

Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY
Near Jnana Bharathi Campus, Outer Ring Road,
Mallathahalli, Bengaluru-560056

*TECHNICAL EDUCATION QUALITY
IMPROVEMENT PROGRAMME (TEQIP)
PHASE – 1*



Aided By Govt. of Karnataka

TEQIP-I
PROJECT IMPLEMENTATION REPORT
[2005-2009]

MANAGED BY
PANCAJANYA VIDHYA PEETHA WELFARE TRUST
(REGD)

Dr. Ait Campus, Mallathahalli, Bengaluru-560056

TEQIP-I

About Dr. Ambedkar Institute of Technology (Dr. AIT):

Dr. Ambedkar Institute of Technology (Dr. AIT) was established in the year 1980 under the patronages of Panchajanya Vidya Peetha Welfare Trust (PVPWT) Bangalore, founded by Late Sri. M. H. Jayaprakash Narayan. The Institution was started with three undergraduate (UG) programmes in Civil Engineering, Mechanical Engineering and Electrical and Electronics Engineering. Later on 7 UG and 10 PG programmes were added along with 15 research centers. All programmes are affiliated to Visveswaraya Technological University (VTU), Belagavi and approved by AICTE. The institution has become Grant-in-Aid by the State Government since 1992. Academic Autonomy has been granted by the UGC, GoK and VTU during the year 2010-11 for UG programmes and since 2016-17 PG programmes are under autonomous status.

Vision and Mission of the Institute:

Vision:

To create Dynamic, Resourceful, Adept and Innovative Technical professionals to meet global challenges.

Mission:

To offer state-of-the-art undergraduate, postgraduate and doctoral programmes in the fields of Engineering, Technology and Management. To generate new knowledge by engaging faculty and students in research, development and innovation. To provide strong theoretical foundation to the students, supported by extensive practical training to meet industry requirements. To instil moral and ethical values with social and professional commitment.

Programme Development Objectives and Design:

- Rationale and need: The role of higher education is central to the growth of the nation. To ensure the creation of high quality technical manpower it is essential to improve the quality of technical education in India. Focused, self-planned and sustained efforts must be made

by the Technical Institutes to achieve such quality improvement. It is in this context that TEQIP assumes great importance to achieve excellence in technical education.

- Development Objectives:
 1. To support production of high quality technical professionals through reforms in the engineering education system in order to raise productivity and competitiveness of the Indian economy and for sustainable development.
 2. To promote competitiveness in industry and services: Focus of promoting policy and institutional reforms in the area of technical education to improve the quality of India's pool of technical manpower to match the world requirement.
- Project components: Project components are shown in Table-1

Table -1: TEQIP-I Project Components

Sl. No.	A. Promotion of Academic Excellence
1	Civil Works
2	Equipment
3	Furniture
4	Vehicle
5	Books and Learning Resources
6	Consultants services & Research Studies
7	Training / Study Tours / Fellowships (Local & Foreign) Workshops
8	Salaries for agreed additional Staff
9	Consumables
10	Operation and Maintenance
	B. Networking of Institutions
	C. Services to Community & Economy

- Design assessment: The components are divided into three groups A, B, and C as shown above. There are ten items under group A, Promotion of Academic Excellence, the most dominant component in the design. All the components are envisaged in order to fulfil the development objectives mentioned above. The competitiveness among the faculty, staff and students is improved by incorporating training for them and

also encouraging research and development activities. Networking of Institutions is designed to promote group working and sharing of expertise on resources to collectively achieve the Development Objectives among TEQIP Institutions. Services to Community and Economy provide the most appropriate mechanism for the Teachers and Students to appreciate the role of Engineering in solving practical problems of the Society and unemployed youth. Thus, all the components of the project are well related to achieving the Development Objectives and hence the design is excellent in all respects.

- Process of selection: The State Project Facilitation Unit (SPFU) selected the Institutes that are to participate in TEQIP through a careful assessment of their capabilities and achievements based on the self-appraisals submitted by the Institutes and subsequent inspections of the authority.
- The Pod's and the components were never revised during the life of the project implementation.
- During the life of the project, there was a financial restructuring that took place after the funds reallocation after the natural disaster 'Tsunami'. The allocation to the institutes was reduced by about 7.5%. Thus the allocation to Dr. Ambedkar Institute of Technology (Dr. AIT) was reduced to Rs.162.296 million from the original allocation of Rs.173.50 million and subsequently because of depreciation of the dollar value at the international market level, the original allocation was further reduced to 160.420 million.

