



Feasibility Study

on the Establishment of an

International Centre for Technical and Vocational Education

Summary	1
1 Introduction	2
2 Scope of technical and vocational education	3
2.1 Definition of technical and vocational education in the Convention	3
2.2 Relevant aspects of the Convention	4
3 Unesco's activities in technical and vocational education; interaction and complementarity with other organizations	5
3.1 Unesco's areas of work	5
3.2 Unesco and ILO profiles in technical and vocational education and training	6
4 Justification and possible objectives of an International Centre for Technical and Vocational Education	8
4.1 Justification	8
4.2 Programme Areas	9
4.3 Modalities of work	11
5 Priority areas of action	11
6 Development of the Centre	12
7 Management of the Centre	12
8 Cost: initial phase	13
9 Conclusions	14
 Annex	
I Resolution 1.21 adopted by the General Conference at its 25th Session	15
II Convention on Technical and Vocational Education (Articles 1 - 6)	16
III Information on the ILO Programme	18
IV Tentative estimate of annual cost of operation	20
V Reference Documents	21



Feasibility Study on the Establishment of an International Centre for Technical and Vocational Education

Summary

This Study

- analyses the feasibility of an International Centre for Technical and Vocational Education under the auspices of Unesco;
- identifies possible objectives, programme areas, structures and modalities of operation, and
- examines the complementarity of its possible tasks with those of other international institutions.

The situation prevailing in the developing world has been duly considered, particularly when identifying possible programme areas and modalities of work. The *Convention on Technical and Vocational Education* approved by the 25th General Conference of Unesco provides a general framework for the Study.

It concludes that **the establishment of an International Centre for Technical and Vocational Education for the purpose of promoting and supporting the development of national technical and vocational education systems is both feasible and highly desirable.**

Five **programme areas** are identified:

- **Exchanges of ideas and experience, and studies on policy issues**
- **Strengthening of national research and development capabilities**
- **Promotion of innovation in staff development**
- **Facilitating access to data bases and documentation**
- **International co-operative action,**

Priorities for action and modalities of operation are suggested.

Lastly, consideration is given to questions pertaining to institutional arrangements, management, financing, and criteria for location of a possible International Centre for Technical and Vocational Education.

1 Introduction

Technical and vocational education is normally furnished within education systems, while training aimed at development of skills and capabilities directly related to work situations is often imparted by specialized governmental and public institutions (apprenticeship services, ministries other than education, etc.) or by the enterprises themselves. In fact, enrolment in technical and vocational education constitutes a considerable percentage - often higher than 25 % - of the total in secondary education. Its increase is faster than for other streams; according to Unesco statistics, enrolment in technical and vocational education has almost doubled in the period from 1975 to 1986.

The importance of technical and vocational education is enhanced by increasing social demand and the ever-growing technological component of human activities. In the past few decades productive activities have evolved significantly, mainly because of automation of operations, robotization, computerized control, development of new materials, more efficient use of energy, and innovative organization patterns of production. This evolution entails a general shift from manual skills towards technical knowledge, and the advent of new fields of competence at all levels. Social demand calls for emphasis on job creation and training for self-employment. In all, significant changes in the occupational profile take place continuously, coupled to expansion of technology-based activities.

Technical and vocational education has to evolve and expand accordingly, and this poses problems of various kinds. Addressing them is more difficult in developing countries than in the industrialized world: awareness of technical advances and their impact on technical and vocational education and on qualifications of the human resources required may be not the same; enrolment in technical and vocational education in developing countries expands at a faster pace, and the human and material resources are often insufficient or not up to standards.

The considerable inertia of most education systems exacerbates the problem, although there is growing awareness that

- flexible schemes of education and training are more adaptable to meet evolving demands than traditional approaches;
- broad, conceptual understanding of the techniques and skills proper of each technical field or trade facilitates occupational mobility and continuing education;
- close interaction between technical and vocational education and the productive sector is nowadays indispensable to ensure relevance of the education and training processes and facilitate integration of the school leavers in the world of work;
- research on the above matters and action on the corresponding issues require awareness of the problematique, availability of information and data, and the possibility of drawing from existing experience elsewhere;
- continuing staff development is essential to keep up with an evolving situation.

Unesco has been active in the field of technical and vocational education for more than 30 years. Its programme has evolved according to changes in science and technology, socio-economic realities, and human resources development policies in Member States. This evolution has been made possible by the continuous flow of information and data from the countries, implementation of field projects, studies etc.

In 1987, Unesco held its first **International Congress on Technical and Vocational Education**. At this congress it was suggested that

"... an international plan of action be drawn up for the development of technical and vocational education and for promoting international co-operation in this field"¹, and

"... Unesco should support the establishment of an international centre for research and development in technical and vocational education. Such a centre could, among other things, collect and categorize relevant information concerning technical and vocational education in the various Member States, establish a data base of knowledge items and references in the

¹ Final Report on the International Congress on the Development and Improvement of Technical and Vocational Education, Berlin, German Democratic Republic, 22 June - 1 July 1987, para 69

*various disciplines and fields and create an international computer network to promote effective use of this information ..."*².

Based on the suggestions put forward at the 1987 Congress, and following a recommendation by the Executive Board at its 131st Session in 1989, the **General Conference** at its 25th Session in 1989 adopted a resolution inviting the Director-General

*"... to carry out ... a feasibility study on the establishment of an International Centre for Technical and Vocational Education".*³

At the same session, the **Convention on Technical and Vocational Education** was adopted. This standard-setting instrument provides a coherent set of concepts and guidelines for the development of technical and vocational education in Member States, in particular for

- the assumption of public responsibility for the framing of policies and the definition of strategies for technical and vocational education, considered to be an integral part of the education system (*Article 2*); and
- the promotion of international cooperation (*Article 6*).

The concomitance of the adoption of the Convention and the resolution calling for the Feasibility Study makes it natural to draw from the Convention a number of concepts of relevance in assessing the feasibility of an International Centre for Technical and Vocational Education. Thus, the Convention will be referred to in this study whenever appropriate.

