

TECHNICAL TEACHERS' TRAINING INSTITUTE, CALCUTTA

BACKGROUND

The Technical Teachers' Training Institute, Calcutta, the first of its kind in India, was established in 1965 by the Ministry of Education and Cultural Affairs, presently the Ministry of Human Resource Development, Bureau of Technical Education, Govt. of India in the Eastern Region as one of the four Regional Institutes in the country. The Institute has been entrusted with the activities related to Technical Education for the Eastern Region comprising the States of West Bengal, Bihar, Orissa, Assam, Tripura, Nagaland, Manipur, Meghalaya, Mizoram, Sikkim, Arunachal Pradesh and the Union Territory of Andaman and Nicobar Islands.

Initially, the Institute has been set up at the campus of J. C. Ghosh Polytechnic, 7, Mayurbhanj Road, Calcutta, and was shifted to its own campus at Block FC, Sector - III, Salt Lake City, Calcutta having a land area of 10,214 acres (41,335 sq. m.) in 1980. A second plot of land measuring 1.2625 hectare was acquired in 1995 at Block DN, Sector -V, Salt Lake City for construction

of housing complex for members of faculty and staff of this Institute. The Institute has Departments of Civil Engineering, Electrical Engineering, Mechanical Engineering, Science and Education and also Departments of Curriculum Development, Training and Placement, Computer Science & Engineering, Continuing Education, Educational Planning and Management and Community Development & Rural Technology. The Departments are run by a highly qualified team of faculty and supporting staff, who are specialists in their respective areas. There is a Centre for Learning Resources Development for the production of educational media, video programmes and CAI packages. The Institute has a well equipped library with well chosen collection of text books, reference books and journals on different scientific, engineering and technological subjects as well as on behavioural, pedagogical, social and management sciences to cater to the needs of the trainees, the faculty and other members of staff of the Institute and the researchers, too.

OBJECTIVES OF THE INSTITUTE :

The current operational objects of this Institute (as adopted since 1979) are;

- (i) To train teachers of technical and vocational education and training institutions of industry through long, modular and short courses.
- (ii) To foster and promote research in :
 - (a) improving classroom and laboratory techniques
 - (b) developing an understanding of the teaching-learning process
 - (c) all aspects of curriculum development and testing.
- (iii) To prepare and supply, wherever necessary, teaching aids, instructional materials including film-strips, technical films and other aids to technical institutes, vocational schools and industrial training organizations.
- (iv) To associate the Institute with State Councils and other academic bodies on technical education in the region regarding curriculum development, admission procedures and examination reforms.
- (v) To collaborate with institutes or organizations in India and abroad that have similar objectives and functions.
- (vi) To take initiative in improving polytechnic education.
- (vii) To act as centre for disseminating information to all agencies inter-

ested in technical education.

- (viii) To collaborate with industries in the region in formulating training programmes of mutual interest.

The TTTIs have formulated programmes with the major aim of catering for improvements of Technical Education, in general, and Technician Education, in particular, through Polytechnic System* and continuously enhancing their quality, effectiveness and efficiency. The content and the forms of the programmes have been modified from time to time to match the changing needs of the respective regions. The recommendations of various Committees set up from time to time have been the guiding factors in recasting and providing extension activities and programmes (vide Table 1).

MANAGEMENT :

The Institute is managed by a Board of Governors, which is responsible for its general direction and control, as laid down in the Memorandum of Association and Rules and Regulations of the Technical Teachers' Training Institute, Calcutta Society. The Principal is the chief academic and executive authority and is also ex-officio Member Secretary of the Board / Society. The Board of Governors is assisted by the following committees :

- Finance Committee
- Academic Council
- Purchase Committee
- Building and Works Committee.

* There are 85 Polytechnics in Eastern Region.

Table 1 : TTTI Activity Profile at a Glance Over the Years

Year of Commencement	Major Programme	Document / Report
1966	Long-term Training of pre-service Teachers of Engineering & Technology (Civil, Electrical, Mechanical Engineering)	EFC Memo, 1966
1970	Curriculum Development Centre; Quality Improvement Programmes (Short Courses)	Damodharan Committee 1970
1972	Science Teaching Diploma Course; Preparation of Teachers' manuals; Revision of long-term programmes; Long term programme of reduced duration for in-service teachers; Pre-service training discontinued	
1976	Modular Programmes for Teacher Training; Expansion of Short Programmes and Extension Activities; Consultancy in Direct Central Assistance Schemes; Diploma in Humanities Teaching	First Review Committee, 1976 (Kelkar Committee)
1978	Community Polytechnic Scheme; In-house Programmes in Polytechnics UNESCO/ UNDP Phase-I; Educational Research; Preparation of Multimedia Learning Packages; Educational Films; National Testing Service	Working Group Report on Technical Education (Jha Committee)
1980	TTTI, Calcutta shifted to its own campus in Salt Lake	
1984	New Central Schemes, e.g. Modernisation, QIP Centres; Computer Courses, B.Ed. Technical Programmes, Programmes for Workshop Instructors, Continuing Educational Project UNDP Phase-II : Video Programmes; Computer/Information Systems; Educational Planning	Sengupta Committee
1988	Unorganized and Rural Sector; Strengthening of the Community Polytechnic Scheme; Continuing Education	National Policy on Education (1986) and its Programme of Action

