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# Technical and Vocational Teachers College, Luanshya, Zambia

An evaluation made by O. Eklöf, M. de Beer, J. Fisher and K. Ruuth-Bäcker



EDUCATION DIVISION DOCUMENTS No 8

TECHNICAL AND VOCATIONAL TEACHERS COLLEGE, LUANSHYA, ZAMBIA

AN EVALUATION MADE BY

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## 1. INTRODUCTION

In June 1972, the Government of the Republic of Zambia requested the Swedish International Development Authority (SIDA) to provide assistance for a Technical and Vocational Teachers College (TVTC). A plan of Operation was worked out by a team of Swedish experts in co-operation with representatives of the Department of Technical Education and Vocational Training (DTEVT). It was decided that the TVTC be located in Luanshya.

### 1.1 The Agreements

An Agreement was signed in June 1973, in which the Swedish Government made available to the Government of the Republic of Zambia financial resources towards the construction and equipment costs of the TVTC, expatriate personnel, and also means for scholarships and evaluation studies.

In October 1975 the then Ministry of Planning and Finance requested SIDA to make available an additional amount to meet the cost increases of the building programme. In accordance with this request a specific Agreement was signed in October 1976.

A third Agreement was signed in October 1979 after a request from the Government of the Republic of Zambia regarding continued Swedish support to the TVTC. In this Agreement SIDA made available resources, which should mainly be used for the financing of personnel, procurement of equipment, additional constructions and scholarships and training of Zambian staff in Zambia and abroad.

### 1.2 Evaluation of the Project

In the Plan of Operation it is indicated that the project will be studied through a system of evaluation. The evaluation will be carried out at three different levels:

- a) The build-up phase including both the building programme and the educational programme
- b) Regular follow-up of the activities at the College when it is in full operation
- c) Special evaluation after the College has been in operation for some time

An evaluation according to point c) was carried out in 1977 as a mid-term evaluation.

In the 1980 Joint Annual Review of the Swedish support to education in Zambia it was decided that a final evaluation be made when the prolonged agreement expires in 1981. Terms of reference for this evaluation were agreed upon in connection with the Joint Annual Review in September-October 1981 (see Appendix 1).

### 1.3 The duties of the evaluation group

According to the terms of reference the duties of the group are:

1. To evaluate the present status of the TVTC, Luanshya, according to the Plan of Operation and to the objectives and targets set out there-in;
2. To give particular attention to the following aspects of the Plan of Operation:
  - (a) Physical facilities - building and services
  - (b) Instruction equipment
  - (c) Training programme curricula
  - (d) Instructional staff and support staff
  - (e) Student flow and performance
  - (f) Capital and recurrent budget
  - (g) Advisory committee
  - (h) The relation between teacher needs and College capacity
  - (i) The relevance of the objectives

According to the terms of reference the evaluation should be carried out jointly with two members appointed by SIDA and two by the Government of the Republic of Zambia. The members of the evaluation team are listed in Appendix 2.

It is furthermore said that the evaluation should be carried out during a period of three to four weeks in Zambia. Before this period a follow-up study of the graduated students shall have started. A report shall be prepared during the stay in Zambia of Swedish team members and be presented in draft form at the end of the stay.

### 1.4 The procedure

The Swedish members of the team arrived in Lusaka on 15th August 1982. The following day all four members met and agreed on procedures and on the following programme for the evaluation:

1. Visit to the College in Luanshya in order to
  - see the premises
  - have interviews with the Principal, the Heads of Department and some other staff members
  - meet a sample of about 30 students, who will answer a questionnaire concerning their studies at the College.
2. Visits to secondary schools and other training institutions in the Copperbelt area and in Lusaka, where former students at present work as teachers.
3. Acquiring of information concerning TVTC by visiting DTEVT, Ministry of Education and Culture, the Teaching Service Commission, and the School of Education of the University of Zambia.

4. Preparing the report within the remaining days of the three weeks allowed for the evaluation.

As mentioned above a follow-up study of the graduated students should have started before the evaluation period. In order to achieve this, the DTEVT had approached the University of Zambia with a request for such a study. As this had not been initiated when the evaluation team started its work, the team decided to produce the report without awaiting the outcome of the follow-up study. If this study will be carried through later on, the result will be published as a separate report.

Appendix 3 gives the detailed programme for all the visits made by the group.

## 2. THE OBJECTIVES OF THE TVTC

According to the Plan of Operation, the main objectives of the College are the following:

1. To make Zambia self-sufficient of vocational, commercial and industrial arts teachers for trades training institutions and secondary schools, before the end of the Third National Development Plan 1981 and to commence the replacement of expatriate staff at the technical institutes with Zambian staff;
2. To co-ordinate the training of technical, vocational, commercial and industrial arts teachers by creating a new institution, recognized by the Institute of Education of the University of Zambia but with its own identity as to structure, level and standard;
3. To build technical and vocational teacher training in Zambia on a practical and industrial foundation which will ensure that future students are provided with an appreciation of the vocational environment and an understanding of the needs for the development of the country;
4. To ensure that technical and vocational teaching in Zambia is done in accordance with modern and internationally accepted methods of teaching including the use of teaching aids and progressive techniques adapted to the needs of Zambia.

In order to achieve these objectives, the Plan of Operation formulates four main targets, which concern institution building, quantitative educational targets, qualitative educational targets and Zambianization target. The evaluation will have to find out to which degree these targets have been reached.



### 3. THE BUILDING PROGRAMME FOR THE COLLEGE

In the Plan of Operation there are two targets concerning the construction programme as follows:

#### 3.1 The construction of the College buildings

- Establishment of a Technical and Vocational Teachers College in Luanshya for 320 resident students adjacent to the existing Luanshya Trades Training Institute (LTTI) and partly using the facilities of the LTTI as well as those of the neighbouring Mining School;
- Establishment of a Building Trades Department within Luanshya TTI, emphasizing concrete work, brick-laying, plumbing, carpentry, painting and decorating.

For the planning and implementation of the building programme a building subcommittee should be formed, including representatives of the Ministry of Education, the DTEVT and of different consultants involved. The Committee was supposed to approve drawings, provide basic data for the architect and be responsible for the design, construction and purchase of equipment and furniture. This Committee was never formed, which was unfortunate as the Committee would have been the right instrument, provided the powers vested in it were used, to direct the construction work.

Another important aspect in this context is the post of Project Co-ordinator, which is called for in the Plan of Operation. The Job Description for the post gives the following duties:

"Serve as educational adviser to the Building Unit, architect, and the contractor during the design and construction period..."

"Assist in connection with purchase of special equipment..."

"Advise on the organization and layout of workshops and labs..."

"Advise in layout for Audio/Visual laboratory, low-cost aids workshops and media centre..."

The post of Project Co-ordinator was never established.

In the mid-term evaluation the progress of the construction of the College was covered in all details. Some essential facts will be extracted from this report and from Principals' reports to demonstrate how the construction work proceeded. 1)

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1) The staff housing component of the project was financed by the Government of Zambia and was handled as a separate operation. It was completed within the stipulated time in March 1975. The staff houses are not part of this evaluation.

Due to a series of delays, described in the mid-term evaluation report, first during the drawing stage, later during the construction, the College buildings were far from completed when the educational activities started in mid 1975. Therefore, the College had to operate in temporary facilities at Luanshya TTI. The workshop building was completed and moved into in December 1975. In June 1976, the first part of the main College building came into use. All buildings except some hostel blocks were completed in December 1976. Because of lack of window glass, the inauguration of the College was postponed to 1977. The total delay amounted to 18 months.

The Plan of Operation called for "a simple functional and flexible unit". The constructions should be carefully adapted to the capacity of the Zambian building industry". It is questionable whether this advice was adhered to. There are certain points where criticism may be raised.

### 3.1.1 The roof design

Most unfortunate was the local architect's roof design and detailing. Unfortunately, the design drawings never reached SIDA. When SIDA's architect later on saw the working drawings, he wanted to make amendments, but at that stage the tenders had already been received and very few changes could be made. Due to the sophisticated design, the roofs of both the main College building and the Students Centre have been a continual headache for the College. Leaking roofs have damaged floor mats, walls, desks, equipment etc, during every rainy season. When this evaluation group visited the College there were workers on the roofs trying to find a final solution to the leakage problem.

### 3.1.2 The media centre

Another problem was the construction of the media centre, comprising

- the room of the librarian and his assistant
- the library
- the large area for group work and individual studies.

The library is a weak link of the College. It is too small. The layout also leaves much to be desired. Apart from being inflexible, the shelving system, the card catalogue stand, and the periodical stand are very space-consuming, thus reducing the capacity of the library. There is no space for tables and chairs. Those students who wanted to read were supposed to do this in the large group working area. All the surrounding five classrooms have doors which open towards the group working area. Therefore, this area became a circulation area. The Swedish architect was fully aware of this problem but nevertheless he accepted this solution. The surrounding classrooms have louvres which are not sound-proof, which also makes the group study area noisy.

Western design is irrelevant in Zambia's climate, where the connection between buildings is achieved more easily and cheaply by means of covered walks of traditional African type.

After some years it was evident that the group working area could not be used as such. In order to improve the conditions, part of the area was partitioned off by means of a wall about 2 meter in height, the entrance to the area being only from the library. This partitioned area is now a reading-room for visitors to the Library. It is said that the students throw books over the low wall to colleagues outside the partition, however, and in this way the theft of books has increased and will continue to be a problem.

### 3.1.3 Acoustical problems

The acoustical conditions in the Lecture Theatre and the group working area were problems from the very beginning. There has been an improvement in this respect after the walls were covered with sound-absorbing sheets.

### 3.1.4 Air-conditioning

The College has an air-conditioning plant, which is supposed to cool the Lecture Theatre, the Language Laboratory and the CCTV-studio. No precautions were made to reduce the sound transmission from the plant, when it was installed. The rooms mentioned could hardly be used when the air-conditioning was on. After an overhaul and some reconstruction it now works silently. However, the plant has a greater cooling effect outside the rooms than inside, which is due to the fact that the air-channels which connect the rooms to be cooled are wrongly designed. There is no return-air system except the corridors between the rooms and the plant.

### 3.1.5 Assembly Hall

The need for an in-door Assembly Hall seems not to have been discussed in the Plan of Operation. An out-door amphi-theatre was constructed outside the Students centre. It can be used for such assemblies as graduation ceremonies, film shows etc., provided that it is not raining. A construction of a roof above the open theatre could easily have solved this problem. On certain occasions it should also be possible to assemble the students in the Dining Hall. The evaluation team sees no real need for providing the College with an in-door Assembly Hall.

### 3.1.6 Premises at the LTTI used by the TVTC

The small electrical workshop, used for the subject method course for Technical Teachers, is located in the premises of the Luanshya TTI. It is regrettable that the College has not been able to use the main electrical workshop at the TTI for this teaching. According to the Plan of Operation there should have been close co-operation between the two institutions.

Another workshop, belonging to the TTI, is at present being used by the TVTC as a store room. It was reported to the team that the TTI in the near future wants to use this workshop for a new course in Tailoring, which means that the College must find some other space for storage.

A clinic has been established in one of the TTI's hostel buildings. This means that the students no longer have to make time-consuming visits to the City Hospital in case of minor sickness.

### 3.1.7 Recent developments

Concerning the recent developments of buildings the following can be noted:

- The central store, which was constructed and used by the contractor during the construction period, has been extended in two phases. It is used by both the TVTC and the LTTI.
- A water tank has been installed in order to give better water supply on those occasions when the water provided by the City Council is insufficient.
- In order to improve the housing conditions for the non-teaching staff, the College has bought six newly constructed family houses not far from the College.
- An extension of the Students Centre is under construction to be used as office of the Sports Officer and for storing of sports equipment.