2 Scope of technical and vocational education

2.1 Definition of technical and vocational education in the Convention

Article 1 of the Convention furnishes a broad definition of technical and vocational education:

*"technical and vocational education' refers to all forms and levels of the educational process involving, in addition to general knowledge, the study of technologies and related sciences and the acquisition of practical skills, know-how, attitudes and understanding relating to occupations in the various sectors of economic and social life."*⁴

It further indicates that the Convention

*"applies to all forms and levels of technical and vocational education provided in educational institutions or through co-operative programmes organized jointly by educational institutions, on the one hand, and industrial, agricultural, commercial or any other undertaking related to the world of work, on the other".*⁵

After the broad depiction of the concept of technical and vocational education quoted above, and the reference to the agents responsible for providing it, Articles 2 and 3 of the Convention refer to formulation of policies and the corresponding strategies for their implementation and to the elements that constitute appropriate framework for development of technical and vocational education.

It is worth noting that Article 1 (b) introduces explicitly the concept of **co-operative programmes between educational institutions and the productive sector**. In fact, systematic, *institutionalized* interaction between education and training on one hand and the world of work on the other can only have positive returns for both sectors. In each particular case, the prevailing context conditions the way in which interactions may take place.

² para 123

³ Resolution 1.21 adopted by the General Conference at its 25th Session. The full text of Resolution 1.21 is given in Annex I.

⁴ Article 1 (a)

⁵ Article 1 (b)

2.2 Relevant aspects of the Convention

A broad concept of technical and vocational education

For the purpose of this study, it is pertinent to note that:

- *Firstly*, the term *technical and vocational education* refers to **education processes of all types and at all levels** (from secondary to post-secondary level) intended to provide technological knowledge and practice-oriented qualification related to the world of work.
- *Secondly*, technical and vocational education comprises **formal and non-formal education**, the latter through co-operative programmes with the productive sector, that is, closely related to the formal approach proper of an institutionalized technical and vocational education system.
- *Thirdly*, imparting technical and vocational education implies **responsibilities on the part of government agencies, and also of private undertakings** (industrial/craft, commercial, service, agricultural, etc.), particularly in so far as programmes catering to the occupational market are concerned.
- *Fourthly*, technical and vocational education is a **life-long undertaking** of particular relevance, aimed at development of individuals and societies in a world in continuous and dynamic evolution, particularly in the field of technology.

This fourth remark points at the fact that technical and vocational education caters not only to objectives stemming from occupational considerations, but also to the **development of the individual in increasingly technology-oriented societies**. In fact, technology is nowadays an aspect of culture, and as such it is finding a place in general education in many countries.

Figure 1 presents succinctly the scope of technical and vocational education as depicted above:

	Range of technical and vocational education	
	from ...	to ...
level	secondary level	post-secondary level
type	formal	non-formal
responsibility	government	co-operative government/private
individual life span	initial training of young people	advanced technical training of adults
educational objective	individual development	occupational capabilities

Figure 1
Breadth of scope of technical and vocational education

Basic elements for the system design and development of technical and vocational education systems

The contents of technical and vocational education, the internal organization of study courses, articulation with other education and training, etc. may differ considerably from one case to another. Nonetheless, the Convention, in Articles 2 and 3, provides basic guidelines for optimizing design of systems of technical and vocational education, setting the ground for their further development within the context that may prevail in each case. For the purpose of this study, the following points are worth noting:

- **Policies** concerning technical and vocational education should be set **within the framework provided by education policies in general**;
- Integration with other types of education implies **horizontal and vertical articulation**, that is, ensuring *permeability* stemming from transfer mechanisms among the various streams and levels;
- **Introduction to technology and to the world of work** within the context of general education facilitates mobility;
- **Equal access for all and social openness** and consideration of the special needs of disadvantaged groups should be ensured;
- **Orientation of technical and vocational education** according to the specific socio-economic context prevailing in each case hinges *inter alia* on:

- **adaptability** to follow the inevitable evolution of the occupational profiles and market;
- incorporation of **new knowledge and technical developments**;
- possibility of **fostering employment** and enabling self-employment;
- response to **cultural, social and ecological conditions**;
- **Training of teaching staff**, instructors etc. and their updating become fundamental in implementing actions related to the above, a fact which is emphasized in Article 5 of the Convention.

International co-operation is given prominent attention in Article 6, in the light of its relevance in fostering and contributing to development of technical and vocational education. Co-operation may concern information, use of international technical standards, equivalence of studies, exchanges involving specialists and students, transfer of technology and endogenous development.

3 Unesco's activities in technical and vocational education; interaction and complementarity with other organizations

In analysing the scope of technical and vocational education stemming from the text of the Convention, Chapter 2 above provides an overview of the principles underlying Unesco's action in technical and vocational education. The Convention draws from experience accrued in some 40 years of exchanges with Member States and of operation of field projects; and from the intense work carried out in preparation and implementation of the *Recommendation concerning Technical and Vocational Education* (1962) and the *Revised Recommendation* (1974).

Therefore, only an overview of the structure of Unesco's programme, a summary account of activities carried out recently, and some considerations about complementarity with activities of other inter-governmental organizations will be included in this Feasibility Study. It is particularly important to avoid overlapping with the activities of other organizations in order to ensure optimal use of the limited resources available, and facilitate co-operative efforts involving the possible future Centre. These considerations will mainly refer to the International Labour Organisation (ILO). In fact, Unesco and ILO are the only specialized agencies of the United Nations system covering technical and vocational education or training in a broad, all-embracing way. Other organizations devote their training efforts to their specific fields of competence, such as health, agriculture, aviation etc.

3.1 Unesco's areas of work

The activities undertaken by the Organization concern:

- **innovation of contents, methods and structures**
 - symposia on different concepts of technical and vocational education,
 - studies and pilot projects to promote co-operation between the public and the private sector in technical and vocational education,
 - consultations on the interaction between general education and the world of work,
 - production of prototype curricula, teaching guides and didactic support material;
- **training of personnel**
 - teacher training,
 - curriculum renewal and development,
 - management of schools, laboratories and workshops,
 - use of new methods and technologies;
- **development of national infrastructures**
 - establishment of institutions,
 - facilities, laboratory and workshop equipment,
 - management at system level;
- **exchange of experience, dissemination of information and data**
 - studies on selected aspects of technical and vocational education,
 - comparative studies and surveys,

- production of a periodical on technical and vocational education,
- statistical data;
- **standard-setting instruments**, in particular preparation and application of the *Revised Recommendation concerning Technical and Vocational Education* (1974) and the *Convention on Technical and Vocational Education* (1989);
- in general, **promotion of international co-operation** in technical and vocational education.

