skills and knowledge will not be fully utilized in the under equipped shops or laboratories. In the opinion of the

officials organizing the project both Canadian and Zambian, the objectives, expectations, and needs of the project were fulfilled.

12. In the opinion of the Researcher, supported by comments expressed by participants, some repetition of skills and knowledge occurred. Therefore, it may be possible in the future to shorten this programme to (six) 6 months or a year, based on more detailed pretesting and need analysis.

13. Improvement in the results could be affected by candidates spending some time at the University of Alberta in Industrial and Vocational Education Department, to learn more about Curriculum Development and Post Secondary Education.

0.6.2 Recommendations

Based on this study, it is recommended that:

1. A team of Zambian educational practitioners be established. And these to be responsible to the Director of Technical Education. Such a group of experts should be knowledgeable about foreign and local technical and vocational education.

2. The following duties be assigned to this group:

   a. identification of the educational needs of Zambia;

   b. technical education planning in relation to Zambian manpower development. This would involve:

1. Setting up of objectives (Departmental and Institutional),
2. Designing of programmes,
3. Validation of the above programmes.

c. Responsibility for identification of training institutions overseas or in Africa, to recognize the special needs of Zambian instructional staff (Needs of Zambian institutions, requirements and developments, congruent with Zambian objectives)

d. Design and implementation of valid follow-up studies, on the effectiveness of the training.

e. Identification of foreign or local experts in instructional methodology and curriculum planning and development. These could be invited to Z.I.T. or T.V.T.C. to conduct classes in that area of expertise.

3. That inspectors of schools in the D.T.E.V.T. submit to the group results of any evaluation performance of staff in order that plans for instructor development and in-service training programmes could be prepared on a rational basis.

4. Accreditation policy for post secondary institutions be developed. Such policy should reflect reputable standards.

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APPENDIX I

Principal Perception
of the
Quality of Instruction

This survey gives you an opportunity to express your view of the effectiveness of your instructors. Based on the given key; indicate on the five point scale your evaluation of the "instructors effectiveness". Please answer all questions. Thank you for your co-operation in this important research.

1 2 3 4 5

e.g. Circle the correct response.

		1	2	3	4	5
1.	How would you rate your instructor in general (all-round) teaching effectiveness?	1	2	3	(4)	5

INSTITUTION NAME:_____

PRINCIPAL:_____

INSTRUCTORS NAME:_____

COURSE TAUGHT:_____

NUMBER IN CLASS:_____

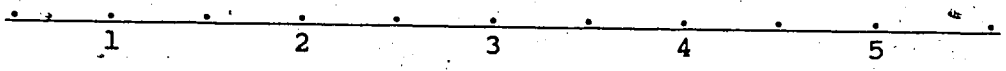
		1	2	3	4	5
1.	How would you rate your instructor in general (all-round) teacher effectiveness?	1	2	3	4	5
2.	How would you rate the overall value of this course?	1	2	3	4	5
3.	How clearly does your instructor present his subject?	1	2	3	4	5
4.	How well does your instructor seem to know the subject?	1	2	3	4	5
5.	How interesting does he make the material?	1	2	3	4	5
6.	To what extent does the instructor practice what he teaches?	1	2	3	4	5
7.	Is class time well spent?	1	2	3	4	5
8.	How do you fee about the amount of outside work assigned?	1	2	3	4	5
9.	How appropriate is the pace of presentation of the material?	1	2	3	4	5
10.	How current is the course content?	1	2	3	4	5

11.	How valuable are the text and other assigned readings?	1	2	3	4	5
12.	How do you feel about his attitude toward his work in the institution?	1	2	3	4	5
13.	To what extent do you feel his training has helped him to improve his performance?	1	2	3	4	5
14.	Do you feel he needs further training in his area of specialization?	1	2	3	4	5
15.	Do you feel that he needs further training in his teaching methods?	1	2	3	4	5

APPENDIX II

Student Perception
of the
Quality of Instruction

This survey gives you an opportunity to express your view of the effectiveness of this course, and the manner in which it was presented. Based on the key given, indicate on the five point scale your evaluation of the course based on your perception. Please answer all questions. Thank you for your co-operation in this important research.



e.g. Circle the correct response.

1. Instructor's interest in and enthusiasm for teaching the course.	1	2	3	4	5
	1	(2)	3	4	5

INSTITUTION:_____

COURSE TITLE:_____

INSTRUCTOR:_____

DATE:_____

Key:

		1	2	3	4	5
1.	Instructor's interest and enthusiasm for teaching the course.	1	2	3	4	5
2.	Instructor's display of his knowledge of the subject.	1	2	3	4	5
3.	Instructor's preparation for class periods.	1	2	3	4	5
4.	Instructor's treatment of questions in class.	1	2	3	4	5
5.	Instructor's willingness to help students outside of class.	1	2	3	4	5
6.	Relevance of homework to subject material.	1	2	3	4	5
7.	Frequency and size of homework assignments.	1	2	3	4	5
8.	Ability of examinations to measure knowledge gained.	1	2	3	4	5
9.	Range of difficulty of examination questions.	1	2	3	4	5
10.	Instructor's grading system.	1	2	3	4	5
11.	Instructor's use of course outline.	1	2	3	4	5
12.	Instructor's use of course objectives.	1	2	3	4	5
13.	Instructor's overall communication ability.	1	2	3	4	5

14. Instructor's balance of seriousness and humor.	1	2	3	4	5
15. Instructor's overall ability to arouse students's interest and enthusiasm for the course.	1	2	3	4	5

APPENDIX III

TEACHER'S SELF ASSESSMENT INVENTORY

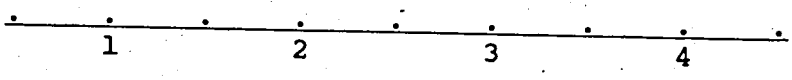
OF .

SKILLS AND ABILITIES

For each of the following items rate by circling one-two-three,or four, the extent to which you possess the ability or skills.

Please answer all the questions.

Thank you for your co-operation in this important research.



		1	2	3	4
e.g. 1.	Writing effectively	(1)	2	3	4
2.	Speaking effectively	1	2	(3)	4

NAME:_____

INSTITUTION:_____

COURSE YOU TEACH:_____

AGE:_____

SEX:_____

LAST TEACHER TRAINING IN ZAMBIA:
YEAR 19__/__ TOWN:_____CERTIFICATION:_____

LAST TEACHER TRAINING OVERSEAS:
YEAR 19__/__ TOWN:_____CERTIFICATION:_____

SKILLS AND ABILITY

		1	2	3	4
1.	Writing effectively	1	2	3	4
2.	Speaking effectively	1	2	3	4
3.	Supervising and leading	1	2	3	4
4.	Persuading others to accept your ideas	1	2	3	4
5.	Organizing time effectively	1	2	3	4
6.	Planning and organizing job-related activities	1	2	3	4
7.	Communicate with others	1	2	3	4

SALARY

8.	Increased job responsibility and/or autonomy	1	2	3	4
9.	Leadership activities in your field	1	2	3	4

10.	Recognition by supervisors/ administrators	1	2	3	4
11.	Opportunity to learn new things	1	2	3	4
12.	Approval from your family/ close friends	1	2	3	4
13.	Recognition by peers	1	2	3	4

NAME:_____

COURSE:_____

INSTITUTION:_____

VALUES AND ACCOMPLISHMENTS

To what extent has your teacher training in Zambia/Canada (for those who had a scholarship to be trained in Canada) contributed to the following items.

Indicate by circling one-two-three or four to which extent you have achieved (some of the criteria). Please answer all the questions.

.	1	.	1	.	1	.	1	.
	1		2		3		4	

1. On the extra sheet of paper provided, give a brief account of your training in Canada. Give both the positive and the negative aspects of the training provided. (page 15 a).
2. If you have not been to Canada, give some good reasons as to why you would or would not like to be trained in Canada.

Thank you very much for your co-operation.