### 3.2 The Building Trades Department

The second target concerning the building programme, i.e. the establishment of a Building Trades Department within Luanshya TTI, was never met. Nothing is said about this department in the various reports that have been issued by the College Principals. As far as the team has been able to find out, the matter has not been dealt with at the DTEVT either. The lack of the Building Trades Department has made it difficult for students taking Technical Teacher training courses with specialization in Building to be adequately trained in the subject method.

A reason for the lack of interest in establishing this new department at the LTTI may be the following:

As outlined in the Plan of Operation it was expected that a close working relationship be developed between the TVTC and the LTTI. It was expected that the facilities at the LTTI, such as Automotive, Electricity and Radio and TV Repair workshops should be used for the teaching of subject methods within these areas. As this co-operation did not materialize in the existing branches, there was no point in establishing the proposed new department.

### 3.3 Maintenance of the buildings

The Plan of Operation stresses the need for good maintenance of the buildings. It is proposed that the yearly budget in this respect should be 2 per cent of the capital costs of the buildings. This percentage has never been reached. In the case of the TVTC, 2 per cent of the building costs amounted to K 27,000 (in the year of construction). In 1982 the budgetary provisions for the maintaining of all DTEVT buildings are only K 80,000, out of which the TVTC can be given only a small share.

Taking this into consideration, it is not surprising that the evaluation team found several areas where the maintenance was not as it should have been:

- Several walls and floor-mats are damaged because of the leaking roofs
- Many of the louvres in the windows are missing
- Several ceiling lamps are smashed
- Broken window panes have not been replaced
- In the Lecture Theatre ten folding seats are missing, which could easily have been replaced by the Industrial Arts students
- General cleanliness leaves much to be desired.

## 4. EQUIPMENT AND ITS MAINTENANCE

### 4.1 Equipment

The TVTC is very well equipped with suitable teacher training materials and equipment in all subjects. The most sophisticated and expensive apparatus is the closed circuit television. This could not be used when the College opened, as it took a specialist two years to have this equipment correctly installed and trimmed. It is working at present. However, when it breaks down, there is probably nobody at the College who is capable of repairing it.

A few years ago the Language Laboratory was severely damaged due to the leaking roofs. It is now functioning again. All apparatus is covered with plastics when not in use, to prevent further damage.

The Library should also be mentioned in this connection. The shelving system makes it quite inflexible. The adjustable shelves are in reality impossible to move to other positions. Many shelves are nearly empty, which indicates that many books have been stolen. Steps should be taken to prevent further theft from the Library.

The Science Laboratory is well equipped, mainly for the teaching of Physics on a level somewhat above the O-level, but also with some equipment for Chemistry.

The Technical Drawing room has adequate equipment for the teaching of the junior secondary school syllabus. As the College now has started to train Industrial Arts teachers to teach the subject in senior secondary school, there is need for some effective drawing-boards.

The workshops for woodwork and metalwork were recently inspected by inspectors from the DTEVT who found everything to be in good order except for some fire-extinguishers. The workshops are tidy, tools and machines very well maintained and stored in a safe way.

The low costs teaching aids workshops has various types of duplicators, projectors, etc. of both simple and fairly complicated construction. An expensive camera, which should be used for production of slides, has disappeared, probably stolen. There is also equipment for the production of overhead transparencies and for charts, e.g. coloured pencils and crayons. A refrigerator for the preservation of some of these materials has been transferred to the Co-op shop.

#### 4.2 Maintenance

Concerning the maintenance of the equipment, the team made the following observations:

- A lot of type-writers, especially the Facit, are out of order.
- Some over-head projectors did not function due to missing electrical plugs or bulbs.
- Many projectors are very dusty, as they are not covered when not in use.
- All the small pocket calculators bought for Mathematics are now out of order.

By means of SIDA grants the College has been able to buy spare-parts for all sorts of AV aids in such large amounts that there is no need for more for at least five years to come. However, a skilled technician will be needed to make necessary repairs.

A few words should also be said about the maintenance of furniture.

- In some classrooms some furniture is broken.
- The desks are in some cases damaged because of the leaking roofs.
- In the staff-room as well as in the group study area and in the Students Centre, the covering material of upholstered chairs is worn out.
- In the kitchen, which is run in co-operation between the LTTI and the TVTC, some ovens and the big scale are out of order. Spare parts are not available. The compressor of the cold-room was stolen six months ago and has not yet been replaced. The compressor was not in a secured environment.

#### 4.3 Transport

It is important for a teacher training institution to have good transport facilities. All student teachers should be visited by their supervisors and for this transport must be available.

The TVTC has a fleet of 7 vehicles. The problem with the vehicles is not the purchase of them, which has so far been arranged through SIDA, but the maintenance, which has to be paid out of recurrent expenditure.

A Government institution, Mechanical Service Department (MSD), which has workshops in every town, also in Luanshya, services all Government vehicles (GRZ). MSD does not function well. There is a shortage of foreign exchange resulting in a shortage of spare parts. There is also lack of skilled labour. As an example it can be mentioned that MSD in Luanshya kept the College's VW Combi for eight months without being able to repair it. Finally the College was allowed to take back the car, which was then repaired by the automotive students and their teacher.

During certain periods there has been misuse of the College vehicles. This was stopped by the last Swedish Principal who introduced strict control which now seems to have loosened again, however.

Poor transport control means inordinate use of fuel. This excessive expense on fuel means that less funds are available for pressing areas such as maintenance of buildings, training equipment and purchasing of training requisites.

## 5. TRAINING PROGRAMME CURRICULA

### 5.1 Types of courses

The Plan of Operation outlines the following courses to be offered at the College:

- Technical Teachers course	10 months
- Vocational Teachers course	10 "
- Commercial Teachers course	24 "
- Industrial Arts Teachers course	24 "
- In-plant training Instructors courses	1 - 3 months
- Up-grading for In-service Teachers courses	1 - 3 "
- Advanced courses for Principals, Inspectors and Supervisors	6 weeks
- Instructional Aids Technicians course	Not specified

The Technical Teachers course and the Vocational Teachers course appear to have been merged under the Technical Teachers course, comprising both purely technical, vocational and commercial teacher-training.

In 1975, teacher trainees from Teachers Training Unit, Lusaka, were transferred to the TVTC and graduated in June 1975. Another group from TTU, Lusaka, completed the 10-month Educational training at the TVTC and graduated in December 1975.

Since 1976 up to present the following courses have been run or are being run:

- 13 Technical Teachers courses	10 months
- 18 Commercial Teachers courses	24 "
- 18 Industrial Arts Teachers courses	24 "
- 12 Industrial Arts Teachers Up-grading courses	10 "
- 1 Equipment Maintenance course	2 weeks

For further details, see Section 7, Student flow and Performance, and also a table showing Types and Numbers of Courses, Appendix 4.

The following courses, as outlined in the Plan of Operation, have not been run:

- In-plant Training Instructors courses
- Up-grading for in-service Teachers courses 1-3 months
- Advanced courses for Principals, Inspectors and Supervisors
- Instructional Aids Technician course.

No up-grading for in-service Teachers courses of 1-3 months have been run. Two up-grading courses for Industrial Arts Teachers have been run with a duration of 10 months. As yet, no such similar course has been run for Commercial Teachers. Also, a 2-week course for Equipment Maintenance has been organized, as shown above. No Instructional Aids Technicians course has been organized, for the reason that no positions for the graduates have been created.

The Principal's Quarterly report July-September 1976 and the Mid-term Evaluation 1977 mention that one and two Shorthand courses respectively have been run at the College. However, no evidence of these courses have been made available to the Evaluation team.

The Commercial and Industrial Arts Teachers courses will in future consist of 24 months skill training and 10 months educational studies. Thus, no up-grading courses will be needed except for a few years to come to enable graduates who have attended the 2-year programme, to take the extra year in order to put them on the same level as those graduating after the 3-year training programme has come into effect.

In 1977 "Shop & Saleswork" was introduced as a commercial option. This title was later changed to "Retailing".

In 1981, a 10-day workshop for DTEVT teachers lacking formal teacher training was mounted. It comprised basic classroom techniques. The programme was devised by TVTC staff, but the course took place at the Zambia Institute of Technology, Kitwe. A modified version of this course will probably be a prototype for future similar courses.

Further details about course content etc. are given in Appendix 5, which is a Fact Sheet of the DTEVT used for advertising courses at the TVTC. It should be noted that the



Commercial courses have common subjects taken by all trainees (Commerce, Office Practice, Accounts, Commercial Mathematics and Communication Skill), whereas Retailing, Typing and Economics are optional subjects. In the Industrial Arts programmes Metalwork and Woodwork are options. Technical drawing, Science, Mathematics and Communication Skill are common subjects.

The contents of the 3-year courses to begin in September 1982 and of the 1-year up-grading courses in Commercial Subjects and in Industrial Arts are not included in the Fact Sheet. The extra year given in the 3-year programme will be mainly for Skill training as are the 1-year in-service up-grading courses.

The existence of these programmes has benefitted the following categories of trainees:

- Technical/Vocational/Commercial teachers with skills, who required Educational training
- Pre-service trainees to teach at the Junior Secondary level in Commercial Subjects and Industrial Arts
- Primary school teachers to teach at the Secondary level in Commercial Subjects and Industrial Arts
- Junior Secondary teachers of Industrial Arts to teach at Senior Secondary level.

In future, when all the 3-year programmes are in operation as from September 1982 together with the 10-month in-service up-grading courses in Industrial Arts and Commercial Subjects, all TVTC graduates absorbed in Secondary education, will be qualified to teach at both Junior and Senior level.

In addition, there have been trainees who benefitted from the short duration courses and workshops mentioned above.

In addition to the regular programmes at the TVTC, there is a growing evening class curriculum utilizing the physical facilities and teaching staff of the College. The total enrolment in 1981 was 410 as compared to 167 in 1980. Classes offered in 1981 included "O" level courses, Business Studies courses as well as purely recreational subjects, e.g. Cookery, Car repair and Photography.

## 5.2 Application of curricula

### 5.2.1 Coverage

Formal curricula have been developed for all the existing programmes and have been approved both by the Ministry of Education and the University of Zambia.

These curricula have been worked out by either an Advisory Sub-committee or a Subject Panel, comprised of representatives from the Ministry of Education, the University of Zambia and the TVTC. (See section 9 on Advisory Committee.)

The affiliation to the School of Education, UNZA, which was formally approved in February 1982, depended partly on the above curricula being of an acceptable standard. However, two points seem to be missing in the TVTC curriculum:

- The curriculum does not include training in some areas for which teachers should be prepared before they go into the field, since there is a high probability they will be expected to supervise, perhaps to develop, or at least to participate fully in, the relevant activities. Production Unit organization and management and the stimulation and organization of extra-curricula activities in schools and colleges are referred to here. The TVTC could thereby make a valuable contribution to the development of Production Units in the educational institutions to which its graduates go, and prepare its graduates for a whole and effective participation in the social life of those institutions.
- There was little evidence that the new three-year programmes for Commercial Teachers and for Industrial Arts Teachers are carefully expanded from the former two-year programmes so as to prepare the graduates to deal more effectively in all areas with pupils of higher age-range, in addition to the younger, Junior Secondary pupils. The Education Foundation subjects seem to cover much the same ground as the two-year curriculum. An opportunity may thus be lost to increase the graduates' awareness and effectiveness when having to deal with older pupils.