The Institute itself revised the allocation of its funds to different components of the project based on the changing circumstances. The final allocation to different project components is as shown in Table-2.

Table-2: Final Allocation

SI No	COMPONENT	Project Allocation (Rs.in million)
	A. Promotion of Academic Excellence	
	(I) INVESTMENT COST	
1	Civil Works	16.455

2	Equipments	87.064
3	Furniture	6.382
4	Vehicle	1.100
5	Books and Learning Resources	17.504
6	Consultants services & Research Studies	0.972
7	Training / Study Tours / Fellowships (Local & Foreign) Workshops	6.532
	Total (I)	136.009
	(II) INCREMENTAL OPERATING COST	
8	Salaries for agreed additional Staff	0.141
9	Consumables	0.515
10	Operation and Maintenance	2.676
	Total (II)	3.332
	Sub Total - A (Total of I + II)	139.341
11	B. Networking of Institutions	16.300
12	C. Services to Community & Economy	4.779
	GRAND TOTAL (A+B+C)	160.420

Achievement of Project Development Objectives:

TEQIP has given a new impetus to all the activities at Dr. Ambedkar Institute of Technology. Significant improvements are observed in all the key performance indicators. Publications, number of Ph.Ds awarded, number of Research Centers, etc., have all increased during the TEQIP period. The feedback provided by the faculty, staff and students during the audits was analyzed carefully and the analysis was used to initiate appropriate remedial actions. For example, the institute substantially increased its expenditure on Books and LR's based on the feedback.

All the equipment procured under TEQIP have been installed and are functioning well, and are being utilized extensively by the faculty and students. The institute has adhered to all the procurement and financial management guidelines of the World Bank. With the advice and guidance provided by NPIU, SPFU, Performance Auditor, and Mentor, the institute implemented the project. Dr. AIT has been innovating and adopting several good practices over the years. TEQIP has further enhanced the motivation of the faculty in innovating and adopting several good practices to achieve the quality of its services. The institute does see great opportunities for improving its performance in activities related to faculty development programme, networking and services to community. It has drawn up an action plan to utilize these opportunities for further quality improvements.

We also wish to record that our Management, in pursuit for excellence, has contributed Rs.7.000 million for construction of PG Block for the benefit of the post graduate students.

Based on the performance, facts, and Auditor's reports, the institute rates its overall project performance as highly satisfactory. However, the institute realizes that considerable scope exists for further improvements in the performance and is prepared to act accordingly in the coming years.

Performance on Key indicators:

Dr. Ambedkar Institute of Technology is steadily improving its performance in all aspects of academics, particularly in research and development. Many faculty members are enthused with the advent of TEQIP and registered

themselves for Ph.D. Due to this there is a substantial increase in the research activities at the institute.

- Total publications have increased from 25 in 2004-05 to 190 (31 in refereed Journals and 159 in conferences) in 2008-09.
- Three Indian patents and One International patent is obtained.
- Out of 35 faculty members registered for Ph.D., 6 were awarded degrees. Many others have submitted / have completed their comprehensive viva and are on the verge of submission.
- Further, the number of research centers has increased from 4 to 8.

Institutional Reforms:

Though there was some initial delay in the implementation of reforms like autonomy, the institute is happy to record that the implementation of academic autonomy will be done from the next academic year.

- Institute was granted academic autonomy for all its UG programmes starting from the academic year 2009-10.
- We have established the four mandatory funds and have been adding reasonable amounts to all these funds. The institute has a separate corpus fund for meeting its regular expenditure. The funds established under TEQIP will be utilized exclusively for sustaining TEQIP-related activities only.
- The institute has always been successful in completely recovering the cost of all its activities and continues to do so. IRG also has been increasing steadily over the years.
- Dr. AIT has always placed great emphasis on human resources. All the sanctioned faculty and staff positions are filled up.

The institute has a good governance system with decentralized powers to Heads of Departments and other stakeholders. Board of Governors and Heads of Departments meet often. Academic Council and other boards are active under autonomy.

Review of Targets in the Concise Institutional Proposal:

The institute has achieved most of the key activities envisaged in the CIP. University and Government of Karnataka have granted Academic Autonomy

for all its UG programmes. It has completed the implementation of administrative and managerial reforms required to achieve all-round excellence. It has upgraded and refurbished most of the existing laboratory facilities and established new centers of excellence in the fields of High Voltage lab, Virtual Instrumentation lab and DATA Centre.