At present, these kind of activities fall mainly under

Major Programme Area I:	<i>Education and the Future;</i>
Programme I.2:	<i>Education for the Twenty-first Century;</i>
Subprogramme I.2.3:	<i>Education and the World of Work.</i>

The approach followed corresponds to the general policy and strategy established in Unesco's **Third Medium-Term Plan** (1990-1995). Under *Objectives and Strategy*, Programme I.2, para 46, the Plan reads:

"The concern for continuity and innovation is present in both education for quality of life and education for employment. Individuals and groups should be equipped to adapt to rapidly changing economic and social conditions and to deal with the evils that threaten them. While creating methods that can be put into practice immediately, education should in turn adapt to already foreseeable economic, socio-cultural, technological and scientific changes by constantly adjusting and renewing its modus operandi and its curricula."

Under *Actions*, para 54 reads:

"As regards education and the world of work, while work experience in general education and initial technical and vocational education remain important areas, retraining and continuing education will be stressed during the period of the Third Medium-Term Plan. This will be conducted in close co-operation with ILO and FAO and in conjunction with the needs of different economic sectors. In the light of changing employment needs, special attention will be given, for example, to curriculum reform, to the development of guidance and counselling services, to renewing curricula in technical and vocational education, to developing materials and to training specialized educational personnel, with emphasis on the use of new technologies. The exchange of information and co-operative regional and subregional projects will be supported in conjunction with the existing networks for educational innovation."

It is worth noting that activities related to technical and vocational education are also undertaken within other programme areas, such as educational planning, right to education, new information and communication technologies in higher education, science and technology as such, introduction of technology in general education, and many others. In addition, more than 50 field projects have been implemented and 21 are in operation. They are usually financed from extra-budgetary sources, and their magnitude is often considerable. Co-operation with development banks and funds also implies furnishing expertise for identification, preparation, evaluation and execution of projects they may finance.

3.2 Unesco and ILO profiles in technical and vocational education and training

ILO's **Medium Term Plan** 1990-1995, under the section on **Training**, establishes that one of the main objectives pursued shall be⁶

"... to prepare men and women, including handicapped groups, for productive work by offering them opportunities to improve their knowledge and skills and to adapt to a rapidly changing work environment."

The Draft **Programme and Budget for 1992-93**, under the Major Programme "**Training**", sets four **main lines of work**:

- management development,
- vocational training,
- training policies, and
- vocational rehabilitation.

A more detailed reference to the ILO programme is attached as Annex III. It also includes information on the programme components implemented by the **International Centre for Advanced Technical and Vocational Training** in Turin, with which Unesco has co-operated for more than 20 years.

There is a multitude of working relations between Unesco and ILO. For the purpose of this Feasibility Study, it should be noted that the two organizations, more than 30 years ago, determined their terms of **cooperation** in the field of technical and vocational education. The agreement basically assumes that the primary interest of ILO centres on training in factories, workshops etc., whereas Unesco's primary concern is technical and vocational education which takes place within education systems (cf. Annex III).

The description of areas of interest of the two organizations - based mainly on the criterion of the place where education/training is imparted - does not reflect the reality of existing technical and vocational education systems in Member States, nor is conducive to development of concepts of education/training based on systematic learning in both schools and enterprises.

Both organisations contribute to the development of human resources, but their approaches differ. Figure 2 illustrates that in the field of technical and vocational education/training,

- **ILO** centres primarily on **employment/training issues**, whereas
- **Unesco's** primary concern is **education**.

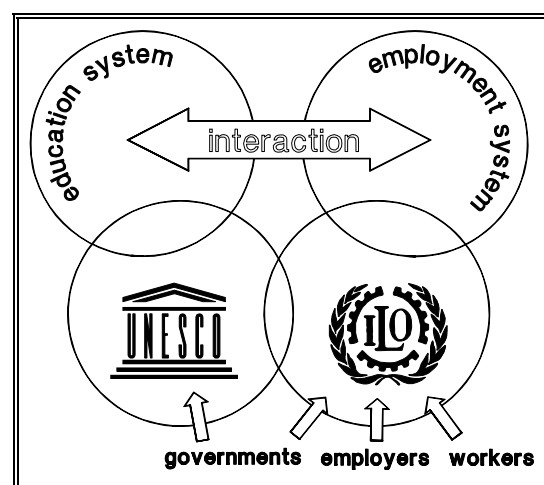


Figure 2
Major concerns of Unesco and ILO
in technical and vocational education

These observations are *firstly* substantiated by a comparison between the **normative instruments** of both organizations:



 Convention on Technical and Vocational Education Article 2 (1)	 Convention 142/ Recommendation 150 concerning Vocational Guidance and Vocational Training in the Development of Human Resources Article 1 (1)/ Article 4 (1)
The Contracting States agree to frame policies, to define strategies and to implement, in accordance with their needs and resources, programmes and curricula for technical and vocational education designed for young people and adults, within the framework of their respective education systems , in order to enable them to acquire the knowledge and know-how that are essential to economic and social development as well as to the personal and cultural fulfilment of the individual in society .	Each Member shall (Members should) adopt and develop comprehensive and co-ordinated policies and programmes of vocational guidance and vocational training, closely linked with employment , in particular through public employment services .

Figure 3
General orientation of Unesco and ILO
according to their standard-setting instruments in technical and vocational education

Secondly, information contained in their respective **programme documents**, complemented by discussions held with responsible officials indicates that the scope of their programmes and the concepts on which they are based are substantially different. Figure 4 compares the profiles of Unesco and ILO.