## 5.2.2 Transmission of curricula

### 5.2.2.1 Inspection

DTEVT Inspectors make a regular annual inspection of the TVTC, during which they attempt to observe every lecturer. Every observed lecturer has a report made on his performance. Judging from these reports, covering the period 1978 - June 1982, the teaching is of a fairly high standard. An Inspectors Report Form is given in Appendix 6.

### 5.2.2.2 Schemes of work

Schemes of work are available for all subjects but an impression was gathered that not a very high value is placed on full, systematic and careful production in all departments. Also, there seems to be no common format from department to department.

### 5.2.2.3 Assessment

Assessment is quite fully performed and continuous, with a good variety of tasks being taken into consideration.

### 5.2.2.4 Industrial break

It has been said that the Industrial break period at the end of skill training is to be eliminated for the Industrial Arts trainees, and that a period of the same length devoted to

practical work and production will be substituted. This would aid the development of a real Production Unit in the Industrial Arts sections. However, it has to be taken into consideration that even intensive production work at the College cannot be the same as actual industrial experience and trainees with no such experience, having come straight from school to the College, will be deficient in a necessary component.

It is understood that the initiative leading to the unfortunate loss of industrial experience has come from industry, not from the College, but, on the other hand, it may not have occurred if industries had been more involved in the Advisory Committees.

It is presumed that the Commercial Teacher trainees will continue their office break as before.

### 5.2.3 Deficiencies observed

#### 5.2.3.1 AV aids

According to the Inspectors' reports, there appears to be an over-reliance on the chalkboard as a teaching aid. This point is acknowledged by Heads of Department themselves at the TVTC.

#### 5.2.3.2 Subject methods

An overall impression is formed from comments received from graduates and employers that more attention should be given to the specific subject methodology. Separate syllabi for the methodology for each subject are worked out at the TVTC, but in general terms only, and in most cases it seems that the subject methodology is left very much in the hands of the subject specialist, who gave no detailed evidence of what is transmitted in terms of class work-sheets, studied demonstration break-downs, job analyses, related assignments, etc.

#### 5.2.3.3 Practical application

Practical aspects of subjects seem often underemphasized. Some education subjects seem to be treated too academically without reference to their classroom and workshop application, and there is evidence that this is a growing tendency, perhaps caused by a lack of any kind of technical background in some teachers of these subjects.

We are not sure that the items in the curriculum related to maintenance of equipment and tools in Industrial Arts are given the degree of significance they require.

The bias in the teaching of Office Practice, and in the curriculum and the transmission of its subject method, is found to be too theoretical, obviously influenced by the theoretical treatment given to it in Secondary schools. (See Section 11 concerned with the relevance of the objectives of the Plan of Operation.)

#### 5.2.4 Organization and administration of Teaching Practice

The second term of the 10-month Educational course for all programmes is devoted to Teaching Practice. During this period, two to four assessments are given by different TVTC lecturers and an UNZA assessor. A Pass on this component is obligatory for success in achieving certification. A lesson report form for TVTC lecturers is given in Appendix 7 and Host-Teacher Assessment Form in Appendix 8.

Teaching practice is carried out mainly in Copperbelt schools and training establishments. Some Technical Teacher trainees go farther afield to where they are able to get practice in their own specific subjects where necessary.

A preliminary to teaching practice is achieved for all students through peer teaching (Micro teaching) and for a proportion of them through use of the close circuit television in the College, but no practice with actual students as was envisaged in a special association with the Luanshya TTI and Mining Craft School, or in a Demonstration School, occurs. The idea of a Demonstration School, made up from first year classes in Commercial and Industrial Arts at the TVTC together with classes at the TTI, as described in the Principal's Quarterly report for the period July-September 1976, and discussed at the final Advisory Committee meeting on 4 February 1977, has not materialized.

The teacher trainees are put under the care of host-teachers in the schools who, on the whole, appreciate the task they are asked to perform in assisting the trainees, but they are not trained specifically for this duty. It does happen that, occasionally, host-teachers use the trainees as substitutes for themselves and leave the trainees without supervision and guidance.

There have been one or two complaints that the receiving institutions have not been properly informed about the arrival of teacher trainees for teaching practice, but it appears that the Teaching Practice is fairly satisfactorily arranged and organized, judging from comments from Heads of secondary schools and most Principals of DTEVT institutions.

### 6 INSTRUCTIONAL STAFF AND SUPPORT STAFF

#### 6.1 The organization of the College

The division of the College into departments has changed several times. According to the Plan of Operation the College should have the following organization:

- Education Department
- Technical Department
- Related Subjects Department
- Commercial Department
- Industrial Arts Department

When the College opened, the Related Subjects Department was deleted.

From May 1977 the Technical and Industrial Arts Departments merged into one department under name Technical Department. A new department, the Extra Mural Department, was created to take care of the teaching practice and all other contacts outside the College. Thus the organization was then:

Technical Department  
Commercial Department  
Education Department  
Extra Mural Department

In 1982 the organization was again changed. At present the College has the following four departments:

Industrial Arts Department  
Commercial Department  
Education Department  
Related Subjects Department

Not every department has a well qualified and experienced teacher as its Head, as it should.

There is also an Administrative Department, headed by the Registrar.

Appendix 9 shows the present organization chart of the College in simplified form.

## 6.2 The Establishment

The Plan of Operation gives a staff list for a College with a total enrolment of 320 students. This list is reproduced in the table below. As a comparison the table also shows the Approved Establishment and the total in post in 1981.

### The Establishment

Post	Plan of Operation	Approved Establishment	Total in Post
Principal	1	1	1
Vice Principal	1	1	1
HoDs	5	4	4
Senior Lecturers	5	9	6
Lecturers	14	12	23
Total	26	27	35

The table shows that the Approved Establishment is approximately the same as the establishment in the Plan of Operation, whereas Total in Post is substantially higher. This indicates that the College is at present over-staffed, especially if one realizes that the Plan of Operation calculates with an enrolment of 320, while the actual enrolment is around 250. The student/teacher ratios, in the three cases in the table are 12.3, 9.3 and 7.1 respectively.

The administrative and supporting staff should, according to the Plan of Operation, be 38 in number. In 1981 this staff totalled 57. Thus, it seems as if the College is over-staffed also at this level.

### 6.3 Staff development programme

One of the targets of the TVTC as expressed in the Plan of Operation is the "Implementation of a Staff Development Programme for the College aiming at having a fully competent Zambian staff prepared to take complete responsibility for the running of the College by the end of the Third National Development Plan 1981". The following narrative will answer the question whether this target has been attained.

#### 6.3.1 Overlapping of outgoing non-Zambians and incoming Zambians

When the College opened, most of the teachers were sponsored by SIDA. The Zambians at that time made up only one fifth of the academic staff.

The SIDA teachers were selected and appointed after careful scrutiny. The College Principal, who was appointed one year before the opening of the College, was allowed to express his opinion about the candidates. In this way it was possible to find teachers whose education and training corresponded well with the subjects they were going to teach. It was more difficult to find Zambian teachers with suitable qualifications to become lecturers at the College. The Principal had in this case no say. The teachers were appointed by the Teaching Service Commission upon recommendation from the Ministry of Education, not always with the correct qualification for the job. The problem was that the first Zambian teachers were given their own posts without previous understudy of the SIDA staff. Later on, a preferable method of Zambianization should have been one that allowed a Zambian teacher to be employed at the College while the non-Zambian he or she was going to replace was still in post. There should always have been overlapping time. This was rarely the case. Before the last Swedish Principal left, it had long since been decided that the outgoing and the incoming Principal would have some time together at the College. On the contrary, what happened was that Mr. Magnusson left several months before the arrival of Mr. Bwalanda, the new Principal. This must be regarded as most unfortunate. One of the components of a staff development programme should be a long overlapping of the outgoing and incoming officer.

### 6.3.2 Study visits to other countries

Another form of Staff Development is the arrangement of short study trips to other countries. Three study trips have been arranged, all to Kenya, one for administrative personnel, the others for teachers. Not all the Zambian teachers seemed to appreciate the trip. One of the lecturers explained to the team that he was of the opinion that this was a waste of money, that could instead have been given to starving children.

### 6.3.3 Counterpart training and scholarships

In the first agreement, SEK 300,000 were set aside for overseas scholarships. The total is now SEK 1.5 million.

The scholarship programme planned for 1976 could not be implemented. Out of ten scholars selected and approved by the Ministry of Education in Commerce and Industrial Arts only four were accepted by the University of Alberta. The six remaining were to be admitted in the following year if the group of four were successful during their first academic year. The scholarship resources from SIDA were at that time not yet available.

In November 1977 the Zambian Head of the Extra-Mural Department left for UNZA on study leave to complete his degree studies.

In July 1978 a staff member was appointed to co-ordinate the scholarship programme for the College.

A Zambian lecturer in Metalwork at the College was the first to be granted a SIDA scholarship. He left for the UK in September 1978 to begin a three years course to study for his HND in Engineering Technology.

The procedure for selecting candidates for SIDA scholarships is the following. Both the Ministry of Education and the DTEVT are asked to nominate candidates, who have been teaching for at least two years and who have shown exceptional aptitude in the classroom. Subsequently, a panel consisting of representatives from the TVTC, SIDA, the DTEVT and the Ministry of Education convenes to interview the students and to finally select the fortunate candidates for overseas scholarships.

In 1979 it is reported that not less than 15 Zambians were studying abroad on scholarships in order to take up posts at the TVTC. Details of their training is given below:

Counterpart training abroad

Sponsor	Study field	Country	Number	Length of studies
SIDA	Technical	UK	1	2
SIDA	Technical	UK	4 <sup>1)</sup>	1 1/2
SIDA	Commercial	UK	5	1 1/2
Br Council	Techn. Education	UK	2	1 (c.)
Commonwealth	Comm./Business	UK	1	2
NORAD	Comm./Shop & Sales	UK	2	1 1/2

Eleven of these are taking the 1.5 year course at Jordan Hill College in Scotland. They will be awarded a Diploma: Technical/Commercial Education in Professional Subject and in the Practical Teaching. As this is not a degree and UNZA wants College Lecturers to be University graduates, it may be necessary for these to continue the studies for a degree. However, at present some of them have already started to teach at the College after returning from Scotland. Unfortunately, three of the IA teachers did not pass the final exam and have to resit this in September 1982.

It is open to debate whether studies abroad is the best solution to the personnel problem. European university courses are seldom relevant to African conditions. The scholars return very often badly prepared for their jobs in the home country. In many cases they experience a culture shock upon arrival at home, due to alienation from their origin. The standard of living they have been accustomed to abroad, may be lacking in their home country. This may give rise to dissatisfaction. The lack of the modern teaching aids they have been trained to use may also lead to frustration and passivity, at least at the beginning. Most of them expect fast promotion because of their credentials. Some of them immediately apply for a new scholarship.

It would probably be more advantageous to have a training scheme where the conditions throughout were the same as in the home land. It is a good thing that a regional institute for higher technical education in Nairobi will be established. In future it should be possible to utilize this alternative.

#### 6.3.4 International training under the guidance of specialists

An alternative to counterpart training abroad is internal training guided by contract-employed specialists. Their duties

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1) These four students were given an extra year.



should mainly be developing of syllabi, training of local personnel, development of routines and teaching methods. This system, which implies that two teachers, one Zambian and one from the donor country, hold the same post, was never practised in the TVTC project.

This system will certainly produce teachers fully qualified to do the job. However, it does not award them a degree, and for that reason it will probably not be appreciated.