1989	World Bank Project Formulation : Preparation of Detailed Project Report of States; Staff Development Plans; New Programmes for Foreman, Teachers of Architecture and Chemical Engineering and other Supporting Staff.	World Bank Assisted Project for Strengthening of Technician Education
1991	Rural and Community Development; Collaborative Programmes; Staff Development; Curriculum Development; Instructional Materials Development; Research and Development; Extension Services and Consultancy; Continuing Engineering Education; World Bank Project through Capacity Expansion, Quality Improvement and Efficiency Improvement.	Second Review Committee, 1991 (Bhattacharya Committee) Empowered Committee, 1992, Planning Commission Document on Perspective for Excellence in TTTI, August 1993, AICTE Expert Committee, 1994.

ACTIVITIES AND ACHIEVEMENT :

Different types of activities undertaken by the Institute have been graphically represented in Fig. 1. Details of these activities are as follows :

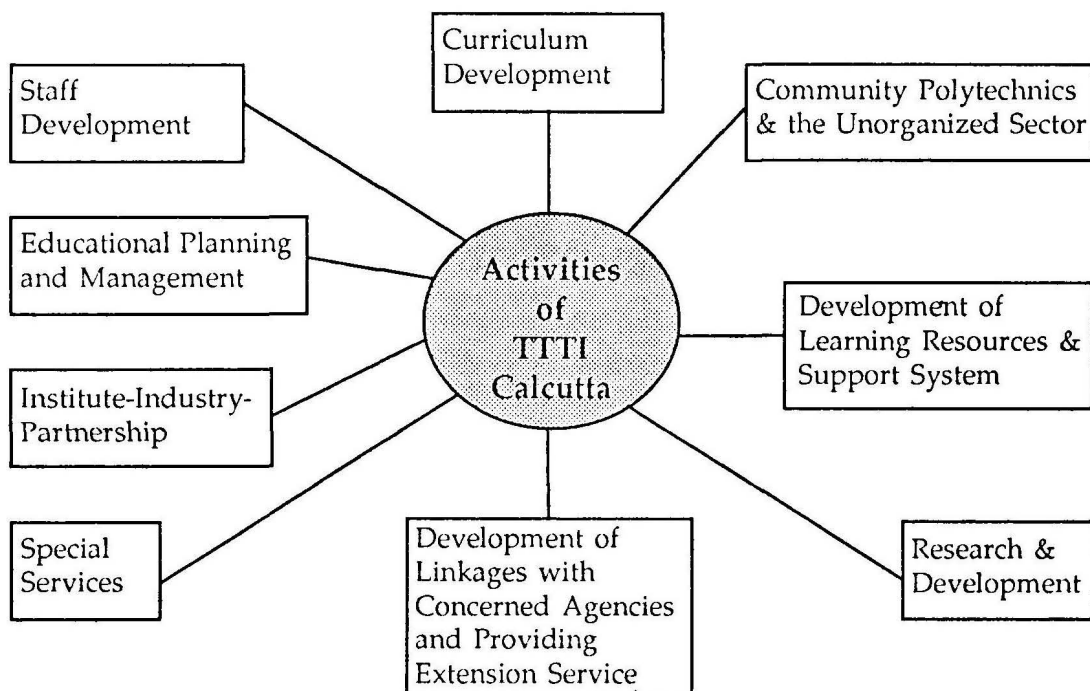


Fig. - 1

A. STAFF DEVELOPMENT :

The Institute concentrates its focus on its primary mandate of development of polytechnic staff through long-term modular and short-term institution based programmes. These programmes cover different fields of andragogy and technology in both conventional and emerging areas. Besides, the Institute also conducts Induction programmes for newly recruited teachers, In-house programmes and Workshops for training of polytechnic staff.

- For the purpose of Staff Development, the Institute offers the following long-term training programmes, in modular form, for the Polytechnic teachers :
- 1. Bachelor of Education (Technical) - affiliated to Calcutta University
- 2. Diploma in Technical Teaching
- 3. Diploma in Science Teaching
- 4. Diploma in Humanities Teaching
- 5. Diploma in Science Laboratory Instruction
- 6. Diploma in Workshop Instruction.

As a gesture of co-operation between the regional TTTIs, the Institute is imparting training for the teachers from the polytechnics of the Northern Region in Diploma in Technical Teaching, in view of non-availability of the same programme in TTTI (Northern Region), Chandigarh.

- Besides offering long term courses, different types of short term programmes, viz, Short courses, Workshops, In-house programmes and Conferences are regularly organized in the areas of pedagogy,

content updating in the different technical subjects, curriculum development, behavioural science, management science, instructional resources development and technology transfer for community services etc. The Institute also organizes Industrial Training for polytechnic teachers and Study Visit for Principals and senior members of faculty.