The texts are necessarily succinct and cannot reflect fully the objectives, contents, etc. of these programmes:



Elements of technical and vocational education/training		
Objectives	personal and cultural fulfilment; broad-based preparation for the world of work	training for gainful or self-employment; development of managerial resources for the productive sector
Contents and structures	balanced development of general and technical and vocational education; introduction of technology into general education; complementary general education for those undergoing on-the-job training; articulation within the education system	response to employment needs; improvement of skills of the labour force; modular training; accelerated training
Agents	education/training within the education system and through co-operative programmes	training by employers and apprenticeship services
Adaptation of structures, contents, methods	interaction between education and the world of work; assessment of science and technology advances; trends in pedagogical developments	assisting employers' and workers' organizations to develop training policies; evolution of tooling equipment and work organization
Qualification and further education of teaching staff	participation of teaching staff in research and development	advanced training; training of trainers

Figure 4
Comparative profiles of Unesco and ILO approaches

Summing up, the work of the two organizations is closely related, in the sense that both of them deal with preparation of individuals to face the world of work and to integrate them into occupations contributing to socio-economic development of the countries concerned. However, the emphasis is different, the role of the respective partners is not the same, the institutional frameworks for their actions differ, the issues addressed also. Because of their shared interests, the two organizations co-operate whenever the activities envisaged so require.

4 Justification and possible objectives of an International Centre for Technical and Vocational Education

4.1 Justification

Reference has been made in the Introduction to the growing demand for technical and vocational education. Special emphasis has been laid on the nature and pace of technological advances, which have important effects on the occupational profile everywhere, and therefore on qualitative and content aspects of the education/training process. The needs thus created for modernization and expansion of technical and vocational education, especially in the developing countries, call for increased national and international efforts. The *Convention*, on which Chapter 2 above is based, provides the conceptual foundation and guiding principles for the development of this type of education and training. Article 6 indicates priority areas for international co-operation.

Chapter 3 above gave an account of the work carried out by Unesco. However, certain specific areas (exchanges and networking, co-operative training, research and development) need to be further developed, for which mobilization and co-ordination of additional technical and financial resources will be required. An appropriate institutional framework needs to be set up in order to provide the optimal structural, logistic and administrative adaptability and the necessary dynamics for this action.

Taking into consideration

- the specific profile of Unesco's work (Chapter 3),
- the need for increased international co-operation and
- the dynamics which can be originated by a tailor-made institutional framework,

it is found that **the establishment of an International Centre for Technical and Vocational Education for the purpose of promoting and supporting the development of national technical and vocational education systems is both feasible and highly desirable.**

4.2 Programme Areas

Development of technical and vocational education within a given context hinges on properly addressing **policy and delivery issues**. The first concern framework aspects such as legislation, structure, social aims, distribution of responsibilities including social partners, target population, etc. The second concern the educational process and all that makes it relevant and productive, such as study plans, balance among subjects, curricula, in-service and practical components, staff development, and management at institutional level. In principle, the Centre should work with key national institutions and personnel involved in policy and decision-making, research, innovation and staff development.

The programme areas proposed are:

	Programme Area
A	Exchanges of ideas and experience, and studies on policy issues
B	Strengthening of national research and development capabilities
C	Promotion of innovation in staff development
D	Facilitating access to data bases and documentation
E	International co-operative action

Figure 5
Proposed Programme Areas for an
International Centre for Technical and Vocational Education

The prerequisites for the international interaction implied in this set of programme areas are outlined in Article 6 of the Convention.

One of the reasons to include research in technical and vocational education as a separate item is that this area has been under-supplied by international organizations.

One of the major thrusts of the Centre would be the promotion of **application of research to system development and of international co-operation** in this area. This activity requires **access to an improved data base** and expertise on the problems connected with technical and vocational education in Member States.

Substantive content of the Centre's Programme Areas

An outline of the Programme Areas set forth in Figure 5 is given below; Figure 6 (Section 4.3) refers to possible modalities for implementation.

A Exchanges of ideas and experience, and studies on policy issues

The Centre could constitute an important forum where countries facing similar questions and problems could engage in a direct exchange of ideas and experience and learn from one another.

National policies would be given additional support by the organization of international conferences on selected subjects related to development of technical and vocational education systems, such as:

- research policies in technical and vocational education,
- framework aspects of system development,
- models of curriculum development,
- promotion of access of women to technical and vocational education,
- consideration of science and technology advances and their effect on occupational profiles,
- professionalization of technical and vocational education personnel.

B Strengthening of national research and development capabilities

The focus would be placed on subjects such as collection and utilisation of statistical data, surveys, case and comparative studies, introduction of technology into general education, preparation of training modules, design and assessment of pilot projects, etc.

In the medium term it is recommended to intensify development of staff capabilities and material capacities for the implementation of national research in technical and vocational education in Member States, particularly in the developing world.

To this effect, the Centre would contribute to

- development of infrastructures,
- basic and continuing studies for researchers,
- implementation of research projects of regional scope,
- evaluation of performance of the teaching process,
- dissemination of research findings,
- utilization of software and hardware.

C Promotion of innovation in staff development

Seminars, short intensive courses, workshops, and study visits for high level staff would be considered under this programme area, focusing on delivery aspects, such as

- application of new technologies in education/training, e.g. computer assisted instruction, etc.
- curriculum development and evaluation,
- productive activities linked with study/training,
- school laboratory and workshop management,
- preparation of teaching/training materials,
- assessment of practical training, and
- introduction of innovations in methodology, e.g. modular approach.

Existing facilities would be utilized, to the extent possible, in co-operation with other specialized institutions.

D Facilitating access to data bases and documentation

Data on qualification requirements, target groups, contents, educational regulations, legal texts and possibly curricula and syllabi, etc. of technical and vocational education are still inadequate in numerous countries, particularly in the developing world. Frequently the data stored in industrialized countries or by international institutions are not readily available or accessible in the developing countries.

For this reason, the Centre would facilitate

- access to data available on technical and vocational education according to specific needs of the countries concerned,
- interpretation and application of data on subjects relevant to development of technical and vocational education.

The Centre could perform an international documentation and clearing house function in close collaboration with other institutions such as Unesco's International Bureau of Education, ILO's centres, etc. The reports and documents produced by the Centre would be disseminated world-wide. An important aim of this action would be to raise awareness of policy and decision makers.