The institute has been highly successful in implementing faculty and staff development programmes to improve their competencies. Even relatively fresh recruits with less than two years of experience are being deputed for such training programmes. The level of Industry-Institute Interactions has also been significantly enhanced. MoUs with leading organizations like TCS, Infosys and Wipro have been signed and several activities involving the industry (like setting up of new labs, revision of curricula) are taking place. Plans for sustaining the TEQIP benefits after completion of the project are also being implemented effectively. Management capacity building is also taking place effectively.

Several networking activities like joint Ph.D guidance, joint authoring of books, joint organization of seminars and workshops have taken place. However, the institute recognizes that more needs to be done in this area. As the institute is located in the heart of a metropolis and also because of lack of clarity initially on the part of faculty and students regarding the nature of activities that could be initiated to serve the community in an urban setting, the institute could implement activities under 'Service to Community' head to a great extent.

Review of Stakeholder audits:

Faculty have expressed satisfaction with improvement/modernization of laboratories and improvement in the ambience of the laboratories that resulted from the implementation of TEQIP. However, there was a feeling expressed in the audit that they have not been able to exercise financial powers for carrying out research and consultancy projects. They expressed high level of satisfaction with the library facilities and implementation of teaching learning processes. The students also expressed high level of satisfaction with the ambience of laboratories and library. However, a sizeable number felt that improvements were required in the number of volumes available in the library and provision of internet facilities in the

computer centers. The linkages with the industry were also perceived to be of lower level.

The institute values the feedback of the stakeholders and after a detailed discussion of the survey results, initiated several actions to address the problem areas. Some of these initiatives are as follows:

The allocation for Books and LRs was increased. A total amount of Rs.18.381 million was spent by the end of TEQIP towards procurement of Books and LRs.

Several meetings were also held with faculty and students to explain these initiatives and the institute is confident that the results of the seventh performance audit would reveal the positive impact of these initiatives. The institute is finalizing the action plans for further strengthening its linkages with industry.

Faculty Development and Staff Training:

Dr. Ambedkar Institute of Technology is always valuing its human resource from its inception. Best personnel are recruited for faculty positions through well-set procedures. Until entering into TEQIP project, the faculty training was done on the basis of requests by the faculty. TEQIP has given a new direction to the faculty training in the form of need-based training. This has given an impetus showing new avenues to the faculty members. The total number of trainings given for faculty and staff is 654 and total number of days are 6086 at a total cost of Rs.6.845 million as shown in Table-3.

Table-3: No. of Faculty and Staff Trained

Year	No. of Faculty and staff trained
2005-06	182
2006-07	293
2007-08	86
2008-09	93
TOTAL	654

This opportunity enhanced the abilities of the faculty members tremendously, which also helped in increasing the research activities and publications. The euphoria is being continued to attain greater heights.

Networking activities:

TEQIP has given a new impetus to the institute to achieve excellence by leveraging networking, both formally and non-formally, with other academic institutes, research institutes, and industry. The institute has succeeded in organizing conferences and workshops jointly with its networking partners. Joint research activities including joint guidance of Ph.D scholars are also in progress. Several collaborative activities with non-formal networking partners have also been initiated. Faculty/student exchanges, credit transfers, sharing of laboratories and other facilities have also been initiated.

The institute hopes to continually enhance the range and quality of its networking activities in the coming years.

Functioning and Utilization of purchased equipment and civil works:

The procedure to carry out the civil works was as per NCB. All the equipment procured under TEQIP have been installed, are functioning well and are being utilized extensively by the faculty and students. The details have been entered into the stock register and all the equipment have been labelled appropriately and also log book is being maintained for each equipment. The institute has well-established procedures for security, monitoring and for prevention of mis-utilization. The facilities like DATA center and Virtual Instrumentation lab are being used by all the departments in the institute.

There is considerable scope for increase in the use of facilities like HV laboratory, Virtual instrumentation lab facility, etc., as these facilities are advanced and cater to the needs of fast-growing industry verticals.