#### 6.4 The speed of Zambianization

In the first agreement in 1973 concerning the College, a decision was taken that the Swedish Government would make available to the Zambia Government, personnel in an estimated amount of 530 man-months. Also, the third agreement makes resources available for the financing of personnel, in this case without stating a certain number of man-months.

Most of the personnel financed by SIDA belong to the administrative and teaching staff. The post of College Principal was held by a Swede up to the end of 1980. On the other hand, the post of Vice-Principal was held by a Zambian from the very beginning.

The support staff has, since the opening of the College, been made up of Zambians, the only exception being the post of AV-technician, which was for some time held by a SIDA-employee.

The table in Appendix 10 shows the number of Zambian and non-Zambian teaching staff (Principal and Vice-Principal included) for every year. The non-Zambian staff comprises teachers sponsored by SIDA and Norad but also non-Zambians employed and paid by the DTEVT.

The diagram (Appendix 11) shows that the Zambianization was very fast between 1979 and 1980 and between 1981 and 1982. It might have been better with a more smooth Zambianization over all the years.

If the sponsorship programme had started earlier and been extended over a longer time, this would have contributed to a smoother and slower Zambianization.

### 7. STUDENT FLOW AND PERFORMANCE

#### 7.1 Student flow

The table below shows enrolment, drop-outs and graduates for all courses at the TVTC 1975 - 1982. Enrolment and drop-outs for the Industrial Arts and Commercial Teachers courses ending in 1983 are separated as, obviously, graduation figures cannot be given. As for the courses ending in August 1982, where the students have just completed their examinations, we have assumed that all have passed and consequently included them in the total number of graduates. These figures could thus change slightly when the examination results have been announced.

Type of course	No of courses	Enrolled at start	Drop-outs No.	%	Graduated
Technical Teachers	13	239	11	4.6	228
Industrial Arts Up-grading	2	31	-	-	31
Equipment Maintenance	1	20	-	-	20
Industrial Arts 1975-1982	16	257	29	11.3	228
Commercial Teachers 1975-1982	15	291	28	9.6	263
Totals up to 1982	45	838	68	8.1	770
Industrial Arts ending 1983	2	31	1	3.2	30
Commercial Teachers ending 1983	3	61	3	4.9	58
Totals in 1983	5	92	4	4.3	88
Grand total	50	930	72	7.7	858
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The number of drop-outs in 1983 may be somewhat higher and the number of graduates somewhat lower when the courses are completed.

The percentages of woman participants in the courses are shown in the next table.

Type of course	Percentage of women	
	at course start	at graduation
Technical Teachers	14.9	12.7
Industrial Arts Teachers	7.3	5.8
Commercial Teachers	19.4	18.3

The figures in the last table reveal that the drop-out of women is somewhat higher than that of men. It is also evident that most woman students have chosen the Commercial Teachers course and very few the Industrial Arts course.

Also see the table "Types and numbers of courses", Appendix 4.

## 7.2

### Student performance

The student performance appears to have been consistently high judging from the final results and the continuous assessment marks. The failure rate is negligible, and the average drop-out rate is 7.7 % as shown above.

One reason for the very high success rate in relation to Industrial Arts and Commercial teacher trainees is that they are selected from a very high number of applicants, e.g. 1500 applications were made for 30 places in a Commercial course in 1981. Of these 600 had acceptable good qualifications. Also, in-service trainees tend to be very highly motivated. Furthermore, the drop-out rate and the system of referrals probably remove likely unsuccessful candidates before the final examinations.

Although the graduates of the TVTC seem to be highly thought of on the whole, reports have been given of occasional unacceptable performance and behaviour, and there have been indications that the TVTC training should pay more attention to aspects of professional ethics and practice and to an assessment which takes character and maturity properly into account in addition to academic skill and teaching performance. This aspect is also emphasized in the "Proposals and Recommendations for Educational Reform", issued in October 1977.

### 7.3 Certification

Up to 1982 the examination procedure and certification have been the responsibility of the DTEVT. This has worked quite satisfactorily. These functions are now to be performed by UNZA. The examination process might gain from the affiliation, since the moderation is likely to be more thorough and consistent.

One important change that has occurred in this respect is that under the DTEVT process the graduate teacher was issued with an Interim Diploma initially which was transformed into a Full Diploma after two years' teaching service, during which time he had to be inspected at least twice, his Interim Diploma being endorsed by the Inspectors and also by his Headmaster. This probationary period performed a very valuable function. In line with the practice of the other Teacher Training Colleges affiliated to UNZA, the trainee will from now on be issued with a final Diploma upon graduation.

### 7.4 Questionnaire

As mentioned in the Introduction, page 3, a sample of 29 students representing the Technical, Commercial and Industrial Arts Teacher courses, were asked to fill in a questionnaire. This included questions on many different aspects of their College experience. A copy is given as Appendix 12, and a summary of the responses is attached as Appendix 13.

Because of the timing of the visit of the Evaluation team (it arrived for the final four days of the academic year and the students were involved in examinations and in departure arrangements) it was not possible to get a larger group or make a more extensive and planned research along these lines. The Questionnaire was used therefore only as an indicator of opinions and information about experiences.

## 8. CAPITAL AND RECURRENT BUDGET

### 8.1 Capital budget and expenditure

The Swedish contribution to the College project is included in the three agreements according to the table below:

#### Swedish contribution to the TVTC according to the agreements

Agreement year	Amount (SEK)
1973	15,000,000
1976	3,500,000
1979	11,500,000
Total	30,000,000

This amount corresponds to K 4.5 million according to the present exchange rate.

The actual Swedish contribution to the project is up to 30 June 1982 almost SEK 35 million, which corresponds to K 5.2 million. Appendix 14 displays the yearly Swedish payments to the project broken up into costs of personnel, equipment, buildings and scholarships.

As can be seen from the table the costs for the SIDA personnel is the highest cost, 52 %, followed by building costs, 36 %. Equipment takes only 8 % and scholarships 4 %.

From the DTEVT a list of capital expenditure for the TVTC has been produced. It gives both the authorized expenditure and the actual expenditure (See the table below)

#### Capital expenditure for the TVTC

Year	Authorized expenditure	Actual expenditure
1972	50,000	7,554
1973	261,000	80,375
1974	657,000	333,708
1975	1,000,000	815,113
1976	351,000	689,746
1977	351,000	197,474
1978	150,000	94,639
1979	40,000	91,048
1980	100,000	91,048
1981	316,000	41,798
1982	294,000	294,000 +
1983	187,000 +	187,000 +
Total	K 3,757,000	K 2,866,449

The sign + indicates that these amounts are estimates only.

If the last two years, where the definite figures are not yet available, are deleted, we find that the authorized expenditure amounts to K 3,276,000 whereas the actual expenditure is only K 2,385,449. The difference is K 890,551. This means that 27 per cent of the authorized expenditure has never been released to the College.

The figures for authorized expenditure are the figures given in the annual budget proposal prepared by the Ministry of Finance. The actual expenditure is what DTEVT has paid for the College as capital costs. Most of this money, if not all, is paid from the Swedish contribution. According to the present exchange rate the actual expenditure up to 1981, K 2,385,449, corresponds to SEK 16 million.

This figure corresponds well to the Swedish contribution towards equipment, buildings and scholarships, which according to Appendix 14 amounts to SEK 16.3 million, up to 1981.

## 8.2 Recurrent budget and expenditure

### 8.2.1 The payment of money for recurrent expenditure to the College

In almost every annual report, the College Principal expresses the opinion that the financial resources given to the College are insufficient. This general scarcity of resources diminishes the possibility of attaining desired goals. Related to the economic possibilities of a developing country, this has to be accepted. However, the level of the votes does not seem to be the most problematic question. According to the previous Swedish Principals, it is the administrative procedures that have made the economic management very difficult.

The votes for a calendar year are made known as late as in April and are paid out in monthly instalments, sometimes with incomprehensible reductions. This system makes planning and rational purchases difficult. Earmarked votes (e.g. from SIDA) sometimes stick in the bureaucratic channels. Especially at the beginning of the year, the DTEVT's (and/or the Ministry of Finance's) treatment of the economic matters creates great problems. On one occasion, the last Swedish Principal had to advance monthly salaries out of his own pocket to employees who threatened to go out on strike because the salary payment from the central authority had not come on time.

Accumulated debts from a previous calendar year has to be paid out of the meagre budget of the current year. This presupposes a very restrictive economic management. A disproportionately big part of the Principal's working time has to be devoted to the economic matters.

These problems still exist and continue to exacerbate the difficulties of maintaining and running the College.

### 8.2.2 The yearly votes for recurrent expenditure

The table below gives the recurrent expenditure for the years 1976 to 1981 for the TVTC. (It has not been possible to subtract the wages for the Classified Daily Employees (CDE) for the years 1976 and 1977 from the recurrent departmental expenditure.)

#### Recurrent statement of expenditure on the TVTC (Kwacha)

Votes	1976	1977	1978	1979	1980	1981
Salaries	55,290	74,809	110,113	119,919	123,775	119,051
C.D.E. wages	147,698	152,389	22,673	25,590	30,771	43,707
Other recurrent departmental expenditure			121,746	142,578	151,484	167,067
Total recurrent expenditure	202,988	227,198	254,532	288,087	306,030	239,825

The table shows that the salaries have been nearly constant during the last three years, whereas the wages have doubled during the last four years. Other recurrent departmental expenditure shows an average increase of 12 per cent per year. The total recurrent expenditure reveals the same pattern. In order to find out whether this rise actually corresponds to an improved economic climate for the College, it is necessary to compare with the inflation.

The consumer price index has risen from 100 to 240 between 1975 and 1981, i.e. an increase of 140 per cent. During the somewhat shorter period from 1976 to 1981 the total recurrent expenditure has increased by only 62 per cent. Therefore, the economic conditions for the College seem to have deteriorated.

### 8.2.3 The distribution of allocated funds

The headline "Other recurrent departmental expenditure" includes boarding costs, students allowances, training requisites, fuel, maintenance etc. As an example the figures for 1981 are tabled below:

Funds allocated to the TVTC for the year 1981

Votes	K	Per cent
Boarding costs	93,249	55.8
Student allowances	27,000	16.2
Training requisites	26,100	15.6
Fuel, maintenance, etc.	20,718	12.4
Total	167,067	100.0

As the table reveals, the boarding costs (mainly food) represent a substantial percentage of the total funds allocated to run the College. Training requisites represent only 15.6 per cent of the total. The evaluation team is of the opinion that this allocation is not sufficient to maintain standards, especially in the expensive practical training areas.

9 ADVISORY COMMITTEE

9.1 Background

According to the Plan of Operation, an Advisory Committee should be established "to ensure harmonious relationships between all parties concerned in the College", consisting of "representatives of Government, educational institutions, industry, commerce and labour organizations."

Such a committee was formed in 1973. At the third meeting of this Advisory Committee it was agreed that meetings should be held every six months, but notwithstanding this resolution there is a record of altogether only seven meetings of this committee.

Also, at the third meeting the Committee was informed that a Curriculum and Standard Advisory Committee had been formed in February to deal with curricula. Five meetings of this Committee are recorded.

9.2 Duties

The duties of the Advisory Committee are stated in the Plan of Operation as follows:

"The Committee shall advise and assist on matters concerning training programmes, course content, standards, changes in curriculum, practical training in industry and offices, nomination of instructional staff, equipment requirements, recruitment of students and placement of graduates."

These duties are identical to those stated for all Curriculum and Standards Advisory Committees of the DTEVT.

The Curriculum and Standards Advisory Committee ceased regular meetings in 1979, and since then there has been only one ad hoc Advisory Committee, formed in May 1982, to consider the proposed 3-year Commercial Teacher Training curriculum.