The international technical and vocational education periodical published by Unesco could perform an important function by providing information and abstracts on relevant projects and problem solutions originating in different language areas. This would be a contribution towards overcoming the limitation of technical cooperation due to language barriers.

E International co-operative action

Implementing Programme Areas A to D implies international exchanges. In addition, from both a national and an international perspective, it is proposed to further the inter-linking of existing capacities, forming specialized networks.

These networks could deal with subjects such as

- initial and continuing technical and vocational education programmes,
- co-operative research, pilot projects, and training,
- the transfer of structures, models, teachware and related experiences.

4.3 Modalities of work

Some possible modalities of work and instruments are listed in Figure 6:

	Programme Area	Modalities/Instruments
A	Exchanges of ideas and experience, and studies on policy issues	<ul style="list-style-type: none"> • Comparative studies on technical and vocational education systems • Symposia on planning and policy issues • Assessment projects • Expertise, e.g. on cost-effectiveness
B	Strengthening of national research and development capabilities	<ul style="list-style-type: none"> • Research planning: topics, main areas, problems • Development and dissemination of instruments for evaluation • Fund for financing research projects • Research scholarships • Joint ventures in research
C	Promotion of innovation in staff development	<ul style="list-style-type: none"> • Pilot projects for basic/continuing training of technical and vocational education researchers • Development of schemes for the training of teaching staff in co-operation with the productive sector • Promotion of mass media in staff development • Dissemination of model teaching aids • Institutionalization of staff development
D	Facilitating access to data bases and documentation	<ul style="list-style-type: none"> • Counselling national institutes on the possibilities of utilizing existing services in the host and other countries • Electronic information network (interlinked with regional centres, data telecommunication systems etc.) • Modern information techniques (mailbox, data telecommunication etc.) • Technical documentation and information service on legislation and regulations governing technical and vocational education • Documentation, (multi-lingual) processing and distribution of materials etc.
E	International co-operative action	<ul style="list-style-type: none"> • Promotion of exchange of specialists and of material; • Promotion of co-operative projects for developing national technical and vocational education research resources • Periodical on international developments in the different programme areas • Promotion of co-operative training and pilot projects • Networking of co-operating national institutions • Fund raising for project implementation

Figure 6
Proposed modalities and instruments to be applied in the different Programme Areas

5 Priority areas of action

Underlying activities

Because of the nature of the Centre's objectives, certain activities should be undertaken on a continuing basis. This is the case, among others, of:

- exchanges at policy-making level (within Programme Area A) that will allow the Centre to have direct inputs from the countries, and therefore help in perceiving their problems and approaches; field activities may also be generated, and further co-operation among countries would ensue;

- mobilization of technical and financial resources (within Programme Area E) which is fundamental for the Centre's development and in making possible to undertake those activities justifying preferential attention. Among these, establishment of networks (also within Programme Area E) should be started as early as possible, particularly aimed at setting up the infrastructures required to promote co-operative activities, exchange of data, etc.

The activities referred to above would quickly build up the international character of the Centre; they require comparatively modest resources, and will be instrumental in implementation and even generation of other activities.

Programme Areas

It is recommended to undertake the implementation of Programme Areas B (Strengthening of national research and development capabilities) and D (Facilitating access to data bases and documentation) as soon as possible, given the importance of the ensuing application for the development of technical and vocational education systems.

Building up substantive competence and structures at the Centre calls for systematic, sustained efforts in order to enable the countries to reap tangible benefits from them. The most important ones would be the establishment of information data bases (which in turn calls for *dedicated* networking), and action related to strengthening national research capabilities. The latter may lead to useful application of results in the countries, at both structural and delivery levels.

Activities such as staff development (Programme Area C) are fundamental for developing countries, to improve qualitative and delivery aspects, that is, the efficiency of education/ training processes.

Execution depends on factors such as substantive interrelation among the activities, interest of the countries concerned and co-operative mechanisms for implementation, and availability of human and financial resources.

6 Development of the Centre

The initial phase of this international project, for a period of three to four years, could be started in 1992. Unesco would negotiate with Member States to host this project - closely linked with an appropriate national institution concerned with research and development in technical and vocational education - and to provide physical facilities as well as technical and financial support.

During this period, a number of priority activities - including the establishment of a network - could be undertaken, and negotiations would be started to mobilize financial and technical resources. After two to three years, the project would be evaluated with a view to the establishment of a possible Centre. This initial phase should furnish elements relative to substance, management and programme development.

7 Management of the Centre

Some of the questions pertaining to the establishment and management of the Centre will be dependent on decisions to be taken by the Director-General and the General Conference. Others will to a certain extent be negotiable with the host country or institution. Again other questions will depend on the resources that can be provided for the operation of the Centre.

Following the pattern of other international institutes operating under the aegis of Unesco, the Centre would be managed by a Director and guided by an advisory body, whose nature, composition and functions would be defined at the time the Centre is established.

Some considerations are given below as to the management, finance and location of the Centre. Although some ideas, guidelines and criteria have been developed, it would be inappropriate at this stage to propose too detailed a concept and structure for the management of the Centre.

Management

The project should, within the framework provided by Unesco, be carried out under the responsibility of a **Director** who would:

- administer the Centre, within the general mandate invested in him or her by the Director-General of Unesco,
- propose to the Director-General a draft Programme and Budget on a biennial basis,

- set up a work plan for the activities foreseen under the Programme and Budget, and
- report to the Director-General on programme implementation and results obtained.

An **advisory body** would deal with matters submitted by the Director-General to its consideration, such as general orientation of the programme, priorities and modalities of operation, new lines of action, etc.

Staff

The staff for the initial phase should include, in addition to the Director,

- a senior research and programme specialist responsible for planning and co-ordination of the Centre's research network;
- professional staff conversant with technical and vocational education development in the different regions of the world;
- a specialist in information and communication technologies who will establish and operate a computerized communication network among participating institutions,
- general services staff, in particular a documentalist, a staff member in charge of accounting, procurement etc., and secretaries,

and in addition, on a temporary basis and as far as funds can be provided from external sources, specialists seconded from interested Member States as well as visiting fellows/associated experts from specialized international, regional and national institutions who will gain experience while contributing to the work of the Centre.