B. CURRICULUM DEVELOPMENT

Activities primarily relate to the following :

- Reviewing, revising and developing/modernising existing curricula.
- Preparing new curricula to meet the socio-economic needs of the region.
- Developing curricula owing to introduction of new courses as necessitated due to implementation of World Bank Assisted Project for Strengthening of Technician Education in the States of the Eastern Region.

C. COMMUNITY SERVICES AND SERVICES TO THE UNORGANIZED SECTOR :

As per decision of the AICTE in 1978, a few selected polytechnics were entrusted with the responsibility of acting as focal points to promote /undertake :

- Socio-economic Survey and Planning
- Manpower Development and Training
- Technical Services
- Community Support Services

- Dissemination of Information.

At present there are 63 Community Polytechnics and 7 CDRTs (Centre for the Development of Rural Technology) scattered over a vast and divergent areas of the Eastern Region. These CPs and Centres require regular monitoring and the TTTI, Calcutta is entrusted with the responsibility.

D. DEVELOPMENT OF LEARNING RESOURCES AND SUPPORT SYSTEM :

Activities include :

- Promoting development of instructional materials in many formats to cater to individualised needs of learning.
- Some of the teaching aids developed are OHP Transparencies, 35 mm slides, photographic blowups, coloured photographs, slide/tape programmes, 3-D Models, Charts, ETV cassettes, CAI packages etc.

E. INDUSTRY-INSTITUTE - PARTNERSHIP :

Activities Include :

- Training of Industrial Workforce
- Consultancy
- Collaborative Programme
- Continuing Education

F. RESEARCH AND DEVELOPMENT:

Activities primarily relate to the following :

- Developing and understanding teaching-learning process in general
- Action research to overcome problems faced by the user system.

G. EDUCATIONAL PLANNING & MANAGEMENT :

The major activities are to :

- Provide Assistance to the States in preparation and implementation of the World Bank Assisted Project.
- Assist in introduction of recent methods, management processes and practices in the technical education system.
- Visit polytechnics to assist / facilitate institutional development.

H. DEVELOPMENT OF LINKAGES WITH CONCERNED AGENCIES AND PROVIDING EXTENSION SERVICES :

Activities include co-ordination with :

- National Agencies
- World Bank, NPIU (National Project Implementation Unit) and SPIUs (State Project Implementation Units)
- State and Central Governments.
- Similar organizations by exchange of experience through organizing National / International Workshops/Seminars.

I. SPECIAL SERVICES :

- Development of strategy for enhancement of women participation in technician education.

A Note on Activities in relation to the World Bank Assisted Project for Strengthening of Technician Education in the Eastern Region

The Institute is actively involved in the above mentioned Project and some of the activities are :

- Assisting the NPIU with the neces-

sary faculty and expertise in the formulation of various schemes, studies and programmes.

- Assisting NPIU, SPIUs and Polytechnics in identifying the requirements in respects of equipment list, book list, furniture and fittings.
- Assisting the states in designing and developing new curricula, reviewing curricula, developing laboratory instructional materials, developing learning resources, developing, designing and implementing programmes for LRUC and LRDC personnel.
- Guiding the SPIUs and Polytechnics in preparing Detailed Project Reports (DPRs).
- Conducting some of the identified Staff Development Programmes for the State Officials and Polytechnic Teachers.
- Facilitating the Annual Review of the Project to be conducted by the World Bank Team and in post-review decision making.
- Assisting the NPIU in academic

monitoring, project evaluation and impact studies.

FUTURE VISION :

In the context of changed global scenario and also on the basis of recommendations of various Review Committees constituted from time to time, TTTI system is going through the process of redefining its vision statement. A series of special sessions were conducted as a part of the Inter TTTI-NPIU Workshops with the first of the series organised at TTTI, Calcutta. The last such session (7th) held at TTTI, Chandigarh in June, 1998 came out with the following recommendation on Vision Statement :

"TTTIs shall be leaders for the integrated development of World Class Technical Education System through teacher education, research and development and consultancy consistent with the needs of industry and community".

Against this backdrop, TTTI, Calcutta is likely to play the following role in future in each of the component of its activities stated earlier.

H. Development of Linkages with Concerned Agencies and Providing Extension Services	• Undertake collaborative projects and promote exchange of faculty among TTIs • Undertake International collaborative programmes through exchange of faculty • Undertake International Training programmes for technical teachers • Establish networking with various national and international institutes and organizations connected with technical education and industry.
I. Special Services	• Evolve strategies for enhancement of women participation in technical education and undertake research thereon • Provide support to various social schemes for disadvantaged groups, undertaken by Central and State Govt./ Agencies, requiring expertise of TTI • Undertake activities for the promotion of entrepreneurship • Provide research inputs/consultancy to Central and State Governments for policy formulation in technical education • Undertake special development project for quality improvement in technician education in the various States / Union Territories not covered under the World Bank Assisted Project.

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