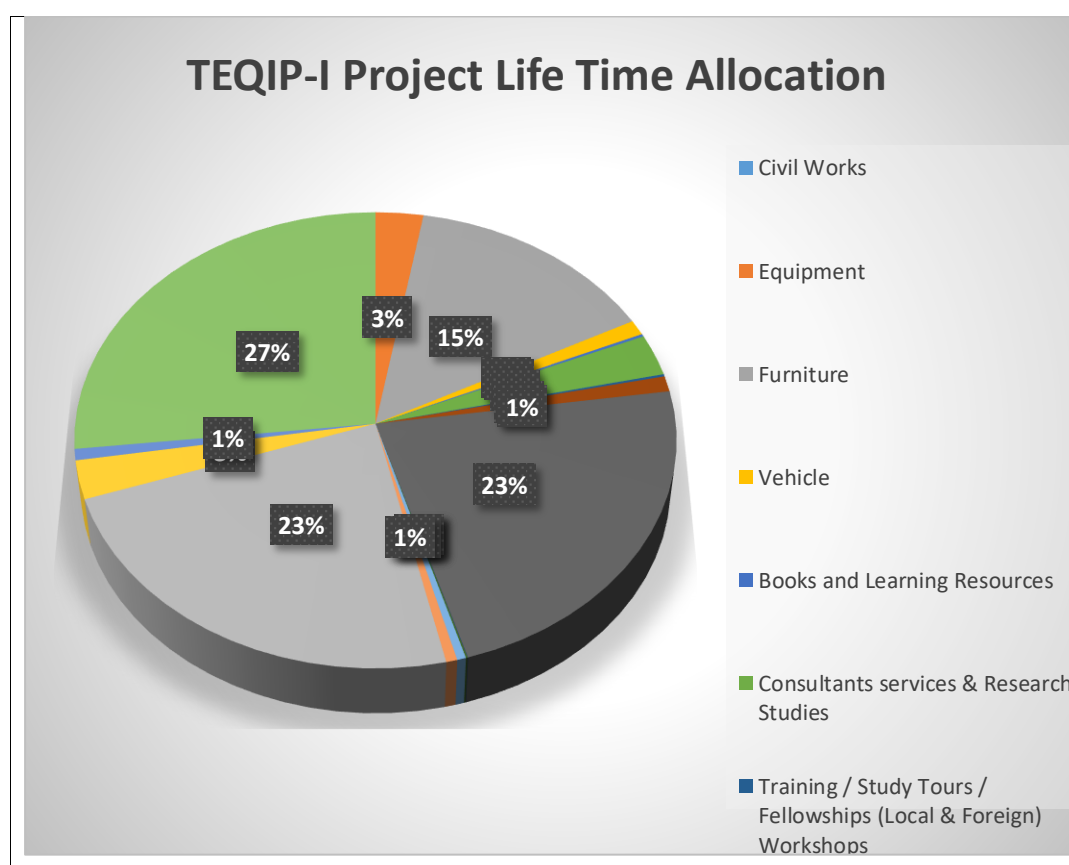
Project Components and amount spent:

With the advice and guidance provided by NPIU, SPFU, Performance Auditor, and Mentor, Dr. AIT has been able to achieve its envisioned objectives in all the project components. The details are provided below in Table-4:

Table-4: TEQIP-I Project Life Time Allocation

SI No	COMPONENT	Project Allocation, Rs.in million	Total Spent Rs.in Million
	A. Promotion of Academic Excellence		

	(I) INVESTMENT COST		
1	Civil Works	16.455	16.455
2	Equipment	87.064	87.064
3	Furniture	6.382	6.382
4	Vehicle	1.100	1.100
5	Books and Learning Resources	17.504	17.504
6	Consultants services & Research Studies	0.972	0.948
7	Training / Study Tours / Fellowships (Local & Foreign) Workshops	6.532	6.531
	Total (I)	136.009	135.984
	(II) INCREMENTAL OPERATING COST		
8	Salaries for agreed additional Staff	0.141	0.141
9	Consumables	0.515	0.515
10	Operation and Maintenance	2.676	2.680
	Total (II)	3.332	3.336
	Sub Total - A (Total of I + II)	139.341	139.320
11	B. Networking of Institutions	16.300	16.300
12	C. Services to Community & Economy	4.779	4.797
	GRAND TOTAL (A+B+C)	160.420	160.417