NAME:_____

INSTITUTION:_____

COURSE YOU TEACH:_____

AGE:_____

SEX:_____

LAST TEACHER TRAINING IN ZAMBIA:
YEAR 19__/__TOWN:_____CERTIFICATION:_____

LAST TEACHER TRAINING OVERSEAS:
YEAR 19__/__TOWN:_____CERTIFICATION:_____

VALUES AND ACCOMPLISHMENTS

		1	2	3	4
1.	Writing effectively	1	2	3	4
2.	Speaking effectively	1	2	3	4
3.	Supervising and leading	1	2	3	4
4.	Persuading others to accept your ideas	1	2	3	4
5.	Organizing time effectively	1	2	3	4
6.	Planning and organizing job-related activities	1	2	3	4
7.	Communicate with others	1	2	3	4

VALUES AND ACCOMPLISHMENTS

8.	Increased job responsibility and/or autonomy	1	2	3	4
9.	Leadership activities in your field	1	2	3	4

10.	Recognition by supervisors/ administrators	1	2	3	4
11.	Opportunity to learn new things	1	2	3	4
12.	Approval to learn new things	1	2	3	4
13.	Recognition by peers	1	2	3	4

NAME:_____

COURSE:_____

INSTITUTION:_____

For each of the following items please indicate by rating in order from 1 to 6 how important each criterion is to you in judging success in your profession.

e.g. - Increased job responsibility and autonomy 4
- Leadership activities in your field 1
- Recognition by supervisors/administrators 3

ITEMS

rate 1 to 6

Number 8 -Increased job responsibility and autonomy. ___

9 -Leadership activities in your field. ___

10 -Recognition by supervisors/ administrators. ___

11 -Opportunity to learn new things. ___

12 -Approval from family/close friends. ___

13 -Recognition by peers. ___

NAME:_____

COURSE:_____

Use the space provided for your observations.

APPENDIX IV

COURSE EVALUATION INSTRUMENT

FACULTY OF EDUCATION
DEPARTMENT OF INDUSTRIAL AND VOCATIONAL EDUCATION
TELEPHONE (403) 432-3678

THE UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA, CANADA
T6G 0Y1

April 30, 1984

Mr. Norbert Kisenga
Technical and Vocational Teacher's
College
P.O. Box 90199
Luanshya, Zambia

Dear Mr. Kisenga:

In response to your request you are perfectly welcomed to use the Student Course Evaluation form, used by me for course evaluations.

K. Puffer P. Eng.

Dr. K. Puffer, P.Eng.,
Professor

KP/gk

NCS Trans-Optic 88 [illegible]

STUDENT COURSE EVALUATION FORM

Instructor U OF A

Course _____ Date _____

0 1 2 3 4 5 6 7
0 1 2 3 4 5 6 7 8
0 1 2 3 4 5 6 7 8 9
0 1 2 3 4 5 6 7 8 9

109

This survey gives you an opportunity to express your views of this course and how it was taught. Use a PENCIL to blacken one response circle for each item; leave blank entries which are not applicable.

SD = Strongly Disagree
D = Disagree
N = Neither Agree nor Disagree
A = Agree
SA = Strongly Agree

I. COURSE EVALUATION ITEMS

1. The course was well organized.
2. The instructor made it clear what was expected to be learned.
3. The instructor was always well prepared for class.
4. The instructor offered a rich and substantial course content.
5. There was a positive interaction between students and instructor.
6. The instructor seemed concerned with whether students learned the material
7. The instructor was willing to meet with and help students outside class
8. Class participation was actively encouraged.
9. The instructor promoted an atmosphere conducive to work and learning.
10. The instructor spoke audibly and clearly.
11. The instructor made good use of examples and illustrations.
12. Presentation of material was interesting and usually helpful
13. The instructor clearly presented abstract ideas and theories
14. The amount of material covered in this course was reasonable
15. The workload for this course was appropriate.
16. The level of difficulty of the course material was appropriate.
17. The reading assignments were interesting and stimulating
18. I put more effort into this course than into most other courses.
19. The grading system was clearly explained
20. The procedures for determining grades in this course were satisfactory.
21. The instructor provided helpful feedback throughout the course
22. I learned more in this course than in most courses
23. The course challenged me intellectually.
24. I liked the instructor as a person more than most other instructors
25. This course stimulated me to want to take another course in the same area
26. The instructor achieved the objectives of the course
27. The instructor's effectiveness as a teacher was among the best I have experienced
28. I would recommend this course to other students.
29. Overall, this course was among the best I have taken

PLEASE USE SEPARATE SHEET TO ANSWER THE FOLLOWING ITEMS

30. What did you like most about this course?
31. What did you like least about this course?
32. How could this course be improved?

II. INSTRUCTOR SPECIFIED ITEMS
(Use only as Directed)

33
34
35
36

III. GENERAL STUDENT INFORMATION

37. This course was
- ○ A Requirement
- ○ An Elective
- ○ Other

38. My academic year was
- ○ First
- ○ Second
- ○ Third
- ○ Fourth
- ~~○ Post-degree~~
- ~~○ Graduate~~

39. My sex and age are
- ○ Female under 25
- ○ Female 25 or over
- ○ Male under 25
- ○ Male 25 or over

DO NOT WRITE ON THE BACK OF THIS SHEET
THANKS FOR YOUR COOPERATION

COURSE APPRAISAL SHEET

Course _____ Section _____ Instructor _____

INSTRUCTIONS: Indicate your assignment of each of the course and instructor characteristics below by checking the appropriate line. In each case a rating of 5 is high or favourable, a rating of 1 is low or unfavorable.

	Low				High
	1	2	3	4	5
Course outline for the course. . .	_	_	_	_	_
Instructor's preparation/ presentation for class (session).	_	_	_	_	_
Communication skills of instructor	_	_	_	_	_
Instructor's ability to stimulate thought.	_	_	_	_	_
Instructor's ability to motivate students.	_	_	_	_	_
General atmosphere of class (session).	_	_	_	_	_
Attitude to student ideas, opinions, input.	_	_	_	_	_
Instructor tolerance of opposing theories, viewpoints.	_	_	_	_	_
Instructor helpfulness concerning student problems.	_	_	_	_	_
Availability of instructor for conference, consultation.	_	_	_	_	_
Instructor enthusiasm for course/ subject.	_	_	_	_	_
Objectiveness of course's evaluation measures.	_	_	_	_	_

Relevance of tests/assignments for course content.	_	_	_	_	_
Assignment completely explained. .	_	_	_	_	_
Promptness of test/assignment return.	_	_	_	_	_
Value of textbook for course objectives, activities.	_	_	_	_	_
Value of handouts such as course outline,study materials.	_	_	_	_	_
Comparative difficulty of course content.	_	_	_	_	_
Relevance of course content in teacher education programme. . . .	_	_	_	_	_
Comparative expense of course for student.	_	_	_	_	_
Seminar discussions.	_	_	_	_	_
Evaluation system for marks. . .	_	_	_	_	_
Course goals and objectives. . . .	_	_	_	_	_
Overall satisfaction with course.	_	_	_	_	_

Briefly state the strongest/best-liked aspects of the course:

A.

B.

C.

Briefly state the weakest/least-liked aspects:

A.

B.

C.

Additional comments or observations?

APPENDIX V

PROGRAM EVALUATION DOCUMENTS

THE NATIONAL CENTER
FOR RESEARCH IN VOCATIONAL EDUCATION

N. L. (Mac) McCaslin
Associate Director, Evaluation & Policy

OSU
The Ohio State University

1960 Kenny Road
Columbus, Ohio 43210
(614) 486-3655

S. search and Development Series No. 114

CAREER EDUCATION MEASURES:
A Compendium of Evaluation Instruments

N. L. McCaslin
Charles J. Gross
Jerry P. Walker

pages 292-321 removed

The National Center for Research in Vocational Education
The Ohio State University
Columbus, Ohio

1979

INVOICE

RL № '9

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FOR RESEARCH IN VOCATIONAL EDUCATION
The Ohio State University 1960 Kenny Road Columbus, Ohio 43210
Tel (614) 486 3655 Cable CTVOCEDOSU/Columbus Ohio
Federal Identification No. 31-602 5986W

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(416) 884-2711 • 773-6243 • 731-3063

April 5, 1984

Mr. Nobert Kisenga
Technical and V. Teacher's College
P.O. Box 90199
Luanshya, Zambia.

Dear Mr. Kisenga:

In response to your letter of March 23, 1984, you may indeed use the materials contained in my Evaluation booklet. The only stipulation is that you acknowledge the source and authorship of the document.

Best wishes with your project.