Location

The Centre will have limited human and material resources of its own. Therefore it appears indispensable for it to be placed within an **environment contributing to the performance of its tasks**. It would be desirable:

- for the host country to have a highly developed system of technical and vocational education, with a variety of resource persons available;
- to create favourable conditions for the Centre to co-operate easily with Member States from all regions of the world and to establish operational linkages with institutions active in technical and vocational education, particularly in the field of research and development;
- to have access to information bases such as specialized libraries and documentation centres, adequate conference facilities and efficient communication services.

8 Cost: initial phase

Cost of establishing the Centre

This includes expenses, in particular investment, which will, in addition to current operational costs, occur in the initial phase, such as:

- preparation of facilities,
- furniture and office equipment,
- information and communication technology,
- documentation.

Experience drawn from the establishment of other institutes or centres of Unesco indicates that negotiations with Member States interested in hosting the Centre might lead to their substantial contribution towards the provision of facilities and equipment. Therefore, no estimate is given as to the cost of establishment of the Centre.

Operational Costs

Cost of operating the Centre comprises expenses required for execution of its programme, as well as the minimum expenditure for staff and support services.

The annual cost of operating the Centre will have to be worked out on the basis of additional information on the conditions that may prevail for launching the project. It is deemed, however, that the Centre would require, in its initial phase, an annual budget for staff and programme supporting services in the order of one million US\$. Direct programme cost would require resources in the order of one to two million US\$. A tentative estimate is included as Annex IV.

Financing of both establishment and operational costs is anticipated from different sources, in particular

- contributions from the host country and/or institution, particularly towards the preparation, equipment and maintenance of facilities, and for staff and programme supporting services;
- allocations from international organizations and other donor agencies/foundations;
- voluntary contributions from governments, public or private organizations, associations or individuals;
- fees collected for special services offered by the Centre, e.g. sales of publications or consultancy.

9 Conclusions

The world-wide problematique of technical and vocational education is characterized by increasing demand in quantitative and qualitative terms, particularly in the light of rapid technological advances. The developing countries face special problems for modernization and expansion of their technical and vocational education due to inadequacy of research and development infrastructures and of technical and material resources.

The *Convention on Technical and Vocational Education* adopted by the General Conference at its 25th session in 1989 provides Member States and Unesco with a general framework for the design and development of technical and vocational education, including increased effort for promotion of international co-operation in this field.

Unesco and ILO have co-operated in the promotion and development of technical and vocational education and training according to their respective mandates, and their actions have been complementary. However, for systematic development of technical and vocational education, certain areas (exchanges and networking, innovations in training, research and development) call for further efforts on the part of the international community and particularly Unesco.

In order to effectively promote international co-operation in technical and vocational education, mobilization and coordination of additional technical and financial resources, especially extra-budgetary, will be required. Furthermore, an appropriate institutional framework needs to be set up under the auspices of Unesco in order to provide the optimal structural, logistic and administrative adaptability and the necessary dynamics for international action.

The study concludes that the establishment of an International Centre for Technical and Vocational Education for the purpose of promoting and supporting the development of national systems of technical and vocational education is both feasible and highly desirable.

It is proposed that the establishment of the Centre should be preceded by an initial phase of three to four years, conceived as an international project hosted by an existing institution, which could be started in 1992, and would permit negotiations with Member States and possible host institutions, mobilizing of resources, setting up of a network and undertaking a number of priority activities. After two to three years, the project would be evaluated with a view to the establishment of the Centre.



Annex I Resolution 1.21 adopted by the General Conference at its 25th Session

The General Conference,

Recalling 24 C/Resolution 5.1, paragraph 2 (b)(ii), encouraging innovations concerning the content and methods of technical and vocational education,

Stressing the role of technical and vocational education as a link between education and the employment system, and as an important prerequisite for economic and social progress,

Taking into consideration the recommendations of the International Congress on the Development and Improvement of Technical and Vocational Education (Berlin, German Democratic Republic, 1987), notably those on strengthening links between education and the world of work,

Taking into account the results of the Unesco Symposium on Innovative Methods of Technical and Vocational Education held in Hamburg, Federal Republic of Germany, in June 1989, and in particular the different approaches to systematic out-of-school technical and vocational education,

1. Welcomes 131 EX/Decision 4.2, in paragraph 26 of which the Executive Board recommends that higher priority than in the past be given to technical and vocational education, and that increased resources be allocated to this area;
2. Authorizes the Director-General, within the budgetary resources foreseen in document 25 C/5, to strengthen programmes and to mobilize increased extra-budgetary resources in the field of technical and vocational education;
3. Invites the Director-General:
 - (a) further to develop prospects for Unesco's activities in the field of technical and vocational education beyond the year 1991;
 - (b) to carry out, as far as financial constraints allow, a feasibility study on the establishment of an International Centre for Technical and Vocational Education.⁷

⁷ from: Records of the General Conference, Twenty-fifth Session, Paris, 17 October to 16 November 1989, Volume 1, Resolutions, page 92

Annex II Convention on Technical and Vocational Education (Articles 1 - 6)

Article 1

The Contracting States agree that:

(a) for the purpose of this Convention 'technical and vocational education' refers to all forms and levels of the educational process involving, in addition to general knowledge, the study of technologies and related sciences and the acquisition of practical skills, know-how, attitudes and understanding relating to occupations in the various sectors of economic and social life;

(b) this Convention applies to all forms and levels of technical and vocational education provided in educational institutions or through co-operative programmes organized jointly by educational institutions, on the one hand, and industrial, agricultural, commercial or any other undertaking related to the world of work, on the other;

(c) this Convention shall be applied in accordance with the constitutional provisions and legislation of each Contracting State.

Article 2

1. The Contracting States agree to frame policies, to define strategies and to implement, in accordance with their needs and resources, programmes and curricula for technical and vocational education designed for young people and adults, within the framework of their respective education systems, in order to enable them to acquire the knowledge and know-how that are essential to economic and social development as well as to the personal and cultural fulfilment of the individual in society.