TEQIP-I Project Life Time Utilization

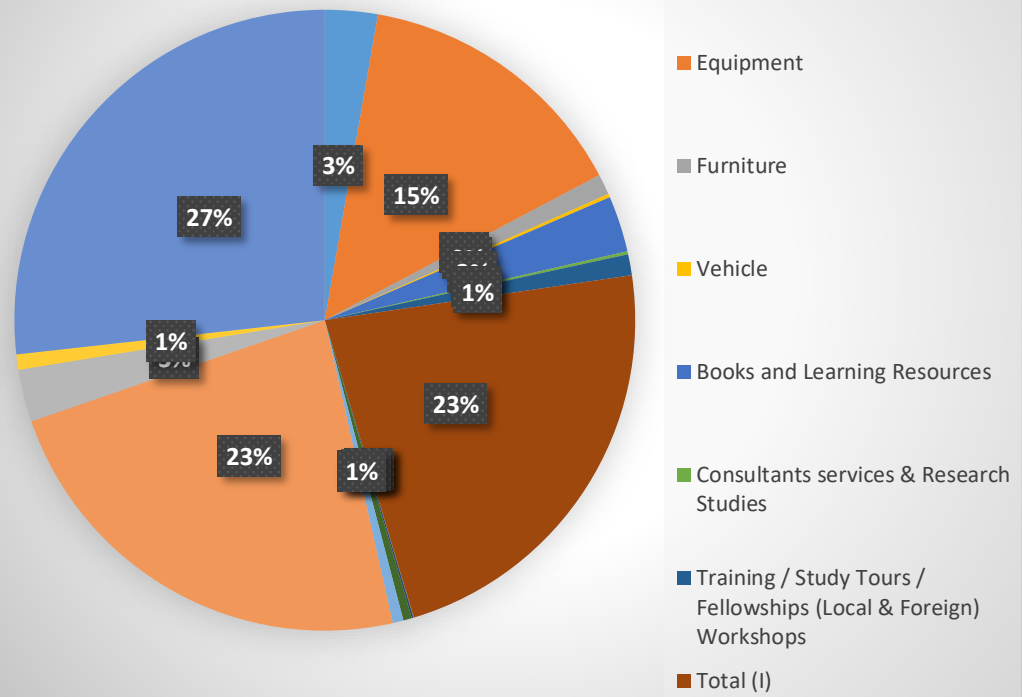


Table-5: INTEREST COMPONENT

SI No.	COMPONENT	Interest Allocation Rs. in Million	Total Spent Rs.in Million
	A. Promotion of Academic Excellence		
	(I) INVESTMENT COST		
1	Civil Works	0.000	0.000
2	Equipments	0.000	0.000
3	Furniture	0.000	0.000
4	Vehicle	0.000	0.000
5	Books and Learning Resources	0.878	0.877
6	Consultants services & Research Studies	0.000	0.000
7	Training / Study Tours / Fellowships (Local & Foreign) Workshops	0.313	0.313
	Total (I)	1.191	1.190
	(II) INCREMENTAL OPERATING COST		
8	Salaries for agreed additional Staff	0.000	0.000
9	Consumables	0.000	0.000
10	Operation and Maintenance	0.695	0.695
	Total (II)	0.695	0.695
	Sub Total - A (Total of I + II)	1.886	1.885
11	B. Networking of Institutions	0.834	0.834
12	C. Services to Community & Economy	0.000	0.000
	GRAND TOTAL (A+B+C)	2.720	2.719

As can be seen from Table-5, the funds allocated to various project components have been fully utilized. However, in some components, Dr. AIT could spend more than the allocated amount and these activities were funded by the Management.

Achievements

1. **Accreditation:** Dr. AIT was accredited for the first time in the year 2005.
2. **Board of Governors (BOG):** Dr. AIT had formed a BOG consisting of members from the Trust, the Principal, TEQIP Programme Coordinator and all HODs. BOG is working in accordance with the guidelines specified under the Project.
3. Dr. AIT established the following four funds as required and has been augmenting the funds periodically.
 - i. Corpus fund - A/c No: 201/14012
 - ii. Staff Development fund - A/c No: 201/14031
 - iii. Maintenance fund - A/c No: 201/14027
 - iv. Depreciation fund - A/c No: 201/14050

These funds are established exclusively for sustaining the TEQIP-related activities. A budget provision for other regular activities of the Institute exists separately.

4. **IRG:** The Institute's IRG mainly consists of the tuition fees from the students and this is adequate to meet all the financial requirements of the Institute. The IRG from other sources like consultancy projects has been increasing in the recent years because of the impetus given by TEQIP.