Sincerely yours,

F. S. Bobesich
Superintendent of Education
(Programs)

c.c. Dr. K. Puffer
Faculty of Education
Department of Industrial and Vocational Education
Edmonton, Alberta. T6G 2G5

THE YORK REGION CATHOLIC SEPARATE SCHOOL BOARD

EVALUATION BOOKLET

SECTION I

TEACHER EVALUATION

* Historical Perspective

* Teacher Evaluation - Improvement Programme 1975

* "TCH. 4" Teacher Evaluation Package
  Memorandum #28
  Rationale
  Forms

59 pages

APPENDIX VI

Memorandum of Understanding

Memorandum of Understanding Between the Government of Zambia and the Government of Canada for an Institute of Technology/Memorandum of Understanding Between the Government of Canada and the Government of Zambia: Conditions Governing Canadian Personnel Serving in Zambia under the Canadian Technical Assistance Programme. Project Cost, Canadian International Development Agency, First phase 1969 - 1973.

1. Vocational Training Act No. 37 of 1972 (Appendix 1). the organization of the Department is outlined at Appendix 3.

2. Programmes

The Department is at the moment responsible for the following programme areas:

a. Post-Secondary

Industrial Technician

Engineering Technology

Paramedical

Air Services

Business and Commercial

Applied Arts

Hotel Services

Technical and Commercial Teacher Training

Management Training

b. Post-Junior Secondary

Technical Trades

Business and Commercial

Hotel Services

Agriculture

Additional programmes are offered to meet specific service requirements of Zambian employers.

A summary of actual and projected student enrolments and outputs is given in Appendix 4.

3. Curriculum Development

The Department is responsible for the development of curricula in all areas of technical and vocational training under its jurisdiction, on the advice of industry-based Curriculum and Standards Advisory Committees.

4. Advisory Committees

The Department is responsible to provide and establish effective co-operation with industry, business and commerce through the Curriculum and the Standards Advisory Committees, and the National Council for Technical Education and Vocational Training and its sub-committees.

5. Standards and Certification

The Department is responsible, in full co-operation with industry and business, for the development of a national system of certification through testing and examination.

6. Upgrading Programmes

The Department intends to introduce part-time and/or full-time vocational training programmes for workers in employment to fill the manpower needs of Zambian industry.

7. Staff Training

The Department may implement training programmes for teaching staff, administrative staff, and other support staff, as necessary, in a continuing effort to upgrade the standards of instruction and institutional administration.

8. The Department is responsible to establish effective methods of communication and cooperation with the Ministries and Departments of the Government of Zambia and with other bilateral and multilateral organizations whose activities are related to the implementation of this programme.

f. The Zambian Institute of Technology

1. Programme

The Zambia Institute of Technology provides technician, technology, and applied arts training in the following fields:

a. Civil Technology: Civil, Survey, Architecture, Building construction;

b. Electrical Technology: Electrical, Electronics, Telecommunications, Instrumentation;

c. Mining Technology: Metallurgy, Mining Ventilation, Mining Survey;

d. Applied Science Technology: Industrial Science, Computer;

e. Secretarial, Business Studies;

Anticipated enrollments for the contract period are summarized at Appendix 5.

2. Advisory Committees

All training programmes are closely related to the needs of industry, business and commerce in Zambia, and are developed and kept up-to date with assistance of the Curriculum and Standards Advisory Committees, and other staff-industry advisory committees as necessary.

3. Industrial Experience

Arrangements are made with industry and business to give Zambia Institute of Technology students relevant work experience as an integral part of the technical training programme.

4. Academic Year

To promote efficient use of the instructional facilities, the institute operates on a quarter system. Each quarter is approximately three months, and four

quarters constitute an academic year.

5. Technical Programmes

The duration of the "technician" programmes is presently a nominal 20 terms or two and a half years. The student receives eight terms of theoretical and practical instruction at the institute, and, in addition, two terms of industrial attachment. Upon successful completion of the programme, the student is awarded an industrial technician certificate.

6. The duration of the "technology" programme is presently a nominal 13 terms of three and a quarter years. The student receives 10 terms of theoretical and practical instruction at the institute, plus three terms of industrial attachment. Upon successful completion of the programme, the student is awarded a diploma in technology.

7. Entrance Qualifications

Entrance qualifications for technician and technology programmes is normally the General Certificate of Education - Form 5 -with the approved standings in English, Mathematics, and Science.

8. Language of Instruction

The language of instruction is English.

9. Instructional Facilities

The facilities of the Institute include staff and student housing, laboratories and workshops, classrooms and

office space, kitchens and dining rooms, plus administrative and instructional support services, as outlined in the schedule of Accommodation at Appendix 6.

Work Plan

a. Participation and Contribution of the Government of Canada

The Government of Canada shall, through its Canadian International Development Agency, provide:

1. Experts

A total of 1180 man-months of teacher and advisor services at an estimated cost of US $3,040,000.00 and as further detailed in Table 1 of Appendix 7. Minor adjustments of individual post assignments may be made by CIDA, in consultation with DTEVT if this is found to be in the best interest of the training programme.

2. Fellowships

A total of 1800 man-months of fellowships as an estimated cost of US $900,000.00 to be awarded to Zambian citizens for training in Canada, and as detailed in Table 2 of Appendix 7.

3. Architectural Services

A total of US $200,000.00 towards payment of Canadian architectural consultants services for the

design of the Zambia Institute of Technology at Kitwe.

4. Project Manager

A total of US $200,000.00 for the services of a Project Manager at the Zambia Institute of Technology at Kitwe.

5. Miscellaneous, Contingency, and Escalation

A total of Us $200,000.00 for miscellaneous services and facilities as recommended by the Canadian Team Leader, and to cover the cost escalation over the life of the project.

b. Participation and Contribution of the Government of the Republic of Zambia

1. The government of the Republic of Zambia through its Ministry of Education and the Department of Technical Education and Vocational Training, will continue to provide personnel services, staff development programme support, and physical facilities (including land, buildings, equipment, and supplies) appropriate to maintain and extend a comprehensive programme to technical education and vocational training as outlined for the Second National Development Plan period (1972-1976) and beyond (Appendix 8).

The Government of Zambia expenditure on the

programme 1971-1974 is detailed at Appendix 9.

2. Specifically, for the Zambia Institute of Technology and DTEVT headquarters components of the project alone, the Government of the Republic of Zambia undertakes to provide:

a. Personal Services

Professional Staff: A total of 13,800 man-months of professional staff service at an estimated cost of K4,747,025.00:

Auxiliary Staff: A total of 15,420 man-months of non-professional and auxiliary staff service at an estimated cost of K2,320,560.00.

b. Fellowships

Local salaries and allowances for professional staff awarded CIDA fellowships, while in fellowship status, at an estimated cost of K473,150.00

c. Land and Building

All buildings required at the Zambia Institute of Technology, DTEVT headquarters, and ancillary facilities, at an estimated cost of K16,000,000.00

d. Equipment and Supplies

Institutional and instructional equipment for Zambia Institute of Technology, including installation and maintenance, at an estimated

cost of K1,500,000.00 according to requisition prepared by DTEVT, in consultation with the Canadian Team Leader.

e. Any miscellaneous services required.

f. Facilities for Canadian Experts

Accommodation, medical treatment and facilities, transportation, exemption from import duties and other customs duties and taxes, according to the terms of the "Memorandum of Understanding", and "Conditions of Service Governing Canadian Personnel Service in Zambia Under the Canadian Technical Assistance Programme", signed 21 July 1965. (Appendix 10)

Organization

a. The Canadian contribution to this programme shall be implemented in accordance with the plans and objectives set forth in this Plan of Co-operation.

b. The High Commissioner for Canada in Lasuka shall be the usual channel of communication between CIDA and the Government of Zambia for all policy matters concerning the Canadian participation in the technical education programme.

c. CIDA shall nominate the Canadian personnel to be assigned to the various posts indicated in this Plan of Co-operation, including the nomination of the

Canadian Team Leader, for the approval of the Zambian Ministry of Education, and the appropriate service Commission.

d. In the discharge of his duties, the Canadian Team Leader, in consultation with the Director of Technical Education and Vocational Training, shall:

a. on behalf of the Canadian team, maintain liaison between the High Commissioner for Canada in Lasuka, the Canadian International Development Agency in Ottawa, the Ministry of Education in Lasuka, and other local authorities;

b. co-ordinate, as judgement indicates desirable, the efforts of the Canadian team members with that of other ministries, organizations, agencies, and other projects whose activities have a bearing on the programme;

c. advise and assist in the selection, development and supervision of local personnel engaged in the programme;

d. prepare progress reports and technical reports as required by CIDA from time to time.

e. The Government of Zambia shall provide the necessary technical and administrative support to the project and ensure

co-operation of other agencies participating in the programme.