2. The general framework for the development of technical and vocational education shall be determined in each Contracting State by appropriate legislation or other measures indicating:

(a) the objectives to be attained in technical and vocational fields, taking into consideration economic, social and cultural development needs and the personal fulfilment of the individual;

(b) the relationship between technical and vocational education, on the one hand, and other types of education, on the other, with particular reference to horizontal and vertical articulation of programmes;

(c) the structures for administrative organization of technical and vocational education defined by the responsible authorities;

(d) the roles of the public authorities responsible for economic, social and development planning in the various sectors of the economy and, where applicable, of professional associations, workers, employers and other interested parties.

3. The Contracting States shall guarantee that no individual who has attained the educational level for admission into technical and vocational education shall be discriminated against on the grounds of race, colour, sex, language, religion, national or social origin, political or other opinions, economic status, birth, or on any other grounds.

The Contracting States shall work towards the right to equal access to technical and vocational education and towards equality of opportunity to study throughout the educational process.

4. The Contracting States shall pay attention to the special needs of the handicapped and other disadvantaged groups and take appropriate measures to enable these groups to benefit from technical and vocational education.

Article 3

1. The Contracting States agree to provide and develop technical and vocational education programmes that take account of:

(a) the educational, cultural and social background of the population concerned and its vocational aspirations;

(b) the technical and professional skills, knowledge and levels of qualification needed in the various sectors of the economy, and the technological and structural changes to be expected;

(c) employment opportunities and development prospects at the national, regional and local levels;

(d) protection of the environment and the common heritage of mankind;

(e) occupational health, safety and welfare.

2. Technical and vocational education should be designed to operate within a framework of open-ended and flexible structures in the context of lifelong education and provide:

(a) an introduction to technology and to the world of work for all young people within the context of general education;

(b) educational and vocational guidance and information, and aptitude counselling;

(c) development of an education designed for the acquisition and development of the knowledge and know-how needed for a skilled occupation;

(d) a basis for education and training that may be essential for occupational mobility, improvement of professional qualifications and updating of knowledge, skills and understanding;

(e) complementary general education for those receiving initial technical and vocational training in the

form of on-the-job or other training both inside and outside technical and vocational education institutions;

(f) continuing education and training courses for adults with a view, in particular, to retraining as well as to supplementing and upgrading the qualifications of those whose current knowledge has become obsolete because of scientific and technological progress or changes in the employment structure or in the social and economic situation, and also for those in special circumstances.

3. Technical and vocational education programmes should meet the technical requirements of the occupational sectors concerned and also provide the general education necessary for the personal and cultural development of the individual and include, inter alia, social, economic and environmental concepts relevant to the occupation concerned.

4. The Contracting States agree to tender support and advice to undertakings outside educational institutions which take part in co-operative programmes of technical and vocational education.

5. At each occupational level, the competence required must be defined as clearly as possible and curricula must be continuously updated to incorporate new knowledge and technical processes.

6. In assessing the ability to carry out occupational activities and determining appropriate awards in technical and vocational education, account should be taken of both the theoretical and practical aspects of the technical field in question, and this should apply both to persons who have received training and to persons who have acquired occupational experience in employment.

Article 4

The Contracting States agree to review periodically the structure of technical and vocational education, study programmes, plans, training methods and materials, as well as forms of co-operation between the school system and the world of work, so as to ensure that they are constantly adapted to scientific and technological progress, to cultural progress and to changing employment needs in the various sectors of the economy, and that advances in educational research and innovation are taken into account with a view to application of the most effective teaching methods.

Article 5

1. The Contracting States agree that all persons teaching in the field of technical and vocational education, whether working full time or part time, should have adequate knowledge, theoretical and practical, of their professional field of competence as well as appropriate teaching skills consistent with the type and level of the courses they are required to teach.

2. Persons teaching in technical and vocational education should be given the opportunity to update their

technical information, knowledge and skills through special courses, practical training periods in enterprises and any other organized form of activity involving contact with the world of work; in addition, they should be provided with information on and training in educational innovations that may have applications in their particular discipline and be given the opportunity to participate in relevant research and development.

3. Equal employment opportunities should be offered, without discrimination, to teachers and other specialized staff in technical and vocational education and their employment conditions should be such that it is possible to attract, recruit and retain staff qualified in their areas of competence.

Article 6

To facilitate international co-operation, the Contracting States agree:

(a) to encourage the collection and dissemination of information concerning innovations, ideas and experience in technical and vocational education and to participate actively in international exchanges dealing with study and teacher-training programmes, methods, equipment standards and textbooks in the field of technical and vocational education;

(b) to encourage the use in technical and vocational education of international technical standards applied in industry, commerce and other sectors of the economy;

(c) to promote approaches to achieving the recognition of equivalencies of qualifications acquired through technical and vocational education;

(d) to encourage international exchanges of teachers, administrators and other specialists in technical and vocational education;

(e) to give students from other countries, particularly from developing countries, the opportunity to receive technical and vocational education in their institutions, with a view, in particular, to facilitating the study, acquisition, adaptation, transfer and application of technology;

(f) to promote co-operation in technical and vocational education between all countries, but in particular between industrialized and developing countries, in order to encourage the development of the technologies of the countries;

(g) to mobilize resources for strengthening international co-operation in the field of technical and vocational education.

Annex III Information on the ILO Programme

Programme of the ILO

The Draft Programme and Budget for 1992-93, under the Major Programme **Training**, sets four **main lines of work**:

- **management development**, with the aims to develop managerial resources at various levels and for various sectors of the economy in an environment characterised by rapid change, with a view to improving the efficiency of enterprises and thereby contributing to growth and the expansion of employment opportunities. This includes promoting the development of small enterprises, increasing the skills of managers and entrepreneurs and reinforcing the infrastructure needed for this process;
- **vocational training**, with the aims to expand the opportunities available for workers to acquire the skills needed for gainful employment and self-employment in the modern and informal sectors and assist workers to adapt and upgrade their skills in line with changing labour market needs;
- **training policies**, with the aims to increase the effectiveness and efficiency of training systems and schemes by assisting governments, employers' and workers' organizations to develop training and retraining policies that respond to adjustment processes, rapid technological change and demographic trends;
- **vocational rehabilitation**, with the aims to assist in the planning and implementation of government-sponsored and community-based vocational rehabilitation programmes for the physically and mentally disabled and those who are socially maladjusted as a result of drugs or alcohol dependence with a view to reintegrating them into productive activities.