Curricula were devised for the programmes that have come into operation through the work of respective Sub-committees of the Curriculum and Standards Advisory Committee. This Committee also dealt with matters such as industrial break, teaching practice, entrance qualifications, evaluation methods, revision of curricula and other matters concerning the realization of the programmes at the TVTC.

During its existence, the Advisory Committee dealt with such concerns as enrolment of students, staffing, plans for Zambianization, relationship with UNZA, building programmes, and SIDA involvement. It did not, however, assume the duties of the Building Sub-committee outlined in the Plan of Operation.

Prior to the affiliation with UNZA, curriculum development was taken over by Subject Panels (with the exception of the 3-year Commercial Teachers Training programme mentioned above). These Panels are comprised of members conversant with the respective subjects, drawn from UNZA, the Ministry of Education and the DTEVT. The forming of Subject Panels to deal with the respective curricula is probably why the Curriculum and Standard Advisory Committee system has not worked since 1979.

Some problems still remain to be resolved in relation to the future process for developing curricula, e.g. the DTEVT has made Related Subjects (Communication Skills, Maths, Science) nationally examined, meaning that a Pass is required for certification, whereas UNZA allows Related Subjects to be internally evaluated.

### 9.3 Membership

Members of the Advisory Committee were derived exclusively from the Ministry of Education, the DTEVT, and UNZA with the single exception of one member from industry.

Similarly, commerce, labour organizations and branches of Government other than Education were poorly represented or unrepresented on the Curriculum and Standards Advisory Committee and its Sub-committees.

### 9.4 Conclusion

While in operation, both the Advisory Committee and the Curriculum and Standards Advisory Committee functioned effectively within their respective areas of consideration.



From now on it will be the University's responsibility to maintain standards and to ensure the adequacy of the examination process and certification.

The precise nature of the co-operation between the TTI and the TVTC in the utilization of physical resources, economy and in other ways was left undecided at the final Advisory Committee meeting on 4 February 1977.

#### 10. TEACHER NEEDS AND COLLEGE CAPACITY

- 10.1 No figures were made available to the evaluation team to indicate teacher needs in the various categories supplied by the TVTC.

The Chairman of the Teaching Service Commission indicated that actual or near over-production of teachers for Commercial and Industrial Arts subjects has occurred at the Junior Secondary level, and that the next task is to train teachers for the Senior Secondary level in those areas. The College has already met this challenge by mounting 1-year up-grading in-service courses for Junior Secondary Industrial Arts Teachers. A similar course for Commercial Teachers will be available as from September 1982. As a matter of fact, however, many Industrial Arts Teachers already teach at Senior Secondary level without being properly trained for it.

- 10.2 In addition, the College has modified its 2-year Commercial and Industrial Arts courses from 2 to 3 years in order to serve the same purpose. The lengthening of the courses will lead naturally to a lower output figure of more highly trained teachers, more fitting to the rate of loss of teachers from the schools due to retirement or resignation. At the same time, it will allow the Zambianization of remaining Senior Secondary positions filled by expatriates to continue.

- 10.3 It would seem that the capacity of the College, in all aspects, is more than satisfactory to the purpose of fulfilling the up-grading and 3-year course needs. It would seem also that the backlog of technical teachers untrained in Education formerly existing in DTEVT institutions has disappeared, and that from now on there is likely to be only a small number of technical teachers each year from the DTEVT's own institutions who will require the 10-month training course - young skill-trained teachers who have just joined the profession and have been recruited for the TTIs and for the higher institutions of the DTEVT.

It cannot be said to what extent industrial training organizations will continue to require the TVTC to train their own instructors on the 10-month course, as they have done up to the present. Their situation is probably similar to that of the DTEVT.

- 10.4 It seems that the possibilities for utilizing the resources of the College for in-service courses will have to be fully explored and a flexible use made of staff and resources. This may include also an expansion of academic and adult up-grading programmes.

- 10.5 In short, all the indications are that the resources of the TVTC will be more than adequate for future demands, provided that, in particular, a flexible use is made of classroom accommodation. Indeed, some areas may well be under-utilized and it is difficult to see how this can be otherwise, while a recessionary state exists in the economy of Zambia. There are, however, several possibilities which could be explored for in-service training.

## 11. ACHIEVEMENT AND RELEVANCE OF THE OBJECTIVES

The four main objectives are stated in section 2 (see page 3).

There appears to be some confusion in the use of the terms "vocational", "technical", "industrial arts" and "commercial". Objective 1 refers to "vocational", "commercial" and "industrial arts" teachers. No. 2 refers to "technical", "vocational", "commercial" and "industrial arts" teachers. No. 3 refers only to "technical" and "vocational" teacher training, and No. 4 to "technical" and "vocational" teaching. The team considered that all these terms were relevant to each and every objective, and the following comments are made accordingly.

### Objective 1

The first part of this objective has been fulfilled for Trades Training Institutes and Junior Secondary schools, and courses are in operation, or will be in operation very shortly, which will lead to the fulfillment of this objective for Senior Secondary schools.

However, it is considered that the second part of this objective is not relevant. It has not been a function of the TVTC to skill-train personnel so that they could replace expatriate staff at technical institutes.

### Objective 2

A new institution, recognized by the School of Education of the University of Zambia, which co-ordinates the training of the various groups of teachers referred to, has indeed been created. It would seem, however, that while the TVTC had achieved an identity of its own, the affiliation with UNZA could lead to a watering-down of its uniqueness unless those at the University who are closely involved in maintaining the link with the TVTC, have a full appreciation of its unique role in technical and vocational education in Zambia, and of the needs and qualities of technical education as such. This comment is related to the observations made for objective 3.

### Objective 3

The team considered that this objective was highly relevant but was at the same time that least achieved. It is difficult to see how students straight from school, as those in the Industrial Arts and Commercial Teacher training courses are

(either as teachers or as Form V leavers), can appreciate the industrial and commercial environments of the country in order to convey their understanding to their own pupils without having direct experience of those environments themselves. While the Commercial students may have limited office experience in an industrial break, the Industrial Arts students may lose the industrial break which has been part of their curriculum. (See section 5.2.2.4.)

It is possible that a greater involvement of industry in the Advisory Committees right from the beginning could have led to greater co-operation from industry and an understanding of the needs and goals of the TVTC, so that industrial experience of some kind would have become a recognized and integral part of every student's studies.

A closer co-operation with the TTI and the Mining School from the beginning, as proposed in the Plan of Operation, would also have contributed to the achievement of this objective.

This necessary practical and industrial foundation would have added to the uniqueness of the TVTC and given the identity referred to in Objective 2.

It is unfortunate that what was developed from the beginning in this respect, at least in so far as the industrial break was concerned, seems in danger of being lost unless a vital and viable relationship to industry and business is created and maintained.

#### Objective 4

The team found that modern and internationally accepted methods of teaching are utilized by the staff at the TVTC, although their own use of teaching aids does not match their advice to the students in all respects (see section 5).

The team judges that graduates of the TVTC should be capable of teaching according to modern and internationally accepted methods. Whether or not that capacity is influenced greatly by the attitudes and the availability of aids which they encounter in the field, is an open question.

More comprehensive comments in relation to this objective would have been possible if the follow-up study, indicated in the Terms of Reference, had been carried out.

The objectives of the College in many respects have been fulfilled. However, flexibility and real ingenuity will be needed in future to ensure that the College and its resources are fully utilized and its character and unique function maintained.

## 12. CONCLUSIONS

### 12.1 The planning of the project

Is the TVTC a successful project? As shown in the previous section, most objectives have been fulfilled. Nevertheless, the question may be dealt with here.

In order to improve the effect of assistance to developing countries the donor country should take more responsibility for the planning, e.g. by offering help through consultants for collecting and working out statistics and carrying through feasibility studies. Transfer of experience from corresponding projects in other countries - not necessarily in the home country - should make the establishment of a project easier and hopefully prevent mistakes. Objective advice is important and should be given as part of development programmes. It should be possible to give such support without getting in conflict with the receiver's sets of values.

In the case of the TVTC the evaluation team is of the opinion that the planning in some areas was not sufficient. There were very vague data available concerning the need for the different kinds of teachers that were going to be trained. The Plan of Operation shows a table with projected requirements of technical, vocational, commercial and industrial arts teachers in Zambia 1973 - 1980. However, it is remarked that "These figures are based on very inadequate information and should be revised before the Plan of Operation is finally approved". Such revision never took place.

The over-production of teachers in Industrial Arts and Commerce for the secondary schools has been taken into consideration by the initiation of the in-service and three-year pre-service courses. However, the balance of the different departments of the College is different to what was originally envisaged. It has become very much more a secondary teacher training college than a technical teacher training college. This is exemplified in the table below:

Distribution of graduates on the three groups of teachers

Group of trainees	Number of graduates in per cent	
	1976-1979	1980-1982
Technical	39.3	19.7
Industrial Arts	27.2	33.4
Commercial	33.4	46.9

The table shows that the proportion of Technical Teacher graduates has decreased from two fifths to one fifth over the years. This may also affect the unique character of the College.

## 12.2

### Zambianization

Zambianization has almost been achieved according to the objectives. However, two things have not functioned as well as they should. Firstly, there has been very little if any overlapping between the outgoing non-Zambians and the incoming Zambians. Secondly, the training abroad of counterparts should have started earlier and have been spread out over a longer time in order to make the Zambian take-over smoother.

An area of concern is that the social atmosphere at the College seems to have changed. Under the former Principals, a more democratic College management system existed. The staff participated in the Principal's decision-making. Subsequent management seems to have been, in this respect, different. This may create some frustration among those of the Zambian staff who have been used to the previous way of College leadership. There are indications that some of the teaching staff are on the move and wish to leave the College, and if this continues, it will definitely mean a loss for the Institution.

### 12.3 Maintenance

One of the most crucial problems for the College in future will be to maintain the standard of buildings and equipment if the funds allocated for this purpose are not sufficient. The College has, through SIDA, been stocked with plenty of spare parts and more is soon expected to arrive. However, the spare parts are of no use if there is nobody at the College who has the relevant skill to repair equipment that breaks down. Most difficult is the maintenance of the CCTV equipment and the Language Laboratory. It may be questioned whether the CCTV should have been installed at all.

### 12.4 The affiliation to UNZA

The goal of the affiliation of the College to UNZA has now been attained. This has two aspects. It brings the TVTC on par with the Copperbelt and Nkrumah Colleges as concerns final diploma and possibility for University studies. On the other hand, it is likely to have made it more difficult for the College to maintain its own identity.

### 12.5 Conclusion

Despite the problems that the project encountered over the years, which have been discussed in this and the previous evaluation, the present evaluation team is of the opinion that the project as a whole has been successful.

## 13. RECOMMENDATIONS

The terms of reference do not ask the evaluation team to come forward with any recommendations. However, there are some points where the team would like to make some suggestions concerning the future development of the College.

Sufficient funds should be allocated to the College for proper maintenance of buildings and equipment. Otherwise the training will deteriorate.

The post as Chief Technician should be filled by a person with qualifications in Telecommunications and Electronics, capable of repairing all sorts of educational equipment at the College, including the CCTV-studio and the Language Laboratory. Without a qualified technician, the CCTV-studio will in future become one of the famous white elephants.

A new Library with reading seats for about 60 students should be constructed, as the original Library was not well planned. Additional books, selected to correspond to the needs of the College, should be purchased.

The mid-term evaluation found that the teachers workrooms in the Administration wing are too small as the number of teachers has increased. The present team suggests that new workrooms for teachers should be constructed in connection with a new Library.