Sequence of Operation

a. CIDA shall commence its participation in and contribution to the technical education programme upon the coming into effect of this authorization to do so from the Government of Zambia. Prior to this request, CIDA has provided assistance in pre-operational planning, and the first phase of technical assistance. This contribution is summarized at Appendix II. Government of Zambia expenditure during the first phase has been summarized at Appendix 9.

b. Not including the period of pre-operation planning and previous technical assistance, CIDA participation covered by this plan of Co-operation shall be deemed to have commenced 1 April 1973 and will continue until 3 July 1978.

c. A chart showing the schedule of operation will be prepared by the Canadian Team Leader, in consultation with the Director of Technical Education and Vocational Training, and will be post-appended to this plan of Co-operation.

Reports

a. During the implementation of the project, the Canadian International Development Agency, through its Canadian Team Leader, shall submit such reports as may reasonable be required by the Ministry of Education of the Government of Zambia.

b. During the implementation of the project, the Ministry of Education, through the Director of Technical Education and Vocational Training shall submit such reports as may be reasonably required by

APPENDIX VII

DEPARTMENT OF TECHNICAL EDUCATION AND VOCATIONAL TRAINING

DRAFT CIDA/GRZ PLAN OF COOPERATION

JUNE 1975

A. From August 1975 to August 1977 the following assistance has been agreed to by GRZ and CIDA in the Administrative understanding signed in Lasuka, March 1975 as the use to which residual funds from the original Memorandum of Understanding are to be put.

1. Personnel: Eighty-six (86 man-years)
2. Fellowships: Up to thirty (30 per year)
3. Construction Management and Supervisory Personnel: Up to six 6 man-years)

B. During bilateral discussions which led to the formalization of the administrative understanding covering the period from August 1975 to August 1977 it was agreed that D.T.E.V.T. should set down at the earliest possible time, the required level of support over a five year period during which time assistance is to be phased out.

1. Personnel: One hundred and thirty-two (132) man-years made up as
   a. 1977/78 Forty man years (40)
   b. 1978/79 Thirty-two man years (32)
   c. 1979/80 Twenty-four man years (24)
   d. 1980/81 Sixteen man years (16)

e. 1981/82 Ten man years (10)

2. Fellowships: Up to Twenty (20) per year.

3. Construction Management and supervisory Personnel: Up to seven man years made up as follows:

a. 1977/78 Three (3) man years

b. 1978/79 Three (3) man years

c. 1979/80 One (1) man year

It must be understood that the above figures for the phase-out are preliminary. After discussions between the Ministry of Planning and Finance and the Canadian International Development agency detailed lists can be prepared showing the specific posts which are required to be filled.

S.A. Norton
A.D. (Tech.)
Department of Technical Education
and Vocational Training

Department of Technical Education and Vocational Training

Planning Document Assumptions:

1. It is the declared objective of D.T.E.V.T. to establish the organizational structure as recommended by the Working party in its Report to the Minister of Education dated March 1973 as set out on Pages 20 and 21 of the report.
2. That in those cases in which there exists a world wide shortage of staff it will be desirable to seek the assistance of C.I.D.A. (In particular disciplines i.e. mining.)
3. That some overlap of appointments is essential in order to maintain policies, procedures and continuity.

Recommendations:

That C.I.D.A. be requested to provide:

CIDA Post No.	DTEVT Post (Named)	
2	Assistant Directors, Technology	Headquarters
11	Assistant Directors, Trades	Headquarters
5	Controller Technology	Headquarters
3	Inspector I Technology	Headquarters
4	Inspector I (Programme)	Headquarters
10	Controller (Stds. & Cert.)	Headquarters
12	Inspector I (Trades)	Headquarters
14	Principal (Z.I.T.)	Z.I.T.
15	H.O.D. (Civil)	Z.I.T.
16	H.O.D.Electric & Com. (Tele)	Z.I.T.

17	H.O.D. Mining	Z.I.T.
18	H.O.D. Arch & building	Z.I.T.
19	H.O.D. Elect. & Instrum.	Z.I.T.
28	Sr. Maint. Technician	Z.I.T.
20	H.O.D. Computer	Z.I.T.
39	Shop Coordinator	Z.I.T.
20	H.O.D. Aeronautical	Z.I.T.
23	Inst. Aviation Electronics	Z.I.T.
26	Inst. Civil Engineer	Z.I.T.
27	Inst. Mine Survey	Z.I.T.
29	Inst. Architecture	Z.I.T.
30	Aero. Maint.	Z.I.T.
32	Inst. Instrumentation	Z.I.T.
33	Inst. Electronics	Z.I.T.
34	Inst. Telecoms	Z.I.T.
35	Inst. Quality Survey	Z.I.T.
38	Inst. Metallurgy	Z.I.T.

27

At a meeting in the Deputy Director's Office on 5 February, 1973 at 14:30 hours it was decided that CIDA should be requested to recruit/fund the above named posts under the CIDA/GRZ Agreement.

<u>In Attendance</u>

Deputy Director

A.S. (A)

S.P.O.

A.D (Tech)

S.A.Norton

1. 30 Lecturer (Telecommunications)

31 Lecturer (Electronics)

32 Lecturer (Mechanical Skills Electronic)

33 Lecturer (Mechanical Skills Electronic)

34 Lecturer (Industrial Engineering)

35 Lecturer (Land Surveying)

36 Lecturer (Computers)

37 Lecturer (Systems Analysis)

38 Chief Maintenance Technician

39 Shop Coordinator

2. To be Supported 1975/76 Only

A. Zambia Institute of Technology**

40 Head of Department (Civil/Survey)

41 Head of Department (Architecture/Building)

42 Head of Department (Electrical/ Instrumentation)

43 Head of Department (Electronics/ Telecommunications.

B. Zambia Air Services Training Institute

44 Head of Department (Aeronautical

45 Instructor (Aviation Electronics)

** Departments of Civil/Survey and Architecture/Building to be combined as Department of Construction. Departments of Electrical/Instrumentation and Electronics/Telecommunications to combined as Department of Electrical/Electronics.

3. To Be Supported 1976/77 Only

A. Zambia Institute of Technology*

46 Head of Department (Construction)

47 Head of Department (Electrical Electronics

Plan of Cooperation

ADMINISTRATIVE UNDERSTANDING

between

THE CANADIAN INTERNATIONAL DEVELOPMENT AGENCY

(CIDA)

and

THE DEPARTMENT OF TECHNICAL EDUCATION

AND VOCATIONAL TRAINING

(DTEVT)

Lusaka, Zambia

March, 1975

CIDA EXPATRIATE AND REQUESTED TECHNICAL ASSISTANCE REQUIRED FOR ZAMBIA TECHNICAL AND VOCATIONAL PROJECT

1973		End of Contract
Deputy Director (Programmes)	R.G. Proudfoot	Until June 1973
	I.T. Goodine	July 1973-1974
Assistant Director (Technological)		To be recruited
Superintendent (Technology) (Controller-Technology)		To be recruited
Controller, Programme Services (Controller-Curriculum Dev.)	R.E. Ridsdale	1974
Superintendent, Curriculum Development	E. Fox	1974
	Sr. Curriculum Development Specialist L. Caverhill	1974
Superintendent, Teacher Training	E.J. Hall	1974
Inspector (Commercial)	M. Cunningham	1974
Sr. Lecturer (Technical Teacher Training)	J. Harris	1974
Superintendent (Standards and Certification)	B. Carr	1974
Assistant Director, (Trades)	J. Quinn	1973
Superintendent (Trades Training)	S. Norton	1974
Inspector (Trades Training (MacNabb/McKay)	J. MacNabb (P. McKay)	Mckay under recruitment
Principal, ZIT		to be recruited