Another significant part of the ILO's technical cooperation programme is implemented by its **International Centre for Advanced Technical and Vocational Training**. Its objectives are set forth as follows:

*"to provide advanced technical and vocational training at various levels ... for persons who are considered suitable for more advanced training ... The Centre shall also provide advanced training for persons connected with the development of small-scale industry and production co-operatives as well as instruction in teaching methods for technical co-operation experts."*⁸

The *Programme and Budget Proposals for 1992-93* are centred around three components:

- bringing to bear the experience and competence of the ILO in the field of training, which is one of the principal means of disseminating the message and the mandate of the ILO;
- support services to technical assistance projects; the Centre's technical support programme includes a research and development service based on new training needs and materials, and an information and publication service to develop and disseminate training methods and materials;
- training activities carried out under ILO technical co-operation projects and programmes, as well as those undertaken by the Centre at the request of other donors. These are carried out in close consultation with the technical and regional major programmes of the ILO. The Centre will contribute to the organization of individual fellowships and courses in the context of ILO technical co-operation projects.

The **specific competence** of the Turin Centre is described to lie in the fields of **training technology and the management and organisation of training**.

It should be recalled as well that the ILO has developed and applied **standard-setting instruments** in the field of technical and vocational education, in particular the **Recommendation** (No. 150) and **Convention** (No. 142) **concerning Vocational Guidance and Vocational Training in the Development of Human Resources**, both adopted by the ILO General Conference in 1975.

8 Article I para 1 of its Statutes

Relations between Unesco and the ILO

In the *Memorandum on Collaboration between the ILO and Unesco in matters of technical and vocational education and related matters*, New York, 14 October 1954) both organizations agree that

*"The ILO is primarily concerned with technical and vocational education and training in **relation to occupational activities and welfare of workers**. Unesco is primarily concerned with technical and vocational education as **part of the education of human beings** equipped to live in a society dependent upon technological development. In general the word "**training**" is likely to invoke the concern of the **ILO** whereas the word "**education**" is likely to invoke the concern of **Unesco**.*

The Major Interest of the ILO

*The **practical imparting of specific skills** relating to a given occupation or given occupations by means of apprenticeship or other forms of **training in factories, workshops or special centres or institutions** is primarily a matter for the ILO, subject to consultation with Unesco on any general education questions which may arise.*

The Major Interest of Unesco

*Technical and vocational education which takes place **within a general educational system** is primarily a matter for Unesco, subject to consultation with the ILO concerning the prospective demand for particular skills and the requirements to be fulfilled in respect of such skills.*

Annex IV Tentative estimate of annual cost of operation

Costs of operation will to a certain extent depend on factors such as the location, premises, etc. which cannot be anticipated. Therefore, only a tentative estimate can be produced based on assumed standards of remuneration in international organizations and on staff provisions given under Chapter 7.

Direct programme costs (Figure 7) refer to activities to be carried out within the five Programme Areas.

Costs for staff and support services (Figure 8) are related to the basic professional and administrative services, including minimum operating expenditure, such as documentation, travel, communication, etc.

It is considered that for the Centre to have the expected impact on the development of technical and vocational education systems, the following resources would be needed:

Estimated annual direct programme costs	range in 1000 US\$
<i>Programme Area A:</i> Exchanges of ideas and experience, and studies on policy issues	100 ... 200
<i>Programme Area B:</i> Strengthening of national research and development capabilities	200 ... 500
<i>Programme Area C:</i> Promotion of innovation in staff development	200 ... 400
<i>Programme Area D:</i> Facilitating access to data bases and documentation	200 ... 300
<i>Programme Area E:</i> International co-operative action	300 ... 600
Total estimated annual direct programme costs	1000 ... 2000

Figure 7
Estimated annual direct programme costs

Estimated annual staff and support services costs	posts	in 1000 US\$
Director	1	120
Senior research and programme specialist	1	100
Professionals	2	200
Specialist in information and communication technologies	1	80
General services (documentalist, accountant)	2	100
Secretarial services	3	100
Premises (rent, maintenance, etc.)		80
Materials and services		160
Travel		60
Total estimated annual staff and support services costs	10	1000

Figure 8
Estimated annual staff and support services costs

Annex V Reference Documents

Unesco documents and reports

- Third Medium-Term Plan (1990-1995) (25 C/4 Approved), Unesco 1990
- Approved Programme and Budget for 1990-1991 (25 C/5 Approved), Unesco, Paris, January 1990
- Records of the General Conference, Twenty-fifth Session, Paris, 17 October to 16 November 1989, Volume 1, Resolutions
- In-depth-study to provide guidelines and principles for a possible convention on technical and vocational education, submitted to the General Conference at its twenty-third session in document 23 C/28
- Final Report on the International Congress on the Development and Improvement of Technical and Vocational Education, Berlin, German Democratic Republic, 22 June - 1 July 1987, Unesco document ED-87/CONF.401/8
- Innovative Methods of Technical and Vocational Education, Report of the Unesco International Symposium Hamburg, June 5-9, 1989
- Revised Recommendation on Technical and Vocational Education (1974)
- Convention on Technical and Vocational Education (1989)
- Statutes of the Unesco Institute for Education, Hamburg
- IIEP Basic Texts, International Institute for Educational Planning, Paris 1988
- 1989 Statistical Yearbook, Unesco

ILO, Turin Centre

- Proposals of the Director-General of the ILO for the Programme and Budget for 1990-91
- Proposals of the Director-General of the ILO for the Programme and Budget for 1992-93, Geneva, December 1990
- Medium Term Plan of the ILO 1990-1995
- Basic Documents, International Centre for Advanced Technical and Vocational Training Turin, May 1986

Unesco - ILO relations

- Memorandum on Collaboration between the ILO and Unesco in matters of technical and vocational education and related matters, New York, 14 October 1954)