The Principal wants new workshops for woodwork and metalwork to be built. The team cannot support this suggestion, as it may soon be necessary to reduce the number of students at the College in order to stop the over-production of Industrial Arts Teachers. In such a case, there is no need for new workshops.

A closer co-operation concerning educational facilities should be established with the Luanshya TTI and the Mining School as proposed in the Plan of Operation. On the other hand, the team is not of the opinion that the TVTC and the LTTI should merge, unless at the highest management level.

Short courses for host teachers should be arranged during vacations in order to make them aware of the TVTC's educational policy. The duty of a host teacher should also be included in the syllabus for the one-year up-grading courses.

As far as the use of computers in the developing countries is concerned, Zambia seems to be among the most highly developed. Therefore, the time will soon come when it is suitable to introduce the study of computers and training in the use of them at the College. This new syllabus item should first be included only in the Technical Teachers course, and mainly for those who are going to teach at Institutions of Higher Learning such as the Zambia Institute of Technology, Nortec and Evelyn Hone College. These students should have a possibility during their subject methods course to practise at a computer. Therefore, the College should be provided with a micro-computer, connected to an external printer. Some simple programmes should be run.

If over-production becomes a real problem of the College, so that its resources may go unused, all other possibilities to utilize the College should be explored. Among these, there is the possibility of opening the College to students from outside Zambia and perhaps making it a regional center for Industrial Arts and Technical Teacher training. Maybe, also, the College could play a vital role in teacher training for University graduates in technologies.

## A P P E N D I C E S

## TERMS OF REFERENCE

Swedish Mission to Zambia for the evaluation of the Technical and Vocational Teachers College (TVTC), Luanshya, ZambiaBackground

In June 1973 the Governments of Zambia and Sweden signed an Agreement for co-operation in establishing a Technical and Vocational Teachers College in Luanshya with the following main objectives:

1. To make Zambia self-sufficient of vocational, commercial and industrial arts teachers for trades training institutes and secondary schools, before the end of the Third National Development Plan 1981 and to commence the replacement of expatriate staff at the technical institutes with Zambian staff;
2. To co-ordinate the training of technical, vocational, commercial and industrial arts teachers by creating a new institution, recognized by the Institute of Education of the University of Zambia but with its own identity as to structure, level and standard;
3. To build technical and vocational teacher training in Zambia on a practical and industrial foundation which will ensure that future students are provided with an appreciation of the vocational environment and an understanding of the needs for the development of the country;
4. To ensure that technical and vocational teaching in Zambia is done in accordance with modern and internationally accepted methods of teaching including the use of teaching aids and progressive techniques adapted to the needs of Zambia.

The targets for the TVTC as outlined in the Plan of Operation are as follows:

1. The School

Establishment of a Technical and Vocational Teachers College in Luanshya for 320 resident students adjacent to the existing Trades Training Institute (TTI) and partly using the facilities of the TTI as well as those of the neighbouring Mining School;

Establishment of a Building Trades Department within Luanshya TTI, emphasizing concrete work, brick laying, plumbing, carpentry, painting and decorating. Facilities at the TTI combined with facilities available at the neighbouring Mining School will then be suitable



for teaching practice purposes as well as skill training.

## 2. Educational Content

Implementation of a programme for technical, vocational, commercial and industrial arts teacher education and training of instructional aids technicians.

The annual output of the programme is expected to be the following:

Technical Teachers	20
Vocational Teachers	40
Commercial Teachers	60
Industrial Arts Teachers	60
Instructional Aids Technicians	10

Implementation of training, up-grading and refresher courses for the following categories:

In-plant training instructors  
In-service technical and vocational teachers  
Principals, inspectors and supervisors

Organization of training for skill up-grading of future vocational teachers.

## 3. Educational Skill

Theoretical knowledge of own teaching area.

Practical knowledge of own teaching area.

Orientation towards initiative, creativity and productive work.

Improvement of the quality of vocational and technical training by providing functional teaching premises and instructional aids adapted to new methods, co-operation with industry and other employers, research and development work and evaluation of training results.

## 4. Zambianization

Implementation of a Staff Development Programme for the College aiming at having a fully competent Zambian staff prepared to take complete responsibility for the running of the College by the end of the Third National Development Plan 1981.

## Members of the Evaluation Group

The evaluation shall be carried out jointly. The

evaluation group shall consist of two members appointed by SIDA and two members appointed by the Government of the Republic of Zambia.

Procedure:

The evaluation shall be carried out during a period of three to four weeks in Zambia. Before this period a follow-up of the graduated students shall have started.

Duties:

The duties of the evaluation group are:

1. to evaluate the present status of the TVTC, Luanshya, according to the Plan of Operation and to the objectives and targets set out there-in;
2. to give particular attention to the following aspects of the Plan of Operation:
  - (a) Physical facilities - building and services
  - (b) Instruction equipment
  - (c) Training programme curricula
  - (d) Instructional staff and support staff
  - (e) Student flow and performance
  - (f) Capital and recurrent budget
  - (g) Advisory committee
  - (h) The relation between teacher needs and capacity of College
  - (i) The relevance of the objectives

Report

The report shall be prepared during the stay in Zambia of Swedish Team members and be presented in draft form to the Government of the Republic of Zambia and to SIDA at the end of the stay.

Members of the evaluation team

Members appointed by SIDA:

Mr. Olof S. Eklöf, Dr.Sc. (Uppsala Univ.), Principal of  
Fyris Technical High School, Uppsala, Sweden

Mrs. Karin M. Ruuth-Bäcker, M.A. (Gothenburg Univ.), ILO  
Consultant, Amman, Jordan

Members appointed by the Government of the Republic of Zambia:

Mr. John Fisher, B.Sc. (London), A.C.E. (Oxford), Assistant  
Director (Curriculum and Evaluation), Department of  
Technical Education and Vocational Training, Lusaka

Mr. Martin K. de Beer, M.Sc. (Electrical Engineering), (Univ.  
of Hawaii, USA), Principal of Zambia Institute of  
Technology, Kitwe

Mr. Eklöf was appointed team-leader.

LIST OF INSTITUTIONS VISITED BY THE MISSION 16 AUG. - 4 SEPT. 1982

<u>Date</u>	<u>Institution</u>	<u>Contact person</u>
16 Aug etc	Department of Technical Education and Vocational Training	Mr R Lubasi, Director Mr E L Phiri, Assistant Director Mr J Mwale, Senior Finance Officer Mr D Mbewe, Inspector Mr H T Chilando, Inspector Mr H A Mweni, Acting Controller of Technology
17 Aug	Copperbelt Province	Mr Y Sililo, Chief Education Officer
17-20, 30 Aug	Luanshya Technical and Vocational Teachers College	Mr L F Bwalanda, Principal
18 Aug	School of Continuing Education, Ndola	Mr P. Mbale, Acting Headmaster
19 Aug	Zambia Institute of Technology, Kitwe	Mr E Ngoma, Vice Principal
	Copperbelt Power Company, Kitwe	Miss M Lukanga, Sectional Training Officer
	Zambia Consolidated Copper Mines (ZCCM), Education and Training Unit (ETU), Kitwe	Mr G Mackay, Manager of Education and Training
	Copperbelt Provincial Head- quarters, Ndola	Mr J Munkanta, Permanent Secretary
	Chamboli Secondary School, Kitwe	Mr E Kabandama, Deputy Headmaster
20 Aug	Northern Technical College, Ndola	Mr S S Sanghera, Principal
	Luanshya Trades Training Institutue	Mr R K Chokwe, Vice Principal
23 Aug	Evelyn Hone College, Lusaka	Mr S M Bayat, Acting Vice Principal
	Lusaka Trades Training Institute	Mr G L Chipopola, Principal
	National Institute of Public Administration	Mr A K Mukela, Principal
24 Aug	David Kaunda Secondary-School, Lusaka	Mrs Masheke, Principal
	Ministry of Education, Lusaka	Mr I Molotsi, Chief Inspector of Schools
25 Aug	University of Zambia, School of Education	Dr R S Kapaaale, Head of the Teachers Colleges' Associateship Unit
28 Aug	Livingstone Trades Training Institute	Mr M S Musole, Acting Principal
31 Aug	Teaching Service Commission, Lusaka	Mr L M A Simukonda, Chairman

TYPES AND NUMBERS OF COURSES RUN AND RUNNING AT THE LUANSHYA TECHNICAL AND VOCATIONAL TEACHERS COLLEGE 1975 - 1983

COURSE	1975 - 1976	1977	1978	1979	1980	1981	1982	1983	NO OF STUDS
J....0 J....JJ....0 J....JJ....0 J....JJ....0 J....JJ....0 J....JJ....0 J....JJ....0 J....JJ....0 J....JJ....0									
TECHN									
12									25
13.01									18
13.02									20
13.03									17
04									17
05									19
06									17
07									14
08									13
09									14
10									19
11									20
12									16
IA INS UPGRAD									228
INS 1W									18
INS 1M									13
EQUIPMT MAINTCE									31
M.M.1									20
IA									20
02									8
03									17
04M									14
05									14
06AM									15
06BM									17
07W									17
08M									17
08W									18
09W1									11
09W2									11
09M1									14
09M2									8
10M1									16
10M2									17
10W									228
11M									13
11W									30
COMM									17
03									14
04									19
05									20
06									19
07									18
08									17
09									17
10									21
11									23
12									16
13									17
14									13
15									17
16									17
17									15
18									263
19									19
20									58

APPENDIX 4

J....JJ....0 January . . . . June July . . . . December  
 TECHN Technical Teachers 10 month Educational course  
 IA INS UPGRAD Industrial Arts In-service Teachers Up-grading course, 10 months  
 EQPT. Equipment Maintenance Course  
 COMM Commercial Teachers course, 24 months  
 IA Industrial Arts Teachers course, 24 months  
 M Metalwork  
 W Woodwork  
 NO OF STUDS Number of students referring to those graduated up till August 1982 and those enrolled in courses ending in 1983



**DEPARTMENT OF TECHNICAL EDUCATION  
AND VOCATIONAL TRAINING**

**MINISTRY OF EDUCATION AND CULTURE**

# ***FACT SHEETS***

## **TEACHER TRAINING (Technical, Commercial, Industrial Arts)**

<b>Programmes:</b>	<b>Diploma</b>
	<b>Duration</b>
	<b>Credential</b>
	<b>Location</b>
	<b>Entry Requirements</b>
	<b>Programme Content</b>
	<b>Employment Opportunities</b>

**As at July, 1980**

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## Commercial Teacher Training

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<b>Programme:</b>	COMMERCIAL TEACHER TRAINING.
<b>Duration:</b>	2 years.
<b>Credential:</b>	Diploma.
<b>Location:</b>	Luanshya Technical and Vocational Teachers' College.
<b>Entry Requirements:</b>	Division III Cambridge School Certificate with a Credit in at least one Commercial subject; OR Four GCE passes, two of which must be English and a Commercial subject.
<b>Programme Content:</b>	<i>Commercial Skills</i> Typewriting; office practice; commerce; accounts; economics; commercial mathematics. <i>Teacher Training</i> Safety procedures; education and psychology; education and sociology; the education system of Zambia; general principles of teaching; practical aspects of teaching; educational aids; teaching practice. <i>Mathematics and Communication Skills</i> , are taught as related subjects throughout the course.
<b>Employment Opportunities:</b>	Successful graduates will be employed by the Ministry of Education to teach in secondary schools. There will always be a continuous demand for qualified commercial teachers as secondary education expands with the development of Zambia's economy, and teachers will enjoy the same conditions of service as other civil servants, including a pension on retirement.