Dept. Head (Civil Engineering)	K. Rowland	1974
Dept. Head (Electronics/Telecom)	H. Peacock	1974
Dept. Head (Mining)	J.A. Wilcox	1974
Dept. Head (Architecture/ Building Construction	G. Consiglio	1974
Dept. Head (Electrical Instrumentation	C.R. Price	1974
Dept. Head (Aeronautical)	G. Ryning	1974
Dept. Head (Paramedical)		To be recruited
Vice-Principal (Evelyn Hone College)	R. Balsdon	1974
Aviation Electronics	R.J. Campbell	Under Recruitment
Instructor (Electrical Technical) Instructor		To be recruited
Vice-Principal (Technical)	M. Bradshaw	1974
Civil Technical Instructor	R.R. Roziere	1974
Surveying Techn.	D. Valentine	1973
Instructor (underground or mining surveying)		Recruitment Replacement
Sr. Maintenance Technician (Electronics/ Telecom/Instructor)	D. Cheeseman	1975
Architectural Techn. Instructor	G. Blum	1973
Aero Maintenance Eng. Instructor	G. McLean	1974

Computer Techn. Instr.	E. Day	1974
Dept. Head, Hotel and Catering		To be recruited
Electronics Techn. Instructor	L. D. Wrinch	1974
Telecom. Techn. Instr.		To be recruited
Resident Architect (ZIT)	B. Eldred	1973
Vice-Principal Technical (Mansa) Commercial Teacher Trainer		To be recruited
Mining Techn. Instr. (Geology or Mineralogy)		To be recruited
Shop Coordinator ZIP	D. Hunchak	1974
Senior Planning Officer		To be recruited

AUDITORS REPORT I & II

2.0.1.1. Audit Inspection -

Zambia Institute of Technology -KITWE

The Zambia Institute of Technology was founded in 19770 and the new campus at Riverside in Kitwe was occupied in 1975 but the construction was completed in January, 1978. The Luanshya, Kitwe City Centre and Luanshimba. The Kitwe City Centre Campus, which was the last to shift, moved to the present campus in August, 1980. The City Centre Campus was leased to the mining industry as a training centre under MIMSU (Mining Industry Manpower Services Unit) on unspecified conditions and no formal agreement or lease could be produced neither was reference made to the Commissioner of Lands. The evaluation Department of the Ministry of Provincial and Local Government Division was not consulted for evaluation of rent chargeable. Consequently, no rent was paid for the lease of the campus which comprised of two blocks students' hostels, a block consisting of kitchen and dining hall and a block consisting of classrooms and offices. Explanation is requested as to the failure to adhere to established procedure when leasing government property, authority for the lease and please also advise whether any payment in form of rent have been received from the date the premises were occupied by MIMSU up-to-date. Any contractors; Messrs. Minestone Zambia Ltd agreed to provide materials for initial repairs your Ministry undertook to provide funds for labour.

As at April, 1982 K22,966.24 had already been spent by your Ministry on wages as detailed on Appendix II and summarized below:

Year	Sub-head	Amount
1980	380/002	K11,646.24
1981	80/224	6,792.00
1982-April, 1982	80/224	4,528.00
	TOTAL	K22,966.24

At the time of audit in May, 1982 many cracks including severe ones were still visible and it may not be possible to completely remedy the situation with obvious disadvantages of the buildings' life expectation being drastically shortened since the cracks have affected the main frame work of the building structure resulting already in some of the student hostels remaining unoccupied due to damaged walls whose safety could not be guaranteed. Your explanation is requested regarding:

a) failure to claim refund for money spent on repairs from parties responsible;

b) why defective work was not detected before the buildings hand-over. - Department of the Ministry of Works and Supply was consulted in view of the fact that the latter is the adviser to Government on building constructions;

c) whether you intend to seek legal action to redress the situation in regard to buildings now having cracks and defects;

d) authority for the expenditure of K22,966.24 and details as to how much will be the final cost of repairs.

2. Utilization of ZIT Campus

Zambia Institute of Technology Campus at Riverside was built to cater for 1,660 students and since inception full capacity of study intake has not been achieved. The average student intake from 1976 to 1981 has been as follows:

Year	No. of Average Students	
	Z.I.T.	U.N.Z.A.
1976	823	
1977	798	
1978	976	84
1979	770	357
1980	626	334
1981	718	445

Many reasons were attributed to the failure to utilize all services mainly financial constraints to meeting boarding expenses and lack of academic staff despite recruitment abroad. As a result of the above, various facilities such as staff houses, offices, classrooms and student hostels remained under-utilized. It took a long time before the language laboratory was utilized. The computer centre was still idle due to lack of funds though air condition fittings and redesigned functional floors had
been completed, the cooler plant and computer hardware have not been purchased. Your explanation is invited.

3. Use of XIT Campus by the University of Zambia

In accordance with the University of Zambia programme to establish a University Campus in Ndola to cater for the school of Business and Industrial studies it was decided that the University be accommodated temporary at ZIT campus in Kitwe awaiting construction of a permanent campus in Ndola. The University was allocated all the necessary classrooms, laboratories, administrative offices, kitchen and dining facilities, student hostels, sports facilities and staff houses without any monetary considerations and no financial contribution was made by the University towards water charges and electricity bills other than for staff houses which had separate meters. It was obvious that financial provision for the University ear-marked to meet the costs of the above facilities remained unspent. It was also noted that rental charges received in respect of ZIT residential houses occupied by UNZA were retained by University of Zambia and not remitted to your Ministry for depositing into government revenue. Residential houses, of 14 high cost houses and 34 medium cost houses. The low rent rate charged to staff by the University disclosed that a total amount of 43,887.00 had been paid as rent for ZIT houses as at the end of April, 1982 by UNZA staff. Details are at Appendix III. Explanation is requested as to why no financial consideration was made by UNZA for various facilities offered in view of the fact that UNZA is

an independent Institution having its own budget. Why economic rent was not charged for properties occupied by UNZA and the failure to recover rent totalling K43,887.00 paid by UNZA staff occupying government houses. Why the University is not contributing towards the cost of water an electricity charges.

Office of the Auditor General

Regional Office

P.O. Box 70562

NDOLA.

Attention: Mr. D.S. Ilyayambwa

2.0.2. Auditors Report II

Your minute KITE/44/12226 dated 7th September, 1982 refers. First to allow me to correct the date which the Riverside campus was initially occupied students from Luanshya and Luanshimba Campuses took up residence in Site III Hostels in 1973, not 1975 as stated.

Contrary to your statement re the renting agreement for the City Centre Campus established channel were followed as can be seen from the attached copy (Appendix I) by which MIMSU undertook to renovate and redecorate the whole complex, the cost of these badly needed works to be offset against the agreed rental figure.

Para 2

The "Structural Cracking" and the "Boiler Explosion" are two separate and distinct issues and bear no relationship to each other whatsoever. The "Structural Cracking" which mainly affects the Site III Student Hostels which were the first buildings to be completed and occupied in 1973, should not be confused with "Shrinkage or Settlement Cracking" as these occur normally in all structures where WET Trade predominate i.e. concrete, cement blocks, etc.

The extensive Damage caused by the Boiler Explosion can in no way be associated to the Cracking in other areas. The explosion was brought about by lack of proper maintenance by the Institute workforce whose complete lack of knowledge of such systems caused this and at least one other explosion which extensively damaged a house. All efforts to have properly qualified and experienced personnel appointed to maintain the Z.I.T. Complex have consistently failed owing to lack of funds. Therefore responsibility for costs in restoring the hostel can not be attributed to any outside source.

The apparent cause of the "Structural Cracking" in Site III Hostels is a suspected design fault land possible high "Sulphates" content in the aggregates i.e. Crushed Stone used in the "Concrete Block" Manufacture negotiations with the Project Architect "Number Ten Architectural Group, Winnipeg, Canada" reached the point by April, 1980 where remedial action

suggested by them and a visit to Zambia Institute of Technology by the architect had to be decide upon as the buildings would continue to deteriorate if no repairs were carried out, and as it was apparent that investigations into the cause of the "Cracking" as well as apportioning of responsibility between the various factors, would be a lengthy and protracted exercise and as the Architect would only agree to visit Zambia at our expense i.e. Air travel, hotels, transport, etc., all in accordance with normal contract procedures. It was decided that it would be in the best interests of Zambia to spend that money on repairing the cracks. Consequently, a start was made on the repairs but unfortunately despite repeated requests for funds to complete the works, no allocation for this purpose has been forthcoming, indeed Zambia Institute of Technology has received no capital budget allocation for the past two years. Had we been able to complete the remedial work building would have been saved from further deterioration. Total costs would have been known and action to receive part of these costs could have been undertaken as the "Commission for Technical Education" as it was prior to 1973 was para-Statal and free to appoint its consultants the question of referring to the Director of Building did not arise. However, he was consulted, and he advised that owing to pressure of work he could not assist "The Commission".