Other Achievements:

- 1 **Civil Works:** Dr. AIT could complete civil works (Construction of PG building and Refurbishment work) component under TEQIP with the allocated fund of 16.455 million. In this component a PG centre building has been constructed at a cost of Rs.20.000 million, out of which Rs.13.000 million contributed by the TEQIP and the remaining amount of Rs.7.000 million was contributed by the Institution Management.
- 2 **Utilization:** Utilization of all the equipment procured under TEQIP is 100%. Faculty, staff, and students are making good use of these equipment for their research and project work.
- 3 Dr. AIT is happy to record that its faculty training activities have gone beyond what was envisaged in the CIP. About 90% of the faculty have undergone one or more training programmes. Even faculty with

less than two years of service at Dr. AIT have been able to derive the benefits of training under TEQIP.

Implementation Mechanism and Performance; Monitoring and Evaluation Mechanism and Performance:

Dr. AIT established a council of senior faculty including Heads of Departments for monitoring the execution of the project and for evaluating its implementation. The Senior Professors have been assigned the responsibilities as Programme coordinator, Nodal Officers for Academic Excellence, Procurement, Finance, Civil Works, Networking, Training, Service to Community, Tribal Development, etc.

The state of Karnataka was very fortunate in receiving guidance from distinguished and internationally renowned academicians who acted as the Performance Auditors and Mentors under TEQIP. They were highly effective and their advices were extremely useful in the overall development. Dr. AIT had the benefit of advice from its Performance Auditor Dr. V.K. Aatre and Dr. N.R. Shetty as its Mentor.

Project Sustainability:

1. **Financial Sustainability:** Dr.AIT established the four mandatory funds to sustain TEQIP activities beyond the project period. The Management is committed to enhancing these funds as required to ensure that all the activities envisaged under TEQIP can be sustained.
2. **Institutional Reforms:** The Management of Dr.AIT has been encouraging the initiation of several reforms to enhance the academic excellence and satisfaction of faculty, staff, and students. Several programmes were launched even before the commencement of TEQIP. The participation in TEQIP has given a further boost and direction to these activities. The commitment of the Management and the visible gains from the TEQIP will form the basis for sustaining these reforms.
3. **Outcome Sustainability:** With the impetus provided by TEQIP and the grant of Academic Autonomy, commitment of the Management, enthusiasm of the Faculty and Staff, and sustained

reforms, Dr.AIT is confident of continuing to achieve the outcomes as planned

Borrower's Performance:

Based on the guidelines provided in the TEQIP documents and using the inputs received from the departments during several brain storming sessions, Dr.AIT conceived and developed a balanced CIP addressing all the quality needs of the Institute. This CIP was further reviewed by NPIU and based on their inputs the CIP was fine-tuned. Several implementation committees were formed in accordance with the TEQIP guidelines. An overall project monitoring committee consisting of senior faculty including Heads of Departments was also constituted. A duly constituted Board of Governors (BOG) acted as the highest authority. This structures and mechanisms ensured that Dr.AIT performed well in all the aspects. However, there were some initial hiccups in the implementation of Networking and Services to Community components. With advice from the Mentor and help from NPIU and SPFU, Dr.AIT was soon able to overcome these bottle necks and perform well in these areas also. After re-appropriation of funds to various project components in a suitable manner with the approval of SPFU, Dr.AIT has successfully utilized all the funds allocated to different components. In summary, the performance of Dr.AIT in TEQIP is highly satisfactory.

Future Operations:

Dr. Ambedkar Institute of Technology has spent considerable funds on Faculty Training Programmes already. Even faculty with less than two years of experience have been deputed for training programmes. Dr. AIT plans to further strengthen the Faculty and Staff Training activities. Long-term training programmes as well as Faculty internships with the industries are also being planned. Substantial enhancements in the research funding are envisioned. Already about 35 of our Faculty members have registered for their Ph.Ds. The others will also be encouraged to pursue higher qualifications.

Based on the experience gained from TEQIP, Dr. AIT is planning to further strengthen its Networking activities. Further, it proposes to involve large number of students in technically challenging projects aimed at solving the

problems of the Community. It proposes to leverage the benefits of Academic Autonomy for implementing fully reforms like credit transfers, summer terms, etc.

Key Lessons Learnt:

Among several lessons learnt while implementing TEQIP, the Institute considers the following two to be the most important ones;

- a. The success of Institute-wide, complex project like TEQIP critically depends on the active participation and involvement of all the faculty, staff and students, in addition to the commitment of the top Management. A sense of ownership must be established in all the stake-holders.
- b. A change in the mind-set of faculty, staff and students is required to enable them to collaborate effectively with other institutes. Thus, the success of Networking requires not only academic autonomy but also appreciate orientation programmes and training.