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## Industrial Arts Teacher Training

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<b>Programme:</b>	INDUSTRIAL ARTS TEACHER TRAINING.
<b>Duration:</b>	2 years.
<b>Credential:</b>	Diploma.
<b>Location:</b>	Luanshya Technical and Vocational Teachers' College.
<b>Entry Requirements:</b>	Division III Cambridge School Certificate with at least one Technical subject; OR Four GCE passes, two of which must be English and a Technical subject.

**Programme Content:** INDUSTRIAL ARTS SKILL TRAINING

*Woodwork.*

Construction and planning; fastening and ironmongery; glueing; finishing; machines; stock control; drawing and design.

*Metalwork.*

Benchwork; grinding; turning; shaping; milling; welding; brazing; forging; heat treatment; sheet metal work; art metal work; casting; stock control; drawing and design.

*Technical Drawing.*

Sketching; orthographic drawing; isometric drawing; the circle; solid geometry; regular and irregular polygons; loci of simple mechanisms; the ellipse; horizontal and vertical sections; auxiliary views; lamina; symbols and conventions; intersection; loci; drawing and design.

*Introduction to extra skills.*

Woodwork for Metalwork students and *vice-versa*.

**TEACHER TRAINING**

Safety procedures; education and psychology; education and sociology; the education system of Zambia; general principles of teaching; practical aspects of teaching; educational aids; teaching practice.

*Safety Procedures, Mathematics, Science, and Communication Skills* are taught throughout the course.

<b>Employment Opportunities:</b>	Students will graduate with either Woodwork or Metalwork as teaching subjects. Successful graduates will be employed by the Ministry of Education and Culture to teach in the secondary schools, and they will enjoy the same conditions of service as other Civil Servants, including a pension on retirement.
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## Teacher Training

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<b>Programme:</b>	TEACHER TRAINING.
<b>Duration:</b>	10 months.
<b>Credential:</b>	Diploma. Since the college will be preparing teachers in several different programmes, Diplomas will be awarded which reflect the type of programme and level of attainment.
<b>Location:</b>	Technical and Vocational Teachers' College, Luanshya.
<b>Entry Requirements:</b>	Form V; professional qualifications; minimum of two years' practical work in relevant field; entry test.
<b>Programme Content:</b>	Study skills; introduction to psychology and experimental methods; sociology; educational development in Zambia and other developing countries; administration; planning problems; participants in formal learning; general methods of teaching; curricular aspects; the lesson; the learning environment; resources centres; instructional aids; practical aspects of teaching — teaching theoretical subjects; teaching practical subjects; educational technology; educational measurement; teaching practice.
<b>Employment Opportunities:</b>	Graduates will have been trained in their technical or commercial subject using the most modern methods of teaching. Employment opportunities will vary according to the different vocational or technical fields but there will be openings not only in technical education institutions but also as training officers in industry and commerce.

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DEPARTMENT OF TECHNICAL EDUCATION AND VOCATIONAL TRAININGCONFIDENTIAL INSPECTION REPORT

TEACHER/LECTURER:.....FILE NO. TE/.....

INSTITUTE/COLLEGE:.....

CLASS AND GRADE/LEVEL:.....

DATE OF INSPECTION:.....

SUBJECT:.....

LESSON, OR TOPIC:.....DURATION.....

OBJECTIVES/AIMS:.....

.....

1. ORGANISATION AND PREPARATION(a) Lesson Plans

.....

.....

(b) Teaching Aids:

.....

.....

(c) Classroom/Lab.

.....

.....

2. TEACHING TECHNIQUES(a) Introduction

.....

.....

(b) Presentation

.....

.....

(c) Class Activities

.....

.....

(d) Summary

.....

(2)

(e) Assignments

.....  
.....

3. OBSERVATIONS ON PRESENTATION OF LESSON

(a) Sequence

.....  
.....

(b) Class Response

.....  
.....

(c) Effective Use of Aids:

.....  
.....

(d) Questioning Techniques

.....  
.....

4. THE TEACHER OR LECTURER

(a) Knowledge of Subject Matter

.....  
.....

(b) Class Control and Management

.....  
.....

(c) Personal Qualities

.....  
.....

(d) Effective use of voice

.....  
.....

(3)

GENERAL IMPRESSION

.....  
.....

5. RECORDS

(a) Schemes of Work

.....  
.....

(b) Lesson Plans

.....  
.....

(c) Record of Work

.....  
.....

(d) Continuous Assessment Marks

.....

6. COMMENTS AND RECOMMENDATIONS

.....  
.....  
.....  
.....  
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.....  
.....  
.....

SIGNATURE:.....DATE:.....

TECHNICAL AND VOCATIONAL TEACHERS COLLEGE, LUANSHYA.DEPARTMENT OF EDUCATIONTEACHING PRACTICE LESSON REPORT FOR COLLEGE TUTORS

STUDENT: \_\_\_\_\_ COLLEGE NO. \_\_\_\_\_ DATE: \_\_\_\_\_  
 SCHOOL: \_\_\_\_\_ CLASS: \_\_\_\_\_

## 1. THE LESSON

- (a) Suitability of material
- (b) Accuracy of facts
- (c) Amount taught
- (d) Lesson notes

## 2. TEACHING

- (a) Voice
- (b) English
- (c) Manner and bearing with children
- (d) Effectiveness of methods used and skill in using them
- (e) Teaching aids
- (f) Chalkboard work
- (g) Class organization
- (h) Discipline

## 3. CLASS RESPONSE

- (a) Oral work of children
- (b) Children's written or practical work
- (c) Interest shown by children
- (d) Evidence of learning

## 4. ASSESSMENT

(a) General Comments: \_\_\_\_\_

(b) Grading of Lesson  
 A+ A B+ B C+ C D

Tutor's Signature: \_\_\_\_\_

2.

## EDUCATION DEPARTMENT

## TEACHING PRACTICE HOST TEACHER'S ASSESSMENT

Student teacher: \_\_\_\_\_ Course: \_\_\_\_\_

School: \_\_\_\_\_ Class: \_\_\_\_\_

Subject: \_\_\_\_\_

Topic: \_\_\_\_\_ Date: \_\_\_\_\_

Basic Strengths:

Suggestions for improvement:

(2)

GRADE AWARDED: -

ASSESSED BY: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

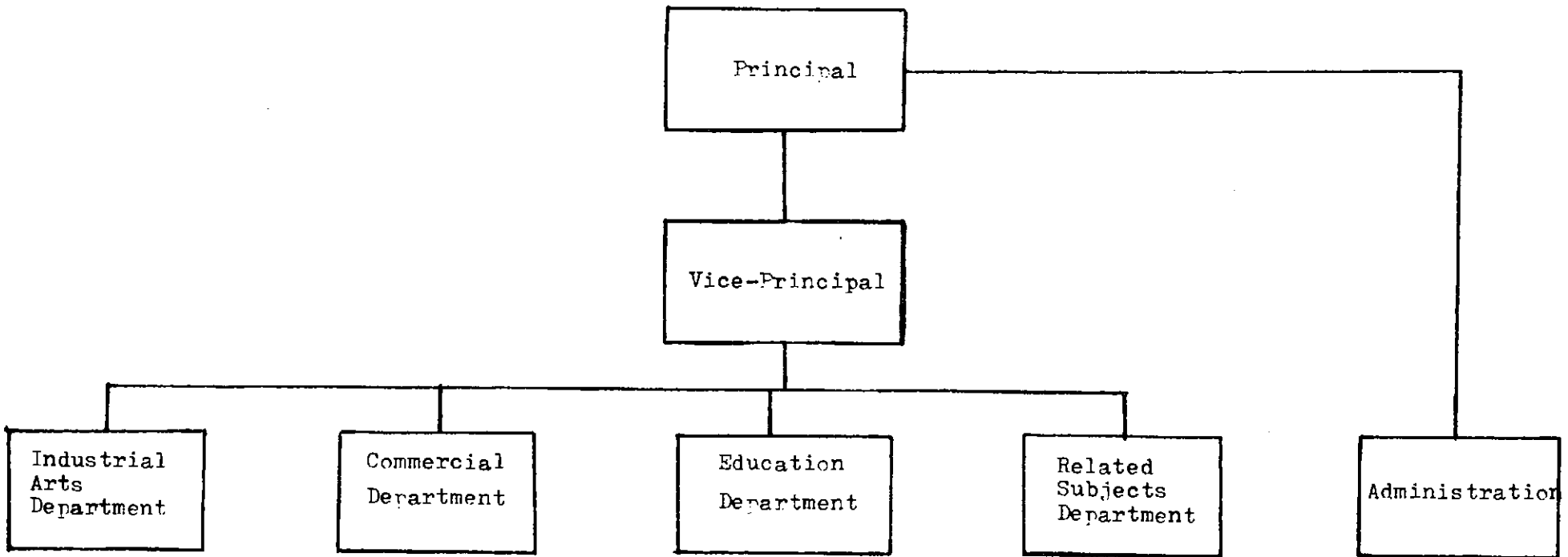
KEY TO GRADING SYSTEM

<u>PERCENTAGE</u>		<u>LETTER GRADE</u>	<u>EXPLANATION</u>
86% and above	=	A+	- Distinction
76 - 85%	=	A	- Distinction
66 - 75%	=	B+	- Merit
56 - 65%	=	B	- Very satisfactory
46 - 55%	=	C+	- Definite pass
40 - 45%	=	C	- Bare pass
35 - 39%	=	D+	- Bare fail.
20 - 34%	=	D	- Fail
19 - 0%	=	E	- Bad fail

SOME OF THE FEATURES TO TAKE INTO ACCOUNT WHEN EVALUATING A LESSON

1. Lesson plan
2. Presentation
3. Class motivation and activity during the lesson
4. Mastery of Subject matter
5. Teaching aids and their use
6. Interaction with the class

Organization chart for the TVTC.