Subsequent to the present Department being created

numerous approaches have been made to the Director of Buildings who had advised and assisted as and when necessary and his workload will permit.

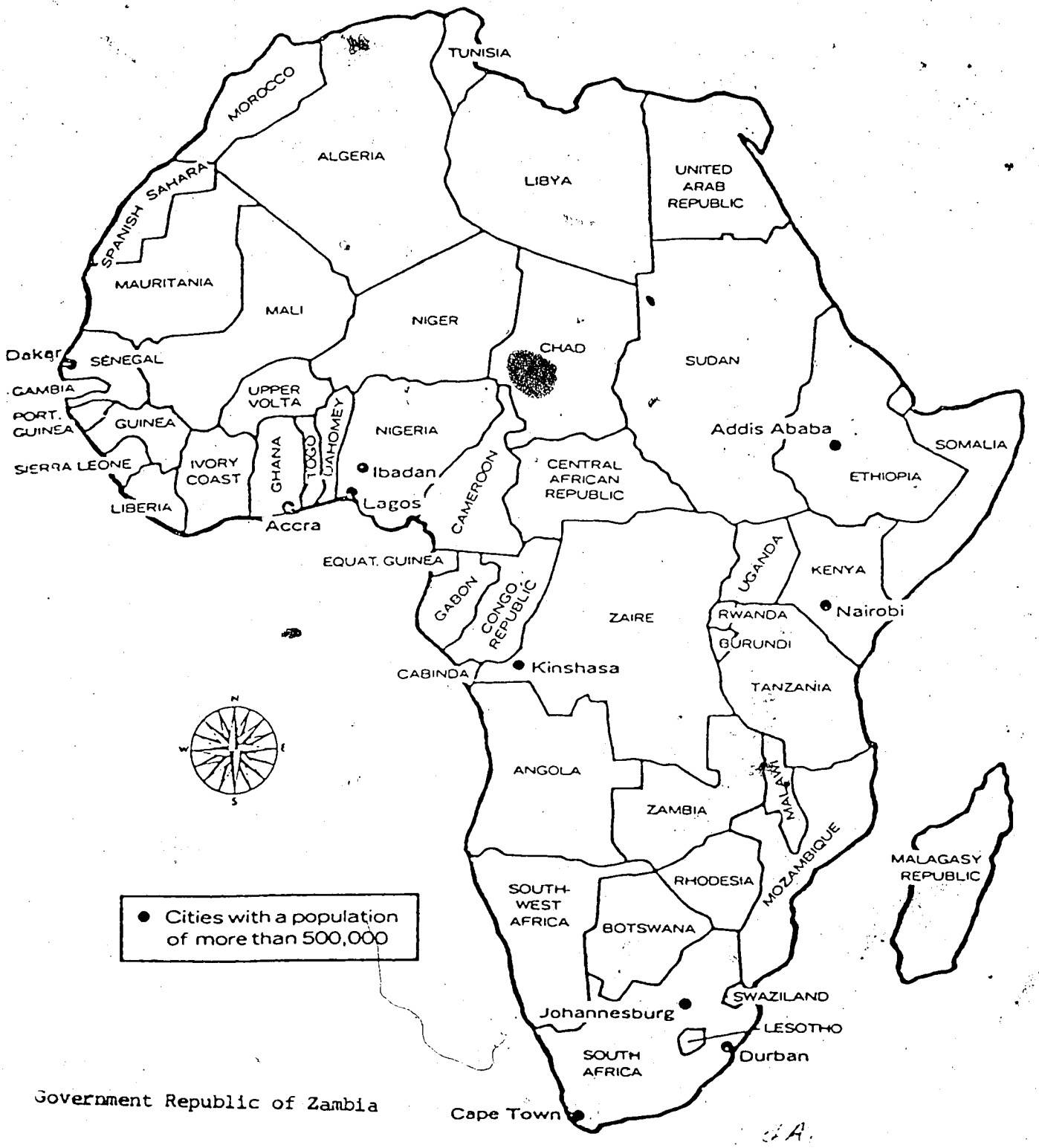
Attempt to attribute responsibility and recover costs have been and will continue to be made, by this Department a recent team from C.I.D.A. have been fully acquainted with the problems we have been facing vis-a-vis "Number Ten" and are attempting to have C.I.D.A. accept a degree of responsibility and provide funds.

I trust this explanation of events is to your satisfaction.

APPENDIX VIII

MAP OF AFRICA

TROPICAL AND SOUTHERN AFRICA'S BIG CITIES

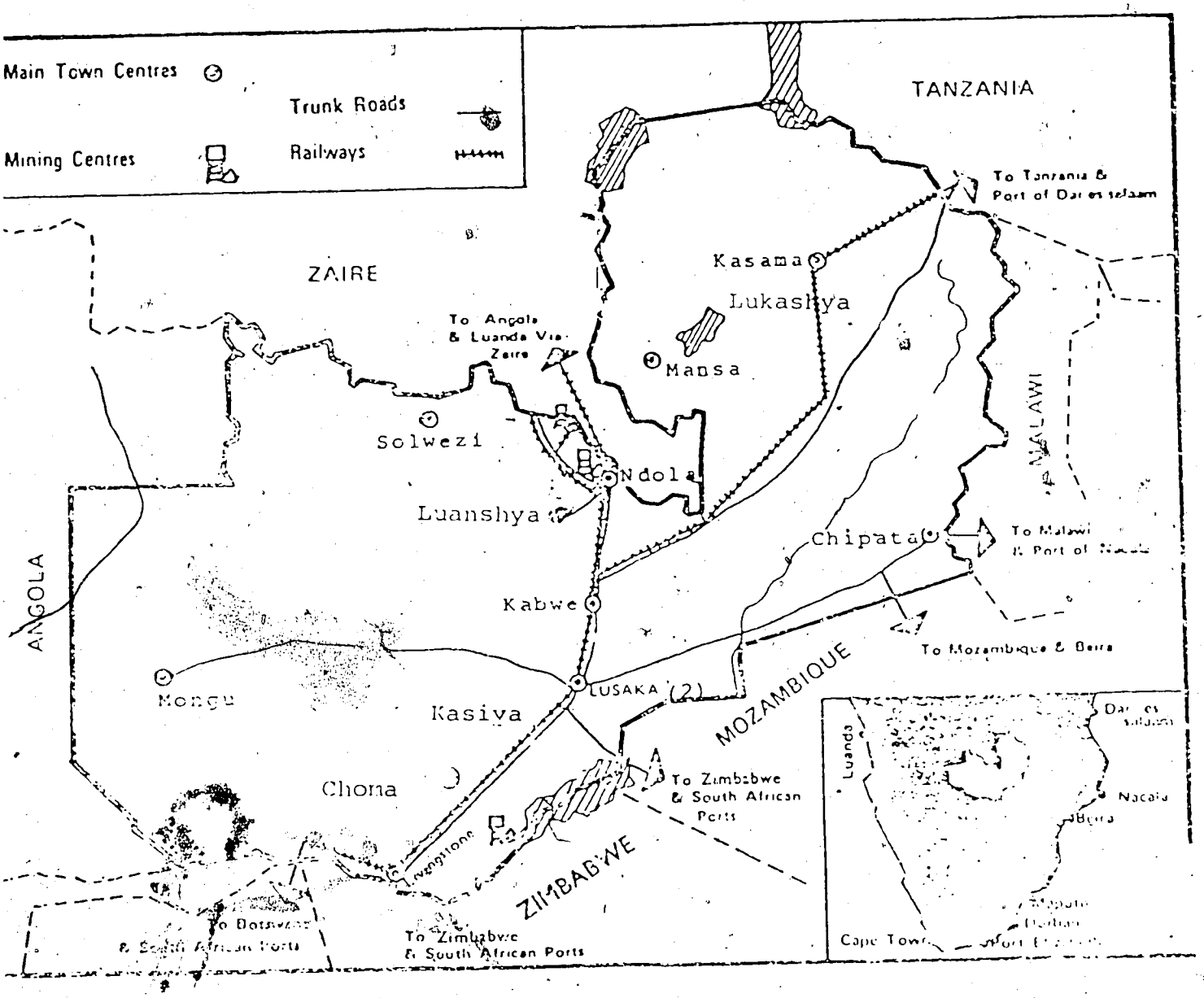


Government Republic of Zambia

APPENDIX IX

TECHNICAL INSTITUTIONS IN ZAMBIA

Map of Technical Institutions in Zambia



Republic of Zambia

TABLE VI

Population by Provinces and Urban and Rural Areas according to 1980 Preliminary Report

	1980 Preliminary
Total Zambia	5,679,808
Provinces:	
Central (including Lusaka Province	1,207,713
Copperbelt	1,248,888
Eastern	656,381
Luapula	412,789
Northern	677,894
North-Western	301,677
Southern	686,469
Western	487,988
Current Total	5,679,808
Large Urban Areas:	
Chililabombwe	61,928
Chingola	145,869
Kabwe	143,635
Kalulushi	59,213
Kitwe	314,794
Livingstone	71,987
Luanshya	132,164
Lusaka	538,469
Mufulira	149,778
Ndola	282,439
Current Total	1,900,276

MEMORANDUM

To: John Fisher, AD/CED

From: John Adams, A/SD

Date: 12th June, 1981

Subject: CIDA/DTEVT TRAINERS

The following DTEVT officers returned to Zambia in 1980 following completion of studies:

	NAME	FILE	LOCATION
1.	Malenga, G.	TE/5331	ZIT/Construction
2.	Sauti, F.	TE/4894	ZIT/Electrical
3.	Mwaba, D.	TE/4884	ZIT/Telecomm.
4.	Akekelwa, R.	TE/4137	ZIT/Electrical
5.	Banda, M.	TE/2661	ZIT/Library

The following have returned in 1981:

1.	Bangili, J.	TE/5678	ZIT/Electrical
2.	Chanda, R.K.	TE/5758	*ZIT/Electrical
3.	Chimba, M.N.G.	TE/5660	**ZIT/Electronics
4.	Chitondo, F.	TE/2402	***Headquarters
5.	Hampande, C.	TE/5631	***ZIT/Construction
6.	Mwanza, J.K.	TE/5789	*ZIT/Construction
7.	Mulenga, J.A.	TE/5661	*ZIT/Electronics
8.	Ndhlovu, S.	TE/6116	***ZIT/Data Processing
9.	Nyambe, F.	TE/6117	***ZIT/Data Processing
10.	Serenje, M.	TE/5676	*ZIT/Electrical
11.	Shitimali, S.	TE/5709	ZIT/Electronics

Notes:

* Transfers:

Chanda, R.K. and Mwanza, J.K. are being transferred from Nortech to ZIT.

Mulenga, J.A. from Zasti to ZIT

Serenje, M. from Choma to ZIT

This is as a result of an agreement between CIDA and DTEVT that CIDA scholarships to be used only to help Zambianise Zit.

2. **Chimba, M.N.G.

Did not complete his programme in Canada. Did not receive Diploma from Cambriam College.

3.***Programme Extensions

Chitondo probably will return to Canada for an additional one year or two year's study.
Hampande will return to Canada to complete a University Programme in civil Engineering.
Ndhlovu, Nyambe will return to Canada for on additional year's training in Data Processing.

The following are due to return in 1982:

1.	Chitumbo, L.E.	TE/6384	ZIT/Ind. Science
2.	Kasalwe, M.M.	TE/5267	*ZIT/Electrical
3.	Kangwa, E.	TE/5257	*ZIT/Electrical
4.	Kooma, T.	TE/6052	ZIT/Ind. Science
5.	Mabula, G.	TE/5816	ZIT/Construction
6.	Mwansa, F.	TE/6234	ZIT/Mining
7.	Nkweto, J.	TE/6233	ZIT/Metallurgy
8.	Ntengwe, F.	TE/6737	ZIT/Ind. Science
9.	Simwanza, K.J.	TE/2404	*ZIT/Business
10.	Songolo, E.	TE/119	*ZIT/Electrical

Notes:

1. Kasalwe, Kangwa to transfer from Nortec to ZIT by agreement noted previously.
   Simwanza from Luanshya T.T.I. to ZIT
   Songolo from Lusaka T.T.I. to ZIT

The following are due to return in 1983:

1.	Daka, E.	TE/5630	ZIT/Telecom.
2.	Mulenga, K.	TE/6383	*ZIT/Telecomm.
3.	Mbewe, D.	TE/6676	ZIT/Telecomm.
4.	Situmbeko, M.	TE/6542	*ZIT/Electrical
5.	Simpito, L.	TE/1633	ZIT/HOD/Electrical
6.	Lusanga, G.	TE/6090	ZIT/Ind. Science
7.	Mwale, A.	TJ/162	*ZIT/Ind Science
8.	Mwangana, G.	TE/1942	ZIT/Mechanical
9.	Phiri, V.M.	TE/6028	ZIT/Civil
10.	Chamenika, A.L.	TE/6653	*ZIT/Ind. Science

NOTES:

1. * Transfers:
   Situmbeko from Lusaka T.T.I. to ZIT
   Mwale presently being hired
   Chamanika presently finished at TVTC.
   This covers all CIDA scholarships granted from September 1978 to September, 1981 inclusive.

APPENDIX X

INSTITUTIONAL DESCRIPTIONS

TABLE VII

Full-Time Course Offerings (Z.I.T.)

Course	Entry Level	Course Duration
Mining (Technician)	Form V	2 1/2 Years
Mine Ventilation(Technician)	Form V	2 1/2 Years
Industrial Science Technician/Technologist	Form V	2 1/2:3 Years
Electronics Technician/Technologist	Form V	2 1/2:3 Years
Instrumentation (Process) Technician	Form V	2 1/2:3 Years
Construction Technician/ Technologist leading to Quality Surveying, Town and Country Planning, Architecture and Civil Engineering	Form V	2 1/2 Years
Computer Programmer/Technician	Cambridge Division III. plus Aptitude test	1 1/ Years
Business Studies and Commerce	Form III	2
Clerk Typist	Form III	1 1/2 Years
Shorthand Typist	Form V	1 1/2 Years

TABLE VIII

Full-Time Course Offerings (E.H.C.)

Course	Entry Level	Course Duration
Journalism	Form V 'O' Level	2 years
Letterpress Printing	Employer's Recommendation	55 weeks
Bookbinding	Employer's Recommendation	55 weeks
Hand Composing	Employer's Recommendation	55 weeks
Monotype Keyboard	Employer's Recommendation	55 weeks
Camera/Platemaking	Employer's Recommendation	55 weeks
Lithographic	Employer's Recommendation	55 weeks
Graphic Design	Cambridge/4 GCE	2 years
Fashion Design	Cambridge/4 GCE	2 years
Foundation year	Cambridge/4 GCE	1 year
Art Education	Cambridge/4 GCE	1 year
Music Education Diploma	Cambridge/Mature Age entry	3 years
Hotel Management	Form V	3 years
Reception	Form V	1 1/2 years
Catering	Form III	1 1/2 years
Food and Beverage	Form III	1 1/2 years
Housekeeping	Form III	1 1/2 years
Science Laboratory Technician	Cambridge/Mathematics English and Science	2 years
Copy Typist	Form II	1 1/1 years
Personal Secretaries	One-year experience-typing 40 wpm, shorthand 70 wpm	6 months

Radiography		3 years
Medical Laboratory Technician	GCE 'O' Levels with English, Mathematics and related Science subject	3 years
Pharmacy Technician		3 years
Physiotherapy		3 years
Meat and other foods	Public Health Inspection Cert.	6 months
Dispensing Asst.	Form III	6 months
Accountancy	Five GCE 'O' Levels with English and Mathematics	3 years
Store-keeping	Form II/III plus experience	1 year
Accounts and Business Studies	Certificate in storekeeping	1 year
Personal Administration	Form III plus experience	6 months

TABLE IX

TEACHING STAFF BY INSTITUTION AND NATIONALITY: 1975

Institute	Establishment	Post Filled				
		Z		NZ		
		M	F	M	F	T
Zambia Institute of Technology	168	7	-	100	9	116
Northern Technical College	55	6	-	37	1	44
Evelyn Hone College of Applied Arts and Commerce	168	13	3	88	13	117
Zambia Air Services Training Institute	38	14	-	7	-	21
Nkumbia International College	23	3	-	17	1	21
Luanshya Technical & Vocational Teacher's College	25	4	-	12	4	20
Kabwe Trades Training Institute	58	35	2	8	1	46
Livingstone Trades Training Institute	52	33	1	7	-	41
Luanshya Trades Training Institute	42	30	-	6	1	37
Lusake Trades Training Institute	32	20	1	2	-	33
Mansa Trades Training Institute	24	13	-	-	-	13

							161
Choma Trades Training Institute	21	4	-	5	-	9	
Luanshya Trades Training Institute	17	2	-	6	2	10	
Kasiya Secretarial College	4	-	-	-	4	4	
TOTAL	727	184	7	295	36	522	

Z = Zambian; NZ = Non-Zambian; T = Total

TABLE X

TEACHING STAFF BY INSTITUTION AND NATIONALITY: 1976

Institution	Establishment	Post Filled				
		Z		NZ		
		M	F	M	F	T
Evelyn Hone College of Applied Arts & Commerce	168	14	8	78	19	119
Zambia Institute of Technology	168	4	-	82	4	90
Northern Technical College	54	8	-	37	-	495
Zambia Air Services Training Institute	36	13	-	10	1	24
Nkumbi International College	25	5	-	12	5	22
Technical & Vocational Teacher's College	25	5	-	17	5	27
Kabwe Trades Training Institute	58	45	-	-	-	45
Livingstone Trades Training Institute	52	40	-	-	-	40
Lukashya Trades Training Institute	32	24	-	3	-	27
Lusaka Trades Training Institute	30	18	1	2	-	21
Mansa Trades Training Institute	21	15	-	-	-	15

						163
Choma Trades Training Institute	19	7	-	7	-	14
Luanshya Trades Training Institute	17	7	-	4	2	13
Kasiya Secretarial College	4	1	-	-	5	6
TOTAL	709	206	9	252	41	508

Z = Zambia; NZ = Non Zambian; T = Total

TABLE XI

TEACHING STAFF BY INSTITUTION, NATIONALITY & SEX: 1977

Institution	Establishment	Post Filled				
		Z		NZ		
		M	F	M	F	T
Evelyn Hone College of Applied Arts & Commerce	168	15	13	65	16	109
Zambia Institute of Technology	168	26	-	71	5	102
Northern Technical College	55	9	2	36	1	48
Zambia Air Services Training Institute	38	11	-	12	1	24
Nkumbi International College	23	7	-	11	3	21
Luanshya Technical & Vocational Teacher's College	25	12	-	14	2	28
Kabwe Trades Training Institute	58	34	2	5	-	41
Livingstone Trades Training Institute	52	31	2	4	-	37
Lusaka Trades Training Institute	32	20	1	2	-	23
Choma Trades Training Institute	21	8	-	5	-	13

						165
Luanshya Trades Training Institute	17	8	-	4	1	13
Lukashya Trades Training Institute	42	27	-	4	1	32
Mansa Trades Training Institute	24	15	-	-	-	15
Kasiya Secretarial College	4	2	-	-	2	4
TOTAL	727	225	20	233	32	510

Z = Zambia; NZ = Non Zambian; T = Total

TABLE XII

TEACHING STAFF BY INSTITUTION AND NATIONALITY: 1978

Institution	Establishment	Post Filled				
		Z		NZ		
		M	F	M	F	T
Evelyn Hone College of Applied Arts & Commerce	168	18	13	62	14	107
Zambia Institute of Technology	168	26	-	66	5	97
Northern Technical College	55	14	-	32	1	47
Zambia Air Services Training Institute	38	14	-	12	-	26
Nkumbi International College	23	5	-	13	2	20
Luanshya Technical & Vocational Teachers College	25	14	-	16	3	33
Kabwe Trades Training Institute	58	40	1	-	8	49
Livingstone Trades Training Institute	52	33	2	3	-	38
Lusaka Trades Training Institute	32	20	1	2	-	23
Choma Trades Training Institute	21	7	-	6	-	13

						167
Luanshya Trades Training Institute	17	11	-	3	-	14
Lukashya Trades Training Institute	42	28	-	3	1	32
Mansa Trades Training Institute	24	17	-	-	-	17
Kasiya Secretarial College	4	2	-	-	3	5
TOTAL	727	249	17	218	37	521

Z = Zambia; NZ = Non Zambian; T = Total

TABLE XIII

TEACHING STAFF BY INSTITUTION AND NATIONALITY: 1979

Institution	Establishment	Post Filled				
		Z		NZ		
		M	F	M	F	T
Evelyn Hone College of Applied Arts & Commerce	168	21	13	60	17	111
Zambia Institute of Technology	168	24	1	62	6	93
Northern Technical College	55	22	-	27	-	49
Zambia Air Services Training Institute	38	16	-	18	1	35
Nkumbi International College	23	5	-	12	1	18
Luanshya Technical & Vocational Teacher's College	25	14	-	14	3	31
Kabwe Trades Training Institute	58	39	1	7	-	47
Livingstone Trades Training Institute	52	35	2	3	-	40
Lusaka Trades Training Institute	32	22	1	1	1	25
Choma Trades Training Institute	21	8	-	5	-	13

						169
Luanshya Trades Training Institute	17	22	-	2	1	25
Lukashya Trades Training Institute	42	32	-	2	-	34
Mansa Trades Training Institute	24	14	-	-	-	14
Kasiya Secretarial College	4	2	-	-	2	4
TOTAL	727	265	18	213	32	528

Z = Zambia; NZ = Non Zambian; T = Total

TABLE XIV

Teaching Staff at Z.I.T., 1981/1982

Position	Nationality	Job Description	
Administration	Zambian	Non-Zambian	Total
	1	Principal	1
	1	V. Principal	1
	1	Senior Bursar	1
	1	Senior ? of	1
	2	Stores Officers	2
	1	A/Stores Officer	1
	1	Executive Officer	1
	1	Accountant	1
			10/10

Head of Dept.	Zambian	Non-Zambian	Job Description	
Head of Dept.	-	Indian(Dec.83)	Academic App.	1
Head of Dept.	-	Sri Lankan (Jan. 84)	Construction	1
Head of Dept.	Zambian		Elec. Eng.	-
Head of Dept.	-		Mining	-
Head of Dept.	-	Irish(Sept.80)	Business Studies	1
Head of Dept.	-	Indian(Oct.83)	Com. Ev. Studies	1
				4/5

Head of Sect.	Zambian	Non-Zambian	Job Description	
Heads of Sections		British	Ind. Science	1
	Heads of Sections		Electrical	
	Heads of Sections		Mine	
			Surveying	
				1/3
Senior Lecturers				
Senior Lecturers		Indian(Feb.83)	Com. Skills	1
Senior Lecturers		Sri Lankan (Aug.82)	Chem. Biol.	1
Senior Lecturers		Indian(July 83)	Mathematics	1
Senior Lecturers		Indian(Jan.84)	Physics	1
Senior Lecturers			Construction	
Senior Lecturers		Indian(Jan.82)	Town Planning	1
Senior Lecturers		British(Jan.3)	Architecture	1
Senior Lecturers			Const. Eng.	
Senior Lecturers			Electronics	
Senior Lecturers			Instrumentation	
Senior Lecturers			Telecom.	
Senior Lecturers			Metallurgy	
Senior Lecturers		British(Dec)83	Surveying	1
Senior Lecturers		Sri Lankan (Jan.82)	Bus. Studies	1
Senior Lecturers		Indian(Aug.83)	Economics	1

Senior Lecturers	American(81)	Secretarial	1
Senior Lecturers	Zambian	Ext. Studies	1
Senior Lecturers		Commercial English	
			11/18

Lecturers	Different Fields	
Lecturers	Indians	20
Lecturers	Zambians	40
Lecturers	Canadians	1
Lecturers	American	1
Lecturers	Not Specific	3
Lecturers	Sri[illegible]an	2
Lecturers	Va[illegible]es	55
Lecturers	Tanzanian	1
Lecturers	Danish	1
Lecturers	Pakistani	2
Lecturers	British	12

APPENDIX XI

PROGRAM APPROVAL