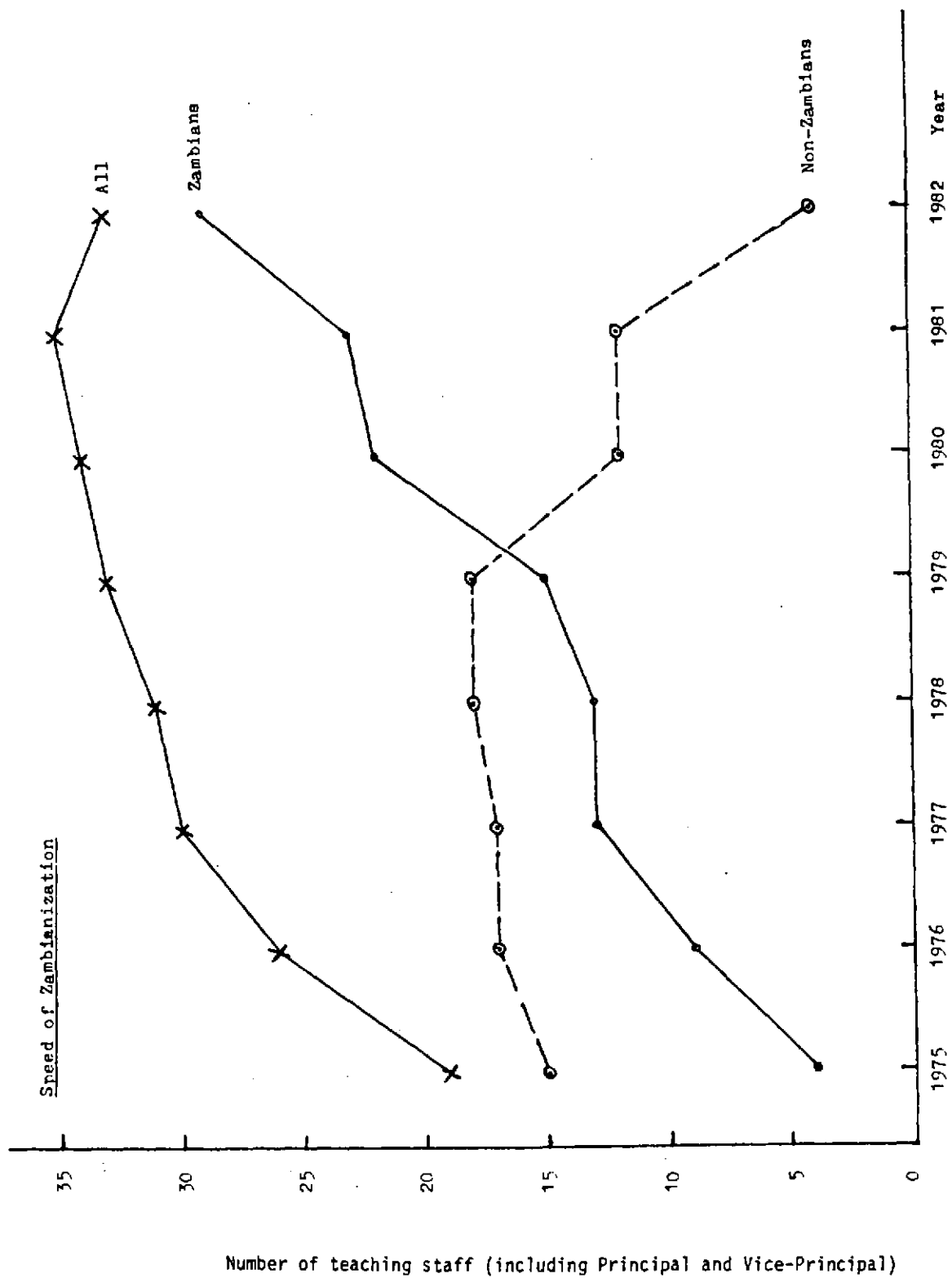




The academic staff from 1975 to 1982

Post	1975		1976		1977		1978		1979		1980		1981		1982	
	Z	NZ	Z	NZ	Z	NZ	Z	NZ	Z	NZ	Z	NZ	Z	NZ	Z	NZ
Principal		1		1		1		1		1		1	1		1	
Vice-Principal	-		1		1		1		1		1		1		1	
Heads of Dept.		3		4	1	3	1 <sup>1)</sup>	3	1	3	3	1	3	1	2	1
Senior Lecturers					2	4	1	2	3	2	5	4	3	3	4	1
Lecturers	4	11	8 <sup>1)</sup>	12	9	9	10 <sup>1)</sup>	12	10	12	13	6	15	8	21	2
Total	4	15	9	17	13	17	13	18	15	18	22	12	23	12	29	4
Grand total	19		26		30		31		33		34		35		33	

1) One of these is on study leave.



## QUESTIONNAIRE TO THE PRESENT STUDENTS AT THE TVTC AUGUST 1982

1 Which course do you belong to?

- ☐ Technical
- ☐ College lecturer
- ☐ Commerce, first year
- ☐ Commerce, second year
- ☐ Industrial arts, first year
- ☐ Industrial arts, second year
- ☐ Other, state which one? ,,,,,,,,,,,,,,,,,,,,,,

2 Why did you apply for teacher training?  
Please answer in your own words!

3 Why did you choose teacher training especially in  
..... (Fill in your course.)  
Please answer the question in your own words!

4 What is your opinion about the lodging facilities at the college?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Bad

5 What is your opinion about the boarding facilities?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Bad

- 6 What is your opinion about the extra-curricular facilities and activities?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Bad

- 7 All the students belong to the Students' Union.  
In your opinion, are the activities of the Union beneficial to the students?

- ☐ Very much so
- ☐ To some extent
- ☐ Very little
- ☐ Not at all
- ☐ I do not know

Please give reasons for your answer!

- 8a List those subjects where, in your opinion, you have been given adequate training.

- 8b List those subjects, where, in your opinion, you are not quite satisfied with the training.

Please give reasons for your answers, both for 8a and 8b.

- 9 If you have had a Swedish teacher during your time at the college, what do you think of his command of the English language?

- ☐ I could understand him without difficulties.
- ☐ It was sometimes difficult to understand him.

- 10 Do you find that the training in the language laboratory has improved your English?
- ☐ Very much so
  - ☐ To some extent
  - ☐ Very little
  - ☐ Not at all
- 11 If you have used the closed circuit television to observe yourself as a teacher, how do you appreciate this training method?
- ☐ It has helped me very much.
  - ☐ It has helped me a little.
  - ☐ It has not helped me at all.
- 12a In your opinion, how has the co-operation been between students and teachers?
- ☐ Excellent
  - ☐ Good
  - ☐ Fair
  - ☐ Bad
- 12b In your opinion, how has the co-operation been between students and other staff?
- ☐ Excellent
  - ☐ Good
  - ☐ Fair
  - ☐ Bad
- 13 This question concerns only those students taking the 24 months' course.
- At present, your skill training and education studies (teacher training) are completely separated. It would be possible to start the teacher training during the skill training phase and consequently extend the skill training over a longer period. How do you think that such an integration would influence the results of the training?
- There will be no change.
  - The training will improve.
  - The training will deteriorate.
- 14 General comments on any other matter
- Write on a separate paper .

QUESTIONNAIRE TO THE STUDENTS AT TVTC 18 August 1982

Question 1      The questionnaire was answered by 29 students altogether.

16 Technical students  
6 Industrial Arts sts {2nd year}  
7 Commercial students {2nd year}

Question 2      Reasons for choosing the teaching profession:

- Being interested in the profession
- Wanting a secure future
- Wanting a financially and socially higher standard
- Wanting to help build the nation
- Being sent by their employers
- Having no other alternative
- Wanting to have time for hobbies (Fortunately, only one gave this reason!)

Question 3      Reasons for choosing to be trained as a

Technical teacher

- Having sufficient subject knowledge
- Helping the Zambian industry by training others
- Being very interested in the specific field

Commercial/Industrial Arts teacher

- Being interested in the subject

Question 4      Opinion about lodging facilities

Excellent (3), Good (2), Fair (1), Bad (0)  
 Technical: 1.2 Commercial: 1.6 Ind. Arts: 2.2  
 Total average: 1.5

Question 5      Boarding facilities

Excellent (3), Good (2), Fair (1), Bad (0)  
Technical: 0.9 Commercial: 1.4 Ind. Arts: 2.0

Question 6      Extra-curricular facilities and activities

Excellent (3), Good (2), Fair (1), Bad (0)  
 Technical: 1.4 Commercial: 1.3 Ind. Arts 2.3  
 Max: 3 Total average: 1.7

Question 7      Are the Student Union's activities beneficial for the students?

Very much so (3), To some extent (2), Very little  
Not at all (0)

Technical 0.4	Commercial: 1.6	Ind. Arts: 2.2
		Total average 1.4

## Question 8

Subjects where the training has been found Adequate (+) and Not quite satisfactory (-) respectively.

Technical teachers (16)

Educational Psychology	14 - 2	+ 12
Educational Sociology	13 - 2	+ 11
Educational System of Zambia	12 - 1	+ 11
General principles of Education	12 - 1	+ 11
Subject methods	9 - 7	+ 2
Educational Aids	5 - 5	- 0
Communication skills	4 - 3	+ 1
Mathematics	3 - 2	+ 1
Political Education	1 - 1	- 0

Commercial teachers (7)

Commerce	7	+ 7
Accounts	6 - 1	+ 5
Office practice	5 - 2	+ 3
Typing	3	+ 3
Economics	2	+ 2
Educational Aids	1 - 2	- 1
Educational Psychology	1	+ 1
Educational System of Zambia	1	+ 1
Educational Sociology	1	+ 1
General Principles of Education	1	- 1
Subject methods	2	- 2

Industrial Arts teachers (6)

Metal/Woodwork	6	+ 6
Communication skills	4	+ 4
Technical Drawing	3 - 2	+ 1
Mathematics	2	+ 2
Educational Psychology	2	+ 2
Educational Sociology	1	+ 1
Educational System of Zambia	1	+ 1
General Principles of Education	1	+ 1
Education Aids	1	- 1
Political Education	1	- 1

## Question 9

Expatriates' command of English

Out of the 29 students interviewed, 22 had had a Swedish teacher. 64% of them had had no difficulties in understanding them.

## Question 10

Improvement of students' command of English through training in the Language laboratory

Very much (3), To some extent (2), Very little (1), Not at all (0)

Technical: 0.6 Commercial: 0.7 Ind. Arts: 2.0

Max 3

Total average: 0.9

52% of the students interviewed had never used the lab.

Question 11

How did you appreciate the Closed Circuit Television training?

Helped me very much (3), A little (2), Not at all (1)

Never used it (0)

Technical: 1.8 Commercial: 1.4 Ind. Arts: 1.2

Max: 3

Total average: 1.7

34% of the students interviewed had never used the CCTV.

**Question 12a**

## Co-operation between students and teachers

Excellent (3), Good (2), Fair (1), Bad (0)

Technical: 1.5    Commercial: 1.9    Ind. Arts: 2.0

Max: 3

**Total average: 1.7**

Question 12b

### Co-operation between students and other staff

Excellent (3), Good (2), Fair (1), Bad (0)

**Technical: 1.5   Commercial: 1.4   Ind. Arts: 2.0**

Max: 3

**Total average: 1.7**

### Question 13

How will an integration of skill training and education studies affect the training? (This question was directed only to the Commercial and Ind. Arts teachers.)

There will be no change 0

The training will improve 6 (2 Comm, 4 Ind. Arts)

The training will deteriorate 7 (5 " , 2 " )

### Question 14

### General comments

4 Technical, 6 Commercial and 5 Ind. Arts teachers commented.

- More skill training needed
  - More emphasis on subject methods
  - Some teachers were negligent
  - Too little utilization of CCTV and Language Lab
  - Expatriates left too soon, and thus
  - Zambianisation has been too fast
  - Administration has deteriorated
  - General upkeep of equipment, toilets, hostels 1)
  - Most teachers cannot operate CCTV
  - Lack in planning
  - Library too small, too few relevant books
  - Need for a qualified technician for maintenance 1)
  - Water shortage
  - Food quality poor
  - Students restricted in expressing their views
  - Students treated "like children"
  - No supply of toiletries, bulbs
- 
- Good relationship students/teachers in Comm Deptmt
  - Good administration
  - Affiliation with UNZA very good
  - Lodging, boarding and other facilities very good
  - Expatriate lecturers very competent and devoted
  - One of the best projects in the country

1) mainly from Technical students



Swedish contribution towards the TVTC (in thousandths of SEK)

Year	1974	1975	1976	1977	1978	1979	1980	1981	1982 (half)	Total
Personnel	76	940	3,255	4,095	4,539	2,654	1,517	729	243	18,048
Equipment	545	840	492	235	292	172	31	71	53	2,731
Buildings	-	6,658	2,744	1,650	-	-	-	1,327 <sup>1)</sup>	200 <sup>1)</sup>	12,579
Scholarships	-	-	-	-	78	386	637	240	269	1,563
Total	621	8,438	6,491	5,980	4,862	3,212	2,185	2,367	765	34,921

1) These amounts may also include some equipment.

**The Education Division at SIDA initiates and implements a large number of studies regarding education and training, especially in SIDA's programme countries.**

**In order to make these studies more readily available, they will be published in a series called "Education Division Documents